



vidwat

The Indian Journal of Management

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VIDWAT (विद्वत्) in Sanskrit means: know, understand, find out, learn, ascertain, discover and expound.

“Vidwat – The Indian Journal of Management”, published by DHRUVA College of Management, Hyderabad, reflects this array of meanings. It is a vehicle for a wide range of researches from across the globe to bring their insights to B-Schools as well as practicing managers.

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Editorial

An extra surge of adrenaline pumps its way through the veins of Gen Y as the New Year arrives. They push themselves with hullabaloo, with hope, with zest, and with euphoria. But they are rudderless for they are oblivious to what is important, what is precious, and what is real. By the time the wisdom dawns on them, it is too late. The raindrop falls from the sky. If it is caught in hands it is pure for drinking. If it falls in gutter it is valueless. If it falls on a hot surface, it perishes. If it falls on a Lotus leaf, it shines like a Pearl. However, if it falls on an Oyster, it becomes a Pearl. The raindrop is same, but its existence and its worth depend on with whom it associates.

As someone has rightly said, "What you are is God's gift to you; what you make of yourself is your gift to God". Like birds, we humans too need to have courage of conviction, hope against hope, and faith in the cosmos. For we are not just this body-mind complex.

Tat-vam-asi ... you are that. We are an entity unique in this whole universe that has immense possibilities. If we can't find moorings in ourselves, anchor to nourish our core competency, conscientious to savour each moment of our existence....we'll not be able to self "actualise-nirvana".

If we can't find happiness "ananda" in ourselves, it is impossible to find it elsewhere a.k.a "kasturi mrig".

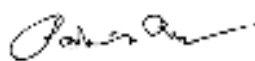
In the waning hours of the year gone by, we stumble; get entangled in deep crisis, disappointments, unfulfilled dreams and unfinished business of life... for we are not sure whether, when, and how the new year will dawn. Then suddenly, 2015 is over – like a stone from a sling shot.

If the New Year isn't a miracle - time capsuled like in a rain drop-worth having faith in, precious to hold in both our palms, nectar to receive in the oyster of our soul.....I don't know what is!

*May we all move with joy, with gratitude, with faith and with an attitude
"don't care - face the brute" to 2016.*

As is my wont, this time I'm telling
**"STORY OF ANT - a lesson in
GRIT, LEADERSHIP & NISHKAMA KARMA" as filler(s)**

https://www.ted.com/talks/deborah_gordon_what_ants_teach_us_about_the_brain_cancer_and_the_internet



Dr. S. PRATAP REDDY
Founder Chairman - DHRUVA
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Op-Ed

MANAGEMENT OF MOB DYNAMICS AT WORKPLACE

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Chief Electrical Engineer, South Central Railway

Heavy industries where workforce is centralized, the dynamics of workforce is similar to mob dynamics or mobocracy. If managers are able to lead their mammoth work force towards goal of the organization, it does wonders. Mishandling or casual handling may lead to turmoil and may cause irrecoverable loss to the reputation of the organization. Therefore, the prime responsibility of managers is to handle this massive workforce with great care and synergize their actions towards the accomplishment of organizational goals.

Mob dynamics or mobocracy is characterized by immediate formation of mob, fast spread of rumors, increased bargaining power of trade unions and their leaders, multiple representations, augmented dependence on unions where communication becomes extremely challenging. People are likely to become more sensitive to dignity and human values, where political affinity is at its peak affecting the cultural and social facets of the organization.

Managers should have altogether a different strategy to manage such mobbed workforce. The following actions may be considered while dealing with mob dynamics at workplace.

Workforce concentrated at a single spot has a tendency to assemble in and around the mob object. This object may be an industrial accident, an instigator, a public speaker or a politician. Managers have to be extremely vigilant and act immediately before massive crowd builds up. The mob object should either be removed or displaced. It requires managers to reach the spot immediately and take the situation into his or her control. It is necessary to control paddling of rumors, offshoot of instigation and clarify things with patience, humility and human touch.

All organizations do have staff welfare plans in place, but many a times, they are intangible and are not appreciated by the workforce - medical benefits, soft loans, pension schemes are some examples of intangible benefits, on the other hand certain tangible benefits/ staff welfare measures such as provision of canteens, rest rooms, potable water, clean toilets, ergonomic furniture, proper lighting etc are very much appreciated by the workforce. Therefore, it is better to accentuate tangible benefits than the intangible ones. Along with these, accessibility and approachability to managers, suitable channels of communication, grievance handling mechanisms are highly appreciated by workforce.

Many a time, rumors spread like wildfire, it is extremely important for the managers to control/ prevent these rumors through open communication in a non threatening atmosphere. Managers have to be keen to capture the sources of rumors through formal and informal channels, rumor-mongers should be curbed and kept under stringent surveillance. Corrective measures should be taken before these rumors snowball. Grapevine will be an effective tool in communicating positive information and curbing negative rumors across rank and file of work force.

Implementation of programs such as quality circles, total quality management, six sigma, Five S can be of great utility in making workforce sensitive to the organizational goals and customer needs. Further, it is very much necessary to have an appropriate system of checks and balances to avoid pilferage.

Fostering brotherhood can do wonders at workplace. Employees, if treated like brethren would be able to vent their negative emotions like frustrations, grievances, worries, tensions and anger. A manager who is a passionate listener brings a big change. Managers should be approachable to the employees under all circumstances unconditionally.

Managers can in fact approach the employees to help overcome their fears, worries, personal problems. Camaraderie and family culture building, fair play & justice, setting time standards and removing drudgery in work itself will go a long way in weaning workers around company's objective.

Communication matters most. Organizational policies, disciplinary procedures, grievance handling procedures, welfare measures have to be communicated as frequently as possible in both verbal and non-verbal modes. Organizational vision, mission, and goals, customer needs should be communicated and displayed in the premises where they are prominently visible. There is an urgent need for developing emotional bonding, feeling of ownership, and belongingness among the employees. They in fact should be made the "Brand ambassadors" of the organization. Making policies transparent and worker friendly will make them own up the company, Japanese style "feathers work - not sledge hammers" in dealing with mobocracy at work place may do wonders.

Rotational training programs in the areas like quality, sensitivity to customer needs and preferences and employee development programs to prepare them for higher responsibilities can enhance the employee morale to greater heights. Dreams of the employees have to be nurtured and converged with organizational growth. Right person in the right job is the key to success.

Pecuniary Benefits are not everything, employees have to be treated with dignity and respect, their contribution towards the goals should be recognized and valued. Their creativity has to be nurtured, public recognition of their contribution/ achievements in the presence of kith and kin can impact to a great extent.

Building a positive Organizational atmosphere is very much important as it helps employees align their goals with the goals of the concern. Managers should strive to build such environment persistently.

Workplace Spirituality or Spirituality in the Workplace is a movement with individuals seeking to live their faith and/or spiritual values in the workplace. Spiritual programmes like meditation, prayer, yoga, all bring out dedicated human being from inside of employees and transform them into dedicated and devoted workers. This should be implemented with utmost care without hurting anyone's feeling or favoring any one's belief system.

Implementation of above initiatives help managers handle concentrated workforce efficiently. These steps will mitigate employee's unrest and also avert any such uncalled events in heavy industries.

R.K.SHARMA is working as Chief Electrical engineer (Service) with South Central Railway under Min of Railways Govt of India and has very rich experience of 25 years in handling concentrated labour and bringing out the appreciable results in government sector. His services have been recognized many times at General Manager Level, Ministry Level and also outside of organization. He is a good blend of technocrat, manager and academician and thus has academic degrees from renowned institutions in all these three fields. He has also gone on assignments in France and Russia and has training at INSEAD Singapore, IILIFM Malaysia, ISB Hyderabad and other in-house Railway Institutions on various aspects of Management Fields. He offers expert lectures on various topical subjects like Business Law, Industrial Relations Management, Interview as well as Life Skills gratis at DHRUVA College of Management - Hyderabad.

Centralized Training Academy for Railway Accounts (C-TARA) of Indian Railways located at Secunderabad is a premier training institution meant for all All-India service officers of Indian Railways. C-TARA empanelled DHRUVA college of Management for conducting several management development programs. As part of this mandate, DHRUVA designed and organised training programs in such cutting-edge areas of Railway operations and management as Project Appraisal with latest cost and financial analysis, Transport Economics and Analytics and Japanese Management Practices. The feedback received from the participants has been highly encouraging and DHRUVA takes pride in its association with C-TARA of Indian Railways.

GROWTH AND PROSPECTS OF PRIVATE LABEL BRANDS IN INDIAN RETAIL INDUSTRY

Dr. R Satish Kumar¹

Dr. K. Balanaga Gurunathan²

Venkat Kista Reddy. G³

ABSTRACT

There has been an immense change which has taken place in retail sector, and the shift from unorganized to organized retailing is growing. Private labels though in its nascent stage, have a very bright future. The trend of private label brands is fast catching up among the Indian retailers. In future, there is great scope for development for private labels as their share in India is only 6 per cent currently as compared to 19 per cent and 39 per cent in the US and UK, respectively. This research paper aims to highlight and analyse specifically the growth and prospects of private label brands in Indian retail industry.

Key words: *Private Label Brands, Indian Retail Industry*

Store brands or private label brands are owned, controlled, and sold exclusively by a retailer (Baltas, 1997). According to the Private Label Manufacturers' Association (PLMA), Private labels encompass all merchandise sold under a retailer's brand. That brand can be the retailer's own name or a name created exclusively by that retailer. Private label products are typically manufactured or provided by one company for offer under another company's brand. In retail world it usually means a manufacturer (which can be the retailer itself) making products exclusively for a retailer, which are to be sold under retailer's own brand name.

Private label brands were first introduced over 100 years ago in a few product categories, which are available now in all product categories in developed western countries. Growth of organized retail chain in India has also led to growth of private label brands in India. Indian economy has seen average growth rate of more than 7% since 1994, putting purchasing power in hands of customer. Though, initial growth of private label brands in India has been limited to certain

categories like grocery and apparel, it is slowly expanding into other categories as well. The Indian retail market is the fifth largest retail destination globally and has been considered the most attractive emerging market for investment. Overall, the Indian retail market is growing at 30% annually, with the organized segment, which currently accounts for around 9% of the Indian retail market, registering above average growth of 30% (Report on Indian retail industry by Cygnus, 2010). Thus, with growth of organized retail in India, the private label brands are also expected to grow.

OBJECTIVES

The key objective of this paper is

To understand the growth of Private label brands and to analyse the future of Private labels in Indian Retail Industry.

GROWTH OF PRIVATE LABEL BRANDS IN INDIAN RETAIL INDUSTRY

With the growing retail sector, private labels or store brands are a rising phenomenon in the Indian organized retail market. Though shoppers have been migrating towards private labels long before the economic slowdown started, the slowdown has significantly increased the pace of this shift, thus favorably affecting the private label sales of almost all large retailers like Reliance Retail, Aditya Birla Retail, Infiniti Retail, Pantaloon Retail and Shoppers Stop.

The private label phenomenon is circumventing around the Indian and global context.

A. Global scenario

The world private label market is estimated to be US\$ 1,780 billion growing at 6 per cent p.a. vis-a-vis national brands which are growing at 2-3 percent per annum. For each US\$ 100 spent by consumers globally, US\$ 17 is spent on private labels. Retailers

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like Wal-Mart, Tesco and Sainsbury have successfully launched private labels across all price points from value to premium and have more than 40 per cent of their sales coming from private labels. Some of the successful private label examples are:

- Wal - Mart's private label 'George' is one of the highest selling apparel brands in the US.
- Aldi, the German deep discounter has more than 90 per cent of its sales coming from private labels. Some of its private labels sell more than any national brand in Germany, e.g., Aldi's private label 'Tandil' is one of the largest selling washing powders in Germany.

B. Indian scenario

As compared to the global scenario, in emerging markets like India the private label market is still at a nascent stage. Though the share is still less than an estimated 7-8 per cent (US\$ 1.4-1.6 billion) of organized retail sales, it is growing fast. Growth is primarily driven by:

- Increasing strength of modern trade
- Relatively lesser brand loyalty and high 'value' loyalty amongst Indian consumers
- Foray of private label products into new categories, largely those that are becoming increasingly commoditized (dry groceries, oils processed foods, basic apparel, home furnishings, small electrical, etc.) and the new emerging categories where brand strength is relatively much lower.

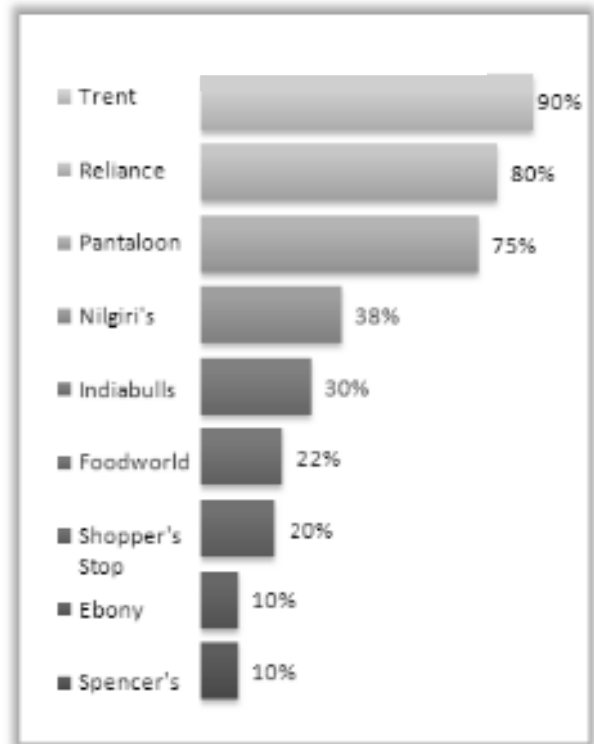
Some examples to quote from the Indian context are as follows:

- India's largest retail company Future Group has 12 apparel, 4 FMCG and 2 household product private labels in its formats Big Bazaar, Food Bazaar and Pantaloons. Besides these it also has many other private labels across categories and formats.
- Aditya Birla's private labels cover 7 brands and many products and variants in categories like cereals, processed foods, detergents and other products. It is also planning to launch its private labels in milk and dairy products.
- Tata Croma has plans for 100+ private labels across categories like personal care equipment, laptops, small appliances, etc.
- Reliance Fresh sells staples and food items under Reliance Select and Reliance Value brands. It has recently launched Dairy Pure, in the liquid milk

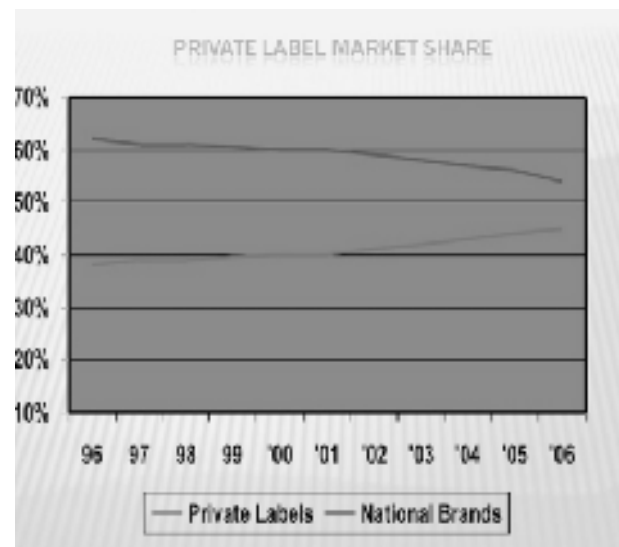
segment. Reliance also sells a number of private labels in other categories like apparel, through its various other formats.

- Shoppers Stop has around 10 private labels, the prominent ones being Stop, Kashish and Life.

Figure-1: Percentage Share of Private Labels Vs National Brand at Organised Retail Sector



Graph-1: Private Label Market Share Vs National Brands Globally



Prospects of private label brands

- As immense changes are taking place in retail sector, and the shift from unorganized to organized retailing is growing, private labels though in its nascent stage, have a very bright future.
- According to a study conducted by A.C. Neilson (2005) on private labels in India, it was found that 56% of the respondents believed that private labels are good alternatives to national brands. The study also highlighted that 62% of the respondents feel that private labels are good value for money.
- Apart from launching range of products, additional efforts are immensely increasing for promoting the private labels of retail outlets which includes in store advertisements, additional discounts on private label purchase, making exchange schemes available on private labels in comparison with national brands and additional visual merchandising for store brands. This clearly depicts that the retailers want to grow with the growth of their private label business.
- Private label advantage is in its price: Private label products are usually priced 15% to 40% lower than branded products (Stern; El-Ansary; Coughlan, 1996) which clearly portrays the growth of private labels in a developing country like India.
- Country's leading retailers like Future Group, Aditya Birla Retail Reliance Retail and Hyper city are having ambitious plans on private label brands across food and non-food sectors.

Impacting factors for organized retailers

Some of the impacting factors that have been seen in the part areas follows.

Higher gross margin earning for retailers

- Better bargaining power while negotiating with national brand manufacturer especially in the price line and credit policies
- Enhanced Store Image
- Lesser promotion cost due to in store advertising which adds up the margin of the retailer
- Gives the retailer freedom to schedule his own marketing plan and makes changes when required.
- Customers may get quality products at affordable cost.

Conclusion

Hence it gives us reason to believe that the trend of Private Label Brands is fast catching up among the Indian retailers as it posing a win-win solution for retailers and customers in the current retail environment. In the coming years, there is great scope for development for Private Label Brands as their share in India is only 6 percent currently, as compared to 19 percent and 39 percent in the US and UK respectively.

References:

1. Agarwal, D.P., D. Singh, S. Kabiraj and A. Andrews (2003). Strategies and Models for E-Retailing: Attempted Retrospection in the Indian Context, Paper presented at the Seventh International Conference on Global Business and Economic Development, International Trade Counselling Centre, January 8-11.
2. Abbott, J.C. (1967). The Development of Marketing Institutions. In H.M. Southworth and B.F. Johnston (eds.) *Agricultural Development and Economic Growth* (pp. 364-399). Ithaca: Cornell University Press.
3. AC Nielsen. (2007). Survey of Consumer's Shopping Behaviour and Perceptions toward Modern & Traditional Trade Channels in Indonesia. Report to the World Bank/Indonesia.
4. Batra, R., & Sinha, I. (2000). Consumer-level factors moderating the success of private label brands. *Journal of Retailing*, 77(3), 299-318.
5. J. Joshua Selvakumar, P. Varadharajan. Study (2013) on the growth prospects of private labels to that of national brands in the FMCG retail sector in Coimbatore. *International Journal of Economics, Business and Finance*, Vol. 1, No. 2, March, PP: 26 - 34, ISSN: 2327-8188 (Online).
6. Kanwalpreet Kaur, (2013). Increasing private label share in Indian retail. *Arth Prabhand: A Journal of Economics and Management*, Vol.2 Issue 7 July, ISSN 2278-0629.
7. Rastogi, R. (2002). India. Country Report on E-Commerce Initiatives, Department of Information Technology, Ministry of Communication and Information Technology, India. Website : http://www.unescap.org/tid/publication/partthree2261_ind.pdf.

8. Reardon, T. (2003). Capital Market Liberalization and the Latin American Agri food System. Trade Reform and Food Security, FAO.
9. Reardon, T., C.P. Timmer, C.B. Barrett and J.A. Berdegue (2003). The Rise of Supermarkets in Africa, Asia and Latin America, American Journal of Agricultural Economics, Vol. 85, No. 5, pp. 1140-1146, December 2003.
10. Saab, W.G. and Luiz Carlos Perez Gimenez (2000), Current Aspects of Food Retailing within Brazil and at International Level, The Brazilian Development Bank. <http://www.bndes.gov.br/English/studies/studies02.pdf>.
11. Vedpuriswar, A.V., (2001). The Globalization of the Retailing Industry. Chapter from the Book-The Global CEO, ICAFI Website: <http://www.vedpuriswar.org/book/bookoverview>.
12. Wrigley, N and A. Currah (2003). Globalizing Retail and the E-economy: The Organizational Challenge of E-Commerce for the Retail TNCs, International Review of Retail and Distribution Management.

Ant's Story of "Leaderless Management"

Who doesn't want to be successful?

We normally try to emulate big people -but we don't know that, we can learn big lessons from smallest.

For instance, none of us would believe that we can learn the secret to successful life from ants, one of the God's smallest creatures. Ant is an incredible species. They walked on the earth with dinosaurs. They survived conditions that the mighty dinosaurs could not. They have conquered every climate condition on the earth-from deserts to rain forests, from savana to swamps, even densely populated urban areas. They have achieved this by running very large organizations-their colonies-successfully. Compared to a chimpanzee or dolphin, an ant's brain is very miniscule, which is true for an individual ant; but put them together and eye-popping structural feats soon start emerging. Usually each colony has a few thousand individual ants but scientists have found colony of ant's colonies with millions of ants and stretched over 6,000 km. Each symbol is a colony, and the size of the symbol is how many offspring it had. The organization of ant is that the queen ant is probably the most significant individual ant but she just lays eggs but does not control the nest or colony. Rests of the ants are divided in 3 categories based on their primary tasks. There are soldier ants who defend the nest, food gatherers whom we usually notice and nest maintenance ants. As a rule, they perform their own function but if the situation changes say a large stock of food is found or nest is attacked or there is an obstruction near the nest, the ants switch the role. The nest maintenance work is stopped to collect the food or food gathering is stopped to defend the nest so on and so forth. Army ants, for instance, don't let gaps in their path stop them. If they are on one tree and have to go to the next, they simply build a bridge using their own bodies; a small curtain of ants will hang from one tree and wait for the wind to waft it up till the ants at the lower edge can grab the other tree. The others can cross over. Similarly, when fire ants need to cross a body of water, they fashion a raft made with themselves that cannot only float but carry up to a millions of them on it. The interesting point is that no individual ant has any idea of what's happening even though, jointly the thing happens. It works through a process of self-organization that is not controlled by any subsystem and gives rise to an emergent phenomenon that is of a higher order. The same

thing can be interpreted for human brains. Every neuron is relatively dumb, but if you take billions of them, they interact in a way that we have only scratched the surface of understanding. The ants use interactions differently in different environments.

The most astonishing part is this is a leaderless management. There is no central control. There is no single individual ant or a committee who asks the ants to do certain tasks. So, in ant colony, there is no single charge, and all systems like this without central control are regulated using very simple interactions. Ant interact using smell. They smell with their antenna, so when one ant touches another with its antenna, it can tell, for example, if the other ant is a nestmate and what task that other ant has been doing. All of these interactions, taken together, produce a network and it's this constantly shifting network that produces the behavior of the colony like whether all the ants are hiding inside the nest, or how many are going out to forage. Each ant seems to make her own decision based on her understanding of the external situation. Also there is continuous knowledge transfer happening within the individual ants. Amazingly, they seem to get it right for over few hundred million years. Ants are able to run very large organizations successfully as they have figured out how to empower the frontline, build organizational wisdom based on their experience and use it to build longevity of the organization. We, humans, have a lot to learn from the ants destination – a flower bed at the end of the terrace and a small hole that was the entrance to its underground home. There are more than 12,000 species of ants, in every conceivable environment and they are using interactions differently to meet different environmental challenges. One important environmental challenge is dealing with operating costs and resources. For, instance, in the desert, operating costs are very high because water is very scarce and the seed-eating ants in the desert have to spend water to get water. So, an ant foraging, searching for seeds in the hot sun, just loses water into the air. So, in this environment, interactions are used to activate foraging. An outgoing forager doesn't go out unless it gets enough interactions with the returning foragers, and what we see are the returning foragers going into the tunnel, into the nest, and meeting outgoing foragers on their way out. This makes sense for the ant colony, because the more the food there is out there, the more quickly the foragers find it, the faster they

come back, and the more foragers they send out. Operating costs are low in the tropics, because, it's very humid, and it's easy for the ants to be outside walking around. But the ants are so abundant and diverse in the tropics that there is lots of competition. Another environmental challenge is that they have to find resources, find and collect them. And to do this, ants solve the problem of collective search. They are good at dealing with main problem of collective search, which is the trade-off between searching very thoroughly and covering a lot of ground. When there are many ants in small space, then each one can search very thoroughly because there will be another any nearby searching over there, but when there are a few ants in a large space, then they need to stretch out their paths to cover more ground. They use interactions to assess density. So, when they are really crowded, they meet more often, and they search more thoroughly.

We might be able to learn something from ants about treating cancer. A particular type called Streptomyces bacteria live on the outer surface of the ants, providing anti-biotic protection against disease causing infection. It's quite obvious that we could do a lot to prevent cancer by not allowing people to spread around or sell the toxins that promote the evolution of cancer in our bodies. There are many different kinds of cancer. Each one originates in a particular part of the body, and then some kinds of cancer will spread or metastasize to particular other tissues where they must be getting resources that they need.

Interestingly, the internet uses an algorithm to regulate the flow of data that's very similar to the one that the harvester ants are using to regulate the flow of foragers. This analogy is termed as anetnet. So, data doesn't leave the source computer unless it gets a signal that there's enough bandwidth for it to travel on. In the early days of internet, when operating costs were really high, and it was really important not to lose any data, then the system was set up for interactions to activate the flow of data. It's interesting that the ants are using an algorithm that's so similar to the one that we recently invented, but this is only one of a handful of algorithms that we know about, and ants have had 130 million years to evolve a lot of good ones, and it's very likely that some of the other 12,000 species are going to have interesting algorithms for data networks that we haven't even thought of yet.

... contd pages 15, 16, 37 & 42

A STATISTICAL ANALYSIS OF BITCOIN TRANSACTIONS DURING 2012 TO 2013 IN TERMS OF PREMIER CURRENCIES: DOLLAR, EURO AND RUBLES

Sandeep Bhattacharjee

ABSTRACT

Today's globalised world economy is dependent on financial markets spread all over the world. These financial markets have various instruments of trade such as stocks, derivatives, currencies of various countries. The large number of currencies such as Dollar, Euro, Rubles etc. create high volatility while trade takes place in financial markets. This problem needs to be resolved to ensure economic development of all the countries in the world. Therefore, this paper is an attempt to statistically analyse certain aspects of a new evolving algorithmic based currency or virtual currency known as Bitcoin. In this paper, we have tried to statistically determine the strengths of Bitcoin by studying and analyzing data available over internet. These findings of this research can be utilized by academicians as well as those involved in currency trade for betterment of the economy.

Key words: *Bitcoin, Dollar, Euro, Ruble, volatility, trade.*

1. INTRODUCTION

1.1 Bitcoins

Before understanding Bitcoins, we must try to uncover the market in which it was previously operated. The virtual market Silk Road was an online marketplace which provided virtual infrastructure for sellers and buyers to exchange or buy/sell over the internet. It was comparable to eBay, but with two major differences: the majority of the items ordered for sale were illegal, and there was great stress on trying to ensure, as much as possible, the anonymity of both sellers and buyers.³

The one and only form of payment system used on Silk Road was Bitcoins. This is a decentralized form of electronic currency invented in 2008 by Satoshi Nakamoto, whose actual identity still remains a major mystery.⁸ When a purchase was made, the appropriate and quoted number of Bitcoins agreed was moved from

the buyer account to seller account, both maintained by Silk Road. Silk Road also used a so-called tumbler which, as the site termed as, sending all payments through a very complex, semi-random series of dummy transactions making it nearly impossible to link your payment with any coins leaving the site.¹²

1.2 Currency trade/dynamics:

Currency trading is a 24-hour market that is only closed from Friday evening to Sunday evening, but the 24-hour trading sessions are misleading. There are three sessions that include the European, Asian and United States trading sessions. Although there is some overlap in the sessions, the main currencies in each market are traded mostly during those market hours. This means that certain currency pairs will have more volume during certain sessions. Traders who stay with pairs based on the Dollar will find the most volume in the U.S. trading session.⁵ (Source: [http:// www.investopedia.com/financial-edge/0412/the-basics-of-currency-trading.aspx](http://www.investopedia.com/financial-edge/0412/the-basics-of-currency-trading.aspx))

Pips and Pairs concept is used in currency trading. A pip measures the amount of change in the exchange rate for a currency pair. For currency pairs displayed to four decimal places, one pip is equal to 0.0001. Yen-based currency pairs are an exception and are displayed to only two decimal places (0.01).⁹

Determining Pip Value⁹

The monetary value of each pip depends on three factors: the currency pair being traded, the size of the trade, and the exchange rate.

- Based on these factors, the fluctuation of even a single pip can have a significant impact on the value of the open position.
- For example, we assume that a \$300,000 trade involving the USD/CAD pair is closed at 1.0568 after gaining 20 pips. To calculate the profit in U.S. Dollars, one has to complete the following steps:

1. Determining the number of CAD each pip represents by multiplying the amount of the trade by **1 pip as follows:**

$$300,000 \times 0.0001 = 30 \text{ CAD per pip}$$

Dividing the number of CAD per pip by the closing exchange rate to arrive at the number of **USD per pip**: $30 \div 1.0568 = 28.39 \text{ USD per pip}$

2. Multiplying the number of pips gained, by the value of each pip in USD to arrive at the total **Loss / profit for the trade:**

$$20 \times 28.39 = \$567.80 \text{ USD profit}$$

2. Literature review

Bitcoin first appeared in January 2009, the creation of a computer programmer using the pseudonym Satoshi Nakamoto. (Craig K. Elwell, 2013)⁶ discussed his invention as an open source (its controlling computer code is open to public view), peer to peer (transactions do not require a third-party intermediary such as PayPal or Visa), digital currency (being electronic with no physical manifestation). The Bitcoin system is private, but with no traditional financial institutions involved in transactions. Unlike earlier digital currencies that had some central controlling person or entity, the Bitcoin network is completely decentralized, with all parts of transactions performed by the users of the system.

(Brito, Castillo, 2013)⁴ highlight the issues of apprehension for policymakers, consumers and regulators and also discuss the benefits of Bitcoins network, its properties and operation. It also emphasizes on the current regulatory aspect and the potential regulatory framework for Bitcoins. Revolutionary invention of Bitcoins succeeded in solving the problem of double spending without the interference of third party. Usage of Bitcoins helps to mitigate the transaction cost and is faster than the traditional avenues of payments. Access to the financial services in developing countries can be augmented by using Bitcoins. It has a potential to perk up the quality of life of poor people in the countries with strict capital control. Apart from benefits it provides the Bitcoins offers some threats to its potential users like fluctuation in the value, security concerns and laundering money for financing illegal trafficking of goods. Considering the regulatory aspect of the Bitcoins there is a huge ambiguity regarding the application of law because it does not fit into the existing statutory definition. Existing law and directives does not envisage a

technology like Bitcoin. Bitcoin being an electronic payment system is likely to be scrutinized by different regulators who may confront questions like legality of online currency, licensing of money transmission, consideration of Bitcoins as currency or commodities etc. The paper concludes with some suggestions for the policymakers to minimize the negative results.

(Yermack, 2013)¹³ observe the legitimacy of Bitcoins as a currency. The author disagrees that the Bitcoins can be established as a bonafide currency rather they behave more like a speculative instruments. The classical properties of a typical currency are i) it acts as a medium of exchange ii) unit of account iii) and store of value. Bitcoins seems to satisfy the first criteria because an increasing number of online merchants have acknowledged it as a medium of payment but it fails to satisfy the other two criteria. Exchange rate volatility of Bitcoins is higher as compared to the fluctuations in other currencies and reveals zero correlation with other currencies which undermines its usage as a unit of account and store value. Market volatility of Bitcoins in the year 2013 has been 133% which is far more than the volatility with other currencies which fall between 8% to 12%. Gold exhibits the volatility of 22% and even the most risky stocks exhibits volatility of 100% which makes the Bitcoins incompatible and risky for the investors. Moreover all the multinational companies deal in multiple currencies endeavor to hedge themselves against the risk arising from the fluctuations of currencies. But having a zero correlation with other currencies makes Bitcoins useless for the purpose of risk management. For Bitcoins to be established as a justifiable currency, its value needs to be more stable.

(Sablik, 2013)¹⁰ converses regarding the potentials and threats of the private currencies like Bitcoins. In the wake of financial crisis in 2008 the merchants who were looking at an alternative to the government issued currencies accepted Bitcoins as a medium of exchange. But on the darker side the author is concerned about the security and regulatory issues of Bitcoins. Bitcoins being a digital currency is virtually unspecified and is increasingly being used to finance illegal activities. Moreover the magnitude of variation in the daily value of currency is very high as compared to other hard currencies. The value of a single Bitcoin rose from approximately \$13 in January to \$1,200 in November, a rise of more than 9,000 percent which discourages its use as a unit of account and store value.

(Elwell et al, 2013)⁶ is concerned about the legal and

regulatory issues raised by Bitcoins and also talks about the various factors that may deter the growth of Bitcoins. Three potential benefits offered by the Bitcoins are: lower transaction costs, better privacy, and no corrosion of purchasing power due to inflation. But certain factors like i) unattractive avenue for holding wealth because it is associated with complex computer program which many merchants are unable to understand ii) lack of controlling authority iii) daily volatility in the value of Bitcoins iv) widespread use of Bitcoins will lead to increased demand compared to supply that can cause the fall in the Bitcoin price of goods and services causing deflation v) and uncertain network security. Legal issues concerning the virtual currency is that no laws and regulations describe the duties and responsibilities of parties, provide for decisiveness of settlement, resolution of argument, or regulation of services provided.

(Grinberg Reuben, 2012)⁷ is attentively optimistic about the prospect of Bitcoins. With the internet becoming an integral part of our society and economy there is a witnessed increase in the variety of goods and services that can be procured with the Bitcoins. But the author also concerned about the security aspect of the Bitcoins. The security of the system depends upon the inconceivable amount of computational power required to avert a forgery. Any individual, corporation or government entity can attack the network's security for a high incentive. Also there is no straightforward way for the owners to securely store the Bitcoins and storing them on one's system can surely be risky. The paper also highlights on the speculative vulnerability of the crypto currency.

(Shamir, Ron, 2012)¹¹ attempts to provide an answer to the various questions regarding Bitcoins like number of users in the system and their behavior, how the Bitcoins are acquired, spent and about the variation of the balance in the account, are the Bitcoins kept in the savings account or are spent immediately, movement of Bitcoins between various accounts and distribution size of Bitcoins contract. For the purpose of isolating all the large transaction in the system and the means of spending the amount, the full details of the Bitcoins transaction available on the internet was downloaded and processed. In order to have a correct depiction of financial activity of each user the graph of Bitcoin addresses and transaction was constructed, the addresses having the same entity were identified and the information was used to contract the graph by

integrating such addresses. It was discovered that all the large transactions were offspring's of a single transaction conceded in November 2010 consisting of 90,000 Bitcoins. It was discovered that the majority of the Bitcoins stay inactive in addresses which had never contributed in any transactions. It was established that there is an enormous quantity of tiny transactions moving only a minute fraction of a single Bitcoin, but there are also hundreds of transactions moving more than 50,000 Bitcoins.

(Barber et. al, 2012)¹² conducted a detail study to analyze the reasons behind the success of Bitcoins. The study investigated and identified the appeal of the Bitcoins lies in its unfussiness, elasticity, and decentralization, making it simple to understand but tough to challenge. The paper examines the design of the Bitcoins and focuses on its strengths and weaknesses in order the identify the potential threats to the system and also suggests various techniques like fail-safe mixer protocol which requires no interference of third party and system modification in order to improve the same. An in depth investigation of the Bitcoins reveals the startling amount of ingenuity. Inventively designed Bitcoin system provides an economic incentive to the users to participate in the system which is the key factor to the success of Bitcoins against other e-cash systems.

(Babaioff et al, 2012)¹³ stresses on the problem of composition of incentives in the Bitcoin system. For successful authorization of the transactions the nodes are offered incentives in the form of predetermined Bitcoins. This gradually builds the supply of Bitcoins. But Bitcoin's protocol states a declining pace of money creation that in effect put a cap on the total circulated number of Bitcoins.

As this compensation to nodes is gradually phased out, Bitcoin owners are required to pay an amount to the authorizing nodes for the approval of transactions. Here the incentive problem becomes visible. To eliminate the problem the author proposes a variation to the protocol with a method that recompenses information propagation. The paper emphasises that each variation in the Bitcoin protocol has to pass through Sybil attacks. The Bitcoin protocol is designed to ensure that if a greater part of processing power, rather than declared identities, trail the protocol, it will be difficult to influence authorized transactions history. With iterated elimination of dominated strategies the proposed model succeeds in setting the right incentives

and requires a diminutive overhead payment which is also Sybil proof.

(Bhattacharjee, S et al, 2015)¹⁴ also stated that Bitcoin currency value is dependent upon the growth of transaction volume and customer acceptability. He also stated that Bitcoin is more algorithmic based and thus free from biasness in any form. It finally frees trade on the Internet from the old systems. Sending money is now as fundamental a part of the Internet as sending a message over email and Bitcoins provides a solution for the easy transferability of money.

3. Research objectives

Our research objectives are:

1. To identify the impact of Bitcoins on different currencies i.e the Dollar, Euro and Russian Rubles.
2. To observe the trends of currency exchange of Bitcoins for different currencies in terms of volume.
3. To find the growing awareness for Bitcoins in major trade zones (dealing in Dollars, Euro and Russian Rubles).
4. To predict the behavior of these currencies against Bitcoins in future.
5. To provide suggestions for adoption of Bitcoins in other parts of the world by analyzing trends in currency trade for Bitcoins.

4. Hypothesis/assumption

Our hypothesis for the current research includes:

- a) Null Hypothesis (H0a): In currency trade, trading of currency for Bitcoins is positively dependent on the use of Bitcoins as major trading currency.
- b) Alternate Hypothesis (H1a): In currency trade, trading of currency for Bitcoins is not dependent on the use of Bitcoins as major trading currency.
- c) Null Hypothesis (H0b): In currency trade, residuals or errors decrease with increase in time period or number of transactions in quarter periods. (Inversely related).
- d) Alternate Hypothesis (H1b): In currency trade, residuals or errors increase with increase in time period or number of transactions in quarter periods.
- e) Alternate Hypothesis (H2b): In currency trade, residuals or errors becomes constant with increase

in time period or number of transactions in quarter periods.

5. Research methodology

The numerical research was conducted through collection of relevant samples from secondary source available in internet (quandl.com) for Bitcoins. We have also used some literature based surveys by visiting relevant websites available freely over the internet for collecting materials in support of conducted research.

6. Data collection

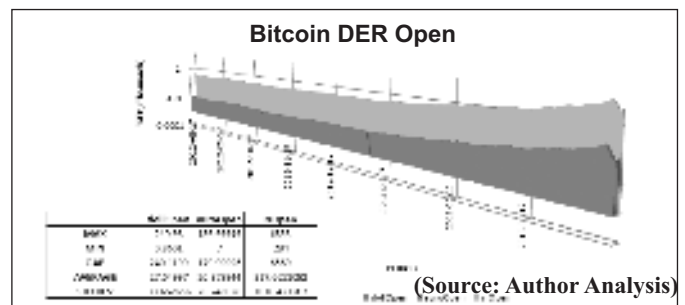
The data used for analysis was collected from free source quandl.com (Source: <https://www.quandl.com/collections/markets/Bitcoin>). We have also used Excel macro-add in from quandl.com to retrieve data directly in excel format. Data was consolidated for comparison using Ms-excel and functions of excel which ultimately bogged down data to the common period [(2012-08-17 (August 2012) to 2013-04-13 (April 2013)] i.e 229 days since three currencies Dollar, Euro and Russian Rubles had different periods of data availability.

Some secondary sources were also used for understanding the basics related to Bitcoins and currency exchange of Bitcoins.

7. Data analysis

7.1.1. Trade opening

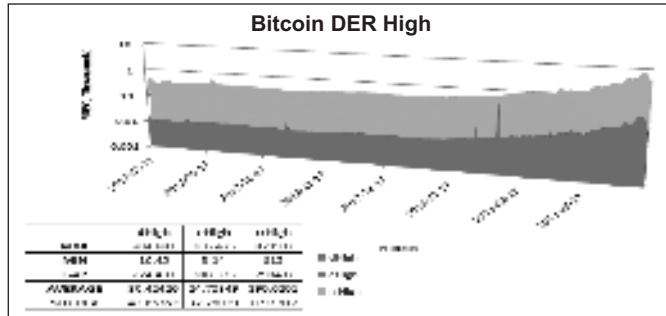
Figure 1. Dollar, Euro and Rubles trade opening



As seen in the figure 1, The Bitcoins trade opened in different patterns for three currencies i.e Dollar open (Min: 0.8601, Max: 248.98), EuroOpen (Min: 7, Max:186.99), Russian Rubles (Min: 284, Max:6853) during the given period of 229 days. On average the Bitcoin stocks for Dollar opened at 27.04, for Euro opened at 20.97, and for Russian Rubles at 817.665. Therefore, it is evident that there is more trading of Russian Rubles, followed by Dollar, and then closely followed by Euro.

7.1.2. Trade high

Figure 2. Dollar, Euro and Rubles trade High per day

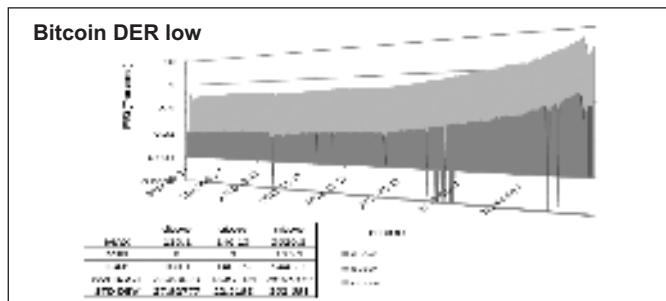


(Source: Author Analysis)

As seen in the figure 2, The Bitcoins trade touched peaks in different patterns for three currencies i.e Dollar high (Min: 10.45, Max: 284.88), EuroHigh (Min:8.14 ,Max:316.47), Russian Rubles High (Min: 315, Max:8299.8) during the given period of 229 days. On average the Bitcoin stocks for Dollar peaked at 30.424, for Euro peaked at 24.70, and for Russian Rubles at 890.62. Therefore, it is evident more Russian Rubles were involved, followed by Dollar, and then closely followed by Euro.

7.1.3. Trade low

Figure 3. Dollar, Euro and Rubles trade opening low per day

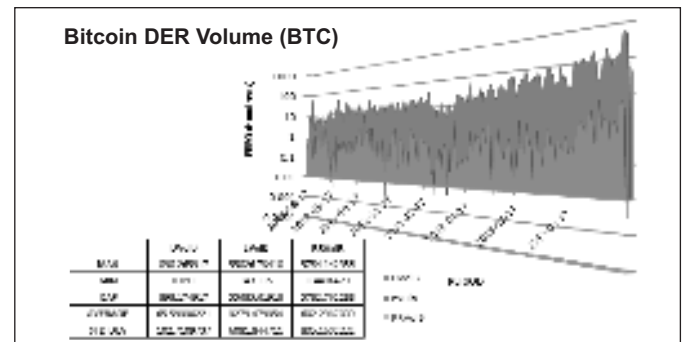


(Source: Author Analysis)

As seen in the figure 3, The Bitcoins trade touched down in different patterns for three currencies i.e Dollar low (Min: 0, Max: 180.01), EuroLow (Min:0, Max:146.15), Russian Rubles low (Min: 175.1, Max:5620.3) during the given period of 229 days. On average the Bitcoin stocks for Dollar lowered at 23.83 for Euro lowered at 18.67 and for Russian Rubles at 759.69. Therefore, it is evident that Russian Rubles never touched 0, although the other two currencies Dollar and Euro touched it many times. Therefore, Bitcoins gained more support from traders in terms of Rubles.

7.1.4. Trade volume (Bitcoins)

Figure 4. Dollar, Euro and Rubles based Bitcoin volumes

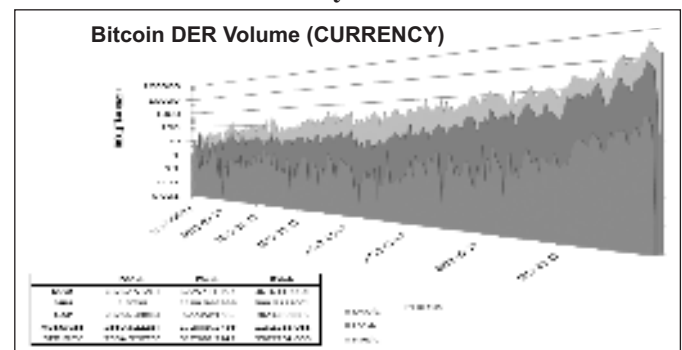


(Source: Author Analysis)

As seen in figure 4, we can observe the trade volumes or frequency of Bitcoins used for the three currencies i.e. the Dollar, Euro, and Russian Rubles. For Dollars, the numbers of minimum Bitcoins traded were 0.091 and maximum number of Bitcoins traded was 898.26 approx. Similarly, we can see for Euro, minimum Bitcoins traded were 143.115, and maximum Bitcoins involved were 55826.734. This again for Russian Rubles, was found to be at 5784.142 (maximum Bitcoins) and 1.440 (minimum Bitcoins) traded. In terms of average, *Euro (3279.479) showed promising signs holding up more Bitcoins than the other two currencies* (Dollar average of 65.59 and Rubles average 602.29). This means that once transactions for Bitcoins in Euro starts, it tends to trade up more Bitcoins than the other two currencies.

7.1.5. Trade Volume (currency traded with)

Figure 5. Dollar, Euro and Rubles based currency volumes



(Source: Author Analysis)

In the above figure 5, the graph reveals the Dollar, Euro and Russian Rubles volumes involved in the trading of

Bitcoins. On one hand, Dollar volumes were maximum at 73767.51 and minimum at 1.0738, Euro currency involved around maximum of 6275711 and minimum of 1189.544 (almost 87 times more (max) than Dollars). The Rubles currency volumes were at maximum of 3,61,61,120.01 (490.20 times of Dollar and 5.76 times more of Euro) and minimum of 599.51. This shows Euro catching up steadfastly with Rubles during this period of analysis.

7.1.6. Volatility testing of bitcoin using garch (1,1) and garch(1,2)

One of the most important issues before applying the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) methodology is to first examine the residuals for evidence of heteroscedasticity. In this model, the conditional variance is represented as a linear function of its own lags. The simplest model specification is the GARCH (1,1) model

- (1) Mean equation $r_t = \mu + \varepsilon_t$
- (2) Variance equation $\sigma_t^2 = \omega + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 \sigma_{t-1}^2$

where $\omega > 0$ and $\alpha_1 \geq 0$ and $\beta_1 \geq 0$, and.

- r_t = return of the asset at time t.
- μ = average return.
- ε_t = residual returns, defined as:

The general specification of GARCH is, GARCH (p, q) is as:

$$\sigma_t^2 = \omega + \sum_{j=1}^q \alpha_j \varepsilon_{t-j}^2 + \sum_{i=1}^p \beta_i \sigma_{t-i}^2$$

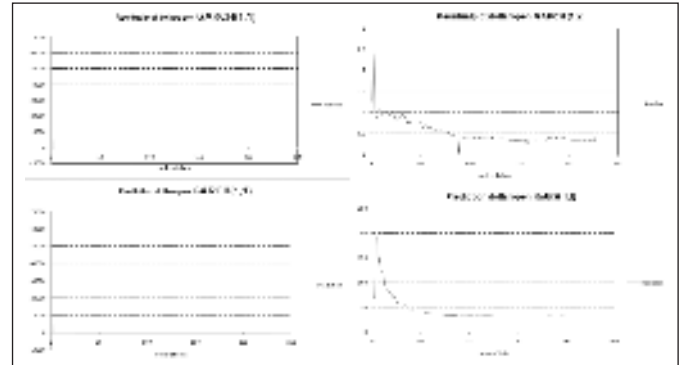
when, p is the number of lagged σ^2 terms and q is the number of lagged ε^2 terms.

In our analysis, we have used the residual returns of the GARCH model GARCH (1,1) and GARCH(1, 2) to identify the pattern of log returns (y-axis) or errors with order of time data (x-axis). This has been done for all the three exchange currencies for BITCOIN i.e. Dollars, Euros and Russian Rubles during the period of 2012-08-17 (August 2012) to 2013-04-13 (April 2013) i.e 8 months or 2 quarters (oct- dec 2012) & (jan-march

2013) and one month preceding (sept 2012) and post of this quarter (April 2013).

7.1.7. Dollar comparison

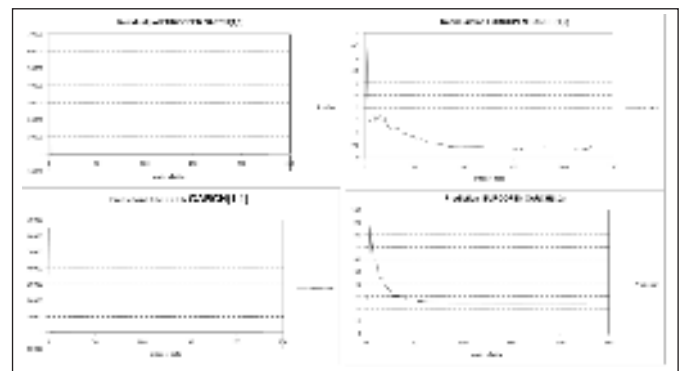
Figure 6. Residual and production plot for Dollar



(Source: Author Analysis)

7.1.8. Euro comparison

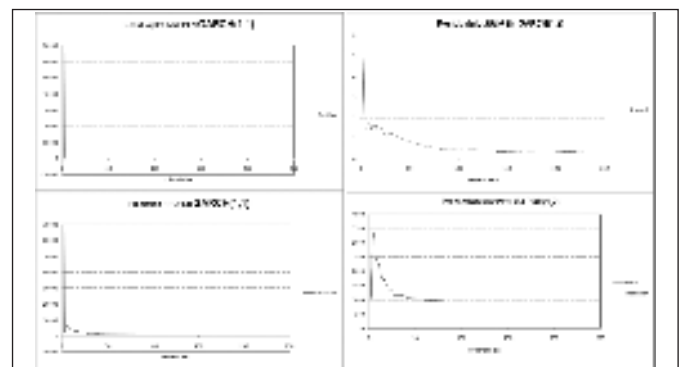
Figure 7. Residual and production plot for Euro



(Source: Author Analysis)

7.1.9. Rubles comparison

Figure 8. Residual and production plot for Rubles



(Source: Author Analysis)

7.1.10. Inferences

From the above figures 6 and 7 we can see that Garch (1,1) for Dollar, Euros, Rubles all have log returns which are almost flat- horizontal, which means that errors or residual returns are very less and becomes linear constant once the number of transactions increases for all these three currencies in exchange of Bitcoin over a period of time. Also, it is evident from tables 1, 3, 5 that the values of alpha (unconditional) and beta (conditional) together is close to 1. [(Dollar(alpha+beta) =1.048202001, Euro (alpha+beta) = 1.048196155, Russian Rubles (alpha+beta)=1.048183626.]

Also, when we use Garch(1,2), we have little skewness in the log returns which tends to have constant variation. On the other hand, we can see from table 2,4,6 that values of alpha (unconditional) and beta (conditional) together is close to 1.

(Dollar (alpha+beta)=0.798203783, Euro (alpha+beta)= 0.261678713, Russian Rubles(alpha+beta)= 0.25582448.]

Plotting prediction values for Garch (1,1) for Dollar, Euros, Rubles also shows almost equivalent results with trend becoming more linear and constant with time. In a likely manner, for Garch (1, 2), prediction values also tends to become linear with time period.

8. Research findings

From the current research, the following findings can be listed:

1. There is more trading of Russian Rubles, followed by Dollar, and then closely followed by Euro.
2. Russian Rubles never touched zero mark (0), although the other two currencies Dollar and Euro touched it many times.
3. Bitcoins gained more support from traders in terms of Rubles. Bitcoins and Rubles as pair trading have been seen as more prominent during this period of analysis.
4. In case of Euros, once transactions for Bitcoins in Euro starts, it tends to trade up more Bitcoins than the other two currencies.
5. Euro Volumes also catch up steadfastly with Rubles during this period of analysis.

9. Conclusion

Therefore, from the above findings, it is clear that i) Null Hypothesis (H_{0a}): In currency trade, trading of currency for Bitcoins is positively dependent on the use of Bitcoins as major trading currency is true and its alternate hypothesis (H_{1a}) stands as false. Also another hypothesis ii) Alternate Hypothesis (H_{2b}): In currency trade, residuals or errors becomes constant with increase in time period or number of transactions in quarter periods, also stands as positive or true and its null hypothesis (H_{0b}) and other alternate hypothesis (H_{1b}) stands as false. Bitcoins prove to be a major currency during this period and opens new alternatives for those in traditional currency markets.

10. Suggestions & recommendations

Some suggestions for

a. Traders

- Traders can now use more Bitcoins, which is less risky than other modes of currency.
- A long term use of Bitcoins can serve the purpose of both large traders, medium traders and small traders since considerable wealth can be generated by use of Bitcoins.

b. Markets

- Markets using Bitcoins can become more stable and profit and loss fluctuations could be reduced in a long term.
- The algorithmic nature of Bitcoins will create larger opportunities for those interested in honest trade.

c. Society

- More social benefits can be attained if profits or trade benefits could be put use for social work. This requires a more equitable algorithmic trade which is served by Bitcoins.

d. Economic Development

- Bitcoins may just change the way people trade in modern world. It could prove to be a boon for the economy, specially under developed and developing countries where equitable share or distribution of economic investments may be required. There can be more foreign investments without much volatility.

- The more the number of transactions there are in Bitcoin based economy, the more number of entrepreneurs can think of hedging their exposure to foreign exchange volatility by accepting payments from other parties and paying suppliers or employees in the same currency. Therefore, it shall ensure ease of tackling minimizing number of currencies in global trade.
- Bitcoin based wage payments can strengthen the demand for goods and services that can be bought with Bitcoins. The greater the ability one has to buy and sell what one needs exclusively within Bitcoin (Bitcoin based economy), the less foreign-exchange volatility matters.

References

1. Babaioff, M., Dobzinski, S., Oren, S., & Zohar, A. (June 2012). On Bitcoin and red balloons. Proceedings of the 13th ACM Conference on Electronic Commerce(EC'12) (pp.1-18). NY: ACM.
2. Barber, S., Boyen, X., Shi, E., Uzun, E. (2012). Bitter to better - how to make Bitcoin a better currency (pp. 399 - 414). Financial Cryptography and Data Security. 16th International Conference on Financial Cryptography and Data Security 2012, February 27 - March 2, Kralendijk, Bonaire. DOI : 10.1007/978-3-642-32946-3_29
3. Bhattacharjee S., Kaur H. (2015). An overview of alternative currency : the Bitcoin. Indian Journal of Finance, 51-60.
4. Castillo, J. B. (n.d.). Brito, J., & Castillo, A. (2013). Bitcoin: A primer for policymakers (pp. 1-10). Arlington, VA : Mercatus Center, George Mason University.
5. Currency Trading, <http://www.investopedia.com/financial-edge/0412/the-basics-of-currency-trading.aspx>.
6. Elwell, C. K., Murphy, M.M., & Seitzinger, M.V. (2015, January 23). CRS: Bitcoin: Questions, answers, and analysis of legal issues (CRS Report 7-5700). Congressional Research Service. Retrieved from <https://fas.org/sgp/crs/misc/R43339.pdf>
7. Grinberg, R. (2011). Bitcoin: An innovative alternative digital currency. Hastings Science & Technology Law Journal, 4(1), 159 - 208.
8. Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system. Retrieved from <https://Bitcoin.org/Bitcoin.pdf>
9. Pips and Pairs, <http://fxtrade.oanda.com/learn/intro-to-currency-trading/conventions/pips>.
10. Sablik, T. (2013, December 16). Digital Currency : New private currencies like Bitcoin offer potential - and puzzles. Econ Focus, Third Quarter, 18 - 27.
11. Shamir, D. R. (2013). Quantitative analysis of the full Bitcoin transaction graph. Proceedings of the 17th International Conference on Financial Cryptography and Data Security in Okinawa (pp. 6-24). Okinawa, Japan: Springer-Verlag.
12. The United States Attorney's Office, S. D., & forfeitur, c. a. (n.d.). The United States Attorney's Office, Southern District of New York. (2014, January 16). Manhattan U.S. attorney announces forfeiture of \$28 million worth of Bitcoins belonging to Silk Road : Largest Ever forfeiture of Bitcoins; court also orders forfeiture of the Silk Road hidden website [Press release]. Retrieved from <http://www.justice.gov/usao-sdny/pr/manhattan-us-attorney-announces-forfeiture-28-million-worth-Bitcoins-belonging-silk>
13. Yermack, D. (2013). Is Bitcoin a real currency? Retrieved from <http://papers.ssrn.com/sol3/papers.cfm?abstractid=2361599>

Ants think winter all summer

Remember the old story of the ant and the grasshopper? In the middle of summer, the ant was busy gathering food for the winter ahead - while the grasshopper was out having a good time. Ants know that summer - the good times - won't last forever. Winters will come. That's a good lesson to remember. When the going is good, don't be so arrogant as to believe that a crisis or a setback cannot happen to you. Be good to other people. Save for a rainy day. Look ahead. And remember, good times may not last, but good people do.

Ants think summer all winter

As they suffer through the unbearable cold of the winter, ants keep reminding themselves that it won't last forever, and that summer will soon be here. And with the first rays of the summer sun, the ants come out - ready to work, ready to play. When we are down and seemingly out, when we go through what looks like a never-ending crisis, it's good to remind ourselves that this too shall pass. Good times will come. It's important to retain a positive attitude, an attitude that says things will get better. As the old saying goes, tough times don't last. Tough people do.

7.1.11. APPENDIX

TABLE 1 GARCH(1,1) estimation of Dollar open

Method: ML - BFGS with analytical gradient date: 07-26-15 time: 18:35 Included observations: 228 Convergence achieved after 21 iterations				
	Coefficient	Std. Error	z-Statistic	Prob.
omega	1015.333235	1604.061802	0.632976381	0.526749
alpha_1	1.33369E-05	1.434244701	9.29893E-06	0.999993
beta_1	1.048188664	1.094339094	0.957828035	0.338149
alpha,beta	1.048202001			
Log Likelihood	-1085.856817			
Jarque Bera	1889.772499		Prob	0
Ljung-Box	65535		Prob	65535

TABLE 2 GARCH(1,2) estimation of Dollar open

Method: ML - BFGS with analytical gradient date: 07-26-15 time: 18:39 Included observations: 228 Convergence achieved after 24 iterations				
	Coefficient	Std. Error	z-Statistic	Prob.
Omega	958.9258253	9648.799292	0.099382918	0.920834245
alpha_1	0.354534699	10.25834208	0.034560624	0.972430101
alpha_2	7.68688E-05	10.01577919	7.67477E-06	0.999993876
beta_1	0.443592215	2.433137884	0.182312814	0.855337243
alpha_1,alpha_2 & beta1	0.798203783			
Log Likelihood	-1072.587902			
Jarque Bera	1889.772499		Prob	0
Ljung-Box	120.1778856		Prob	0

TABLE 3 GARCH(1, 1) estimation of Euro open

Method: ML - BFGS with analytical gradient date: 07-27-15 time: 10:56 Included observations: 228 Convergence achieved after 21 iterations				
	Coefficient	Std. Error	z-Statistic	Prob.
omega	608.2716294	1014.7221	0.599446518	0.548875165
alpha_1	2.9138E-05	1.527564846	1.90748E-05	0.999984781
beta_1	1.048167017	1.203580812	0.870873818	0.383823054
alpha_1 & beta1	1.048196155			
Log Likelihood	-1026.973408			
Jarque Bera	1853.888448		Prob	0
Ljung-Box	65535		Prob	65535

TABLE 4 GARCH(1,2) estimation of Euro open

Method: ML - BFGS with analytical gradient date: 07-27-15 time: 13:34 Included observations: 228 Convergence achieved after 28 iterations				
	Coefficient	Std. Error	Statistic	Prob.
omega	574.4787702	1715.053905	0.334963	0.737653363
alpha_1	0.119535733	0.991233834	0.120593	0.904013516
alpha_2	9.77443E-05	2.979330965	3.28E-05	0.999973823
beta_1	0.142045235	0.191299953	0.742526	0.457768557
alpha_1,alpha_2 & beta1	0.261678713			
Log Likelihood	-1014.996903			
Jarque Bera	1853.888448		Prob	0
Ljung-Box	112.7478837		Prob	0

TABLE 5 GARCH (1, 1) estimation of Rubles open

Method: ML - BFGS with analytical gradient date: 07-27-15 time: 10:58 Included observations: 228 Convergence achieved after 21 iterations				
	Coefficient	Std. Error	z-Statistic	Prob.
omega	907437.1464	1421567.517	0.638335595	0.523255246
alpha_1	0.000114575	1.41230667	8.11264E-05	0.999935271
beta_1	1.048069051	1.077136274	0.973014349	0.330546171
alpha_1 & beta1	1.048183626			
Log Likelihood	-1857.174888			
Jarque Bera	1772.639372		Prob	0
Ljung-Box	65535		Prob	65535

TABLE 6 GARCH(1,2) estimation of Rubles open.

Method: ML - BFGS with analytical gradient date: 07-27-15 time: 11:48 Included observations: 228 Convergence achieved after 30 iterations				
	Coefficient	Std. Error	z-Statistic	Prob.
omega	857023.9716	2677093.417	0.320132262	0.748868
alpha_1	0.119808303	1.015593396	0.117968769	0.906092
alpha_2	0.00021751	3.116689087	6.97889E-05	0.999944
beta_1	0.135798667	0.203659958	0.666791195	0.504906
alpha_1,alpha_2 & beta1	0.25582448			
Log Likelihood	-1839.661058			
Jarque Bera	1772.639372		Prob	0
Ljung-Box	65.05476692		Prob	7.77E-16

Ants always act unitedly 

This brings back the story of the King cobra and the ants. Once there lived a king cobra in a small hole. When he was small he ate little creatures. As he grew up he began to eat eggs, lizards, frogs and rabbits. And when he grew up further he started to eat even other smaller snakes. His pride grew within him. All small animals began to fear the King cobra. This boosted up his pride. He began to think "Now I am the most powerful creature. I am the king of the forest. All animals fear me. Let me move from this small hole to a bigger place". He searched for a place to suit his size and status. Finally he came across a big tree. He selected the tree for his house. He saw an ant hill near the tree. He thought "Why should there be an ugly ant hill near my royal house?" He hissed aloud "I am King cobra, the king of the forest. I order the ants to vacate immediately". There was no reply. He got wild and struck at the ant hill. What a surprise! In a minute, thousands of ants swarmed up the King cobra biting him everywhere. The cobra writhed in pain, couldn't bear it and ran away.

"E-COMMERCE: ITS PROLIFERATION, PERFORMANCE & PATRONAGE FROM MAKE-IN-INDIA"

Akinchan Buddhodev Sinha

ABSTRACT

Over the past two decades, growing internet and mobile phone penetration has completely changed our ways of communication and doing business. E-commerce though gaining steam still appears to be a novel concept. Currently, it is heavily banking upon the internet and mobile phone revolution to fundamentally alter the way businesses access their customers. While in countries like US and China, E-commerce has taken important strides, in India it is still in its nascent stage. However, the scenario is changing. According to a report by Ernst & Young, titled, "*Re-birth of E-Commerce in India*" India is at the cusp of a digital revolution. Internet has become an integral component of the growing urban population. Such a statement exhibits E-commerce potential to fly high in the firmament of Indian business.

Declining of broadband subscription prices, advent of 3G services leading to ever-increasing number of "netizens", convenience of online shopping, and changes in the supporting ecosystem are some of the critical aspects that are playing a pivotal role in providing fillip to the growth of E-commerce and consequently life style changed in India.

In view of rising E-commerce based activities, it generates paramount interest to explore the various facets associated with E-commerce.

Key words - *Growth of E-commerce in India; Make in India, Financial Performance of Online Companies.*

Preamble

Growth of E-commerce in India

Recent years have witnessed a remarkable metamorphosis in the way India shops and trades. E-commerce has taken the world of retail by storm and beguiled the imagination of an entire generation of entrepreneurs, with E-commerce ventures with various business and commercial models. The explosive growth in the previous few years has already catapulted the goliaths among these ventures past the billion-dollar territory. By 2013 the sector grew to the extent of

12.6 billion USD. Industry studies by IAMAI reveal that online travel dominates the E-commerce industry with an estimated 70% of the market share. However, e-retail in both its forms; online retail and market place, has become the rapidly growing segment, increasing its share from 10% in 2009 to almost 18% in 2013. Calculations based on industry parameters indicate that the number of parcel check-outs in E-commerce portals surpassed 100 million in 2013. However, this share represents a miniscule portion (less than 1%) of India's total retail market, but is poised for continued growth in the years ahead. If this strong growth continues over the next few years, the size of the retail industry is poised to be 10 to 20 billion USD by 2017-2020. This growth is expected to be led by enhanced consumer-led purchases in durables and electronics, apparels and accessories, besides traditional products like, books and audio-visuals.

Now, the robust emergence of E-commerce will exert a huge pressure on the supporting logistics functions. E-commerce offers customers with an infinite variety of choices spread over an enormous geographical area. Companies cannot compete merely based on sheer volumes in today's ever-evolving, information symmetric and globalized world of E-commerce. Instead, the domain of competition has moved to delivering to ever-shortening delivery timelines, both consistently and predictively.

No doubt, the E-commerce penetration in India can still said to be in nascent stage as compared to other markets such as China, USA and UK, but is rising at an astounding pace with an increasing number of new players. Today, India has thousands of retailers in the online world, including big or small, selling a wide assortment of products or services.

Many new businesses are stoking India's newfound B2B online shopping hype. BazarA2Z, StoreRoom.in and industrybuying.com are just some of the emerging players in the market, which has already witnessed substantial attention from Walmart through its BestPrice.in, as well as IndiaMart.

Rahul Gupta the co-founder of Industrybuying.com, in an interview to Economic Times of India, said that *“Industry products in India are not catalogued in one place and are very fragmented. So building all this information on one internet platform would be of huge value.”*

Now, on their trajectory of expansion, E-commerce players in India are eyeing for mergers and acquisitions in order to expand their businesses. They are striving hard to improve their cash-intensive sector by conglomerating with the apposite technology and capability.

OBJECTIVES OF THE STUDY

- 1) To understand the overall scenario of E-commerce in India.
- 2) To comprehend the performance of online companies in India by using various financial variables, like Total Income, Profits after Tax, Net Sales and Total Expenses.
- 3) To understand the hurdles being faced by E-commerce industry in India
- 4) To know the positive impact of Make in India on E-commerce industry.

Note: The names of companies considered for the study i.e. A Ltd., B Ltd and C Ltd. are pseudo names of real companies but the figures referred to or used for the analysis are real.

Research Methodology

- 1) Karl Pearson's Coefficient of Correlation: The mentioned statistical tool is used to gauge the coefficient of correlation between total income and profits after tax of three online companies, i.e. A Ltd., B Ltd. and C Ltd. This measure will assist us in ascertaining whether there exists strong or weak correlation between the mentioned variables.
- 2) Coefficient of Determination: This statistical tool helps in explaining the process of variation in the dependent variable, which is explained by a change in the independent variable. The independent and dependent variables considered for the study are: Total Income and Profits after Tax respectively.
- 3) Probability Error: This statistical tool is used for interpreting the coefficient of correlation r , whether it is significant or not. In this study, it will assist in interpreting whether the coefficient of correlation between total income and profits after tax is significant or insignificant.

- 4) Multiple Regression Analysis: This statistical tool is being used in the study to ascertain the forecasted profits after tax of the three online companies, i.e. A Ltd., B Ltd. and C Ltd. from the period 2016 to 2020. The regression equation used for the study is X_1 on X_2 and X_3 , wherein, X_1 is the dependent variable, i.e. Profit after tax and X_2 and X_3 being independent variables, i.e. Net sales and Total expenses respectively.

Limitations of the study

Due to non-availability of requisite financial information and other technical constraints only three companies functioning in E-commerce industry, i.e. A Ltd., B Ltd. and C Ltd. have been studied. The non-availability of data is due to either most of the online companies are unlisted or private limited organizations.

E-commerce

E-commerce processes are conducted using applications, like, email, online catalogues and shopping carts, electronic data interchange (EDI), web services and e-newsletters to subscribers. Two of the most famous formats of E-commerce have been e-travel and e-tail. The latter specifically refers to selling goods on the internet to retail consumers (B2C category). According to Forrester Research, an independent technology and market research firm, merely 16% of India's total populace was online in 2013 and of the online users a meagre 14% or 28 million were online buyers. But in near future, this percentage will definitely move up, as a large number of companies in the E-commerce space have embraced various innovative ideas and operating models including partnering with online market places or establishing their own online stores. Some significant operating models include the following:

- a) Marketplace Model
- b) Self-Owned Inventory Model
- c) Private label
- d) White label

The mostly used model in India is Marketplace Model. This is being followed by the three important players in E-commerce: Flipkart, Amazon and Snapdeal. In this model, the sellers often partner with leading marketplaces to set up a dedicated online store on a common aggregator website. The sellers play a significant role of managing inventory and driving sales. They leverage on high traffic on the marketplaces website and access their distribution network. However, due to the presence of cutthroat competition

among platforms, the sellers have to face the brunt of competitive pricing. Also, the customer experience needs to be of the highest standards, to adhere to the norms set by the E-commerce platforms. This adds to the pressure on the sellers to perform.

One of the key canons of marketplace based approach has been the discount based strategy to push up turnover. E-commerce websites generally use heavy discounts and cash back to foster sales and customer loyalty. This is evident from “Big Billion Day” sale by Flipkart and “The Great Indian Summer” sale by Amazon.in and 60-70% cashback offers that are a testament to the extent to which major players in the industry are willing to go for discuss the various matters that emerge due to the discount based model and how can major E-commerce companies use different strategies to mitigate these concerns.

Discount Based Strategy

In the E-commerce space, pricing has arisen as the biggest differentiator driving consumers to shop online. Discount based strategy is the foundation of E-commerce. Consequently, the customers are used to discounts throughout the year. This is to such a magnitude that the complete purchasing decision process revolves around quantum of discounts provided by E-commerce platforms. Customers now browse through the various platforms (both online and offline) and then buy from the platform which provides the highest discount, or effectively the lowest price. So, the outcome is that major E-commerce platforms are at perpetual wars, trying to entice customers with as high a discount as possible. For instance, in some products, the quantum of discounts ranges from 75-80% of the marked price. While this approach have assisted in steaming sales (Flipkart expected to surpass USD 8 Billion and Amazon expected to cross USD 1 Billion in GMV March 2016), there is a continuous loss of profitability and dependence on equity infusion from promoters and venture capitalists to fund the discounts (please refer exhibit 1).

It is important to note that E-commerce market in India has started to become crowded and complex with numerous firms jostling for a sizeable share of customers mind and wallet. As the competition in the E-commerce catches steam, the companies are embracing multiple business approaches in order to entice customer attention including:

- a) Inventory model e.g. Shopper Stop, Croma
- b) Social networking e.g. TripAdvisor

- c) Aggregator model e.g. Ola Cabs
- d) e-Marketplace e.g. Flipkart, Snapdeal
- e) Transaction broker e.g. IRCTC
- f) Click and collect service e.g. Amazon

To breathe and sustain operations in the competitive market, companies are also taking advantage of one or more revenue generation models including:

- a) Advertising revenue model e.g. Yahoo.com
- b) Subscription revenue model e.g. Flintobox
- c) Transaction fee model e.g. eBay
- d) Sales revenue model e.g. Amazon
- e) Affiliate revenue model e.g. CouponDunia

As stated, that higher proclivity towards internet and smartphones have acted as a game changer for E-commerce firms, it is important to have a quick look at the technologies these companies are using to enhance their market penetration.

Cloud: Majority of the E-retailers are banking upon cloud technology for its flexibility, scalability, availability, mobility, and efficiency. Cloud communications can go a long way in helping E-commerce companies in ensuring personalized consumer engagement throughout the purchase cycle and also in executing effective and near real-time marketing campaigns.

Mobile applications: More than 235 million people in India use internet through mobile devices. This is the basic reason for E-retailers to concentrate their endeavours on mobile app penetration across the country. The mobile applications are helping to reach more customers situated even in remote and rural areas. E-commerce companies have been able to bridge the service gap substantially by sending service updates and other communication via their mobile app, e-mail and SMS. The revenue generation from the mobile app is on the rise e.g. 50% for Flipkart while 70% for Quikr. Customers can get alerts, see product catalogues, purchase and pay with a simple mobile application offering a compelling user experience. Also, from mobile usage, the E-retailers receive valuable customer information which can be utilized for analytics to improve their sales and services.

Make in India - The Kindler for E-Commerce

NDA-II's 'Make in India's campaign is among the most ambitious programs by any Indian government to foster local manufacturing and lure foreign capital. The

initiative seeks to converge and integrate it with 'Digital India' in order to construct engines of growth for the economy. Promoting skill development and entrepreneurship across different sectors, the move aims to build India as a manufacturing and export hub. Presently, manufacturing in India accounts for approximately 16 percent of GDP, which is relatively low compared to more than 20 percent in other emerging economies, such as, Brazil, China, Indonesia and Malaysia. While technology, product development and skilled labour are the backbone for the 'Make in India' initiative, ancillary businesses like logistics, packaging vendor and inventory management, as well as fulfilment solutions, need to be evolved in order to stimulate growth.

In this regard, E-commerce can assist in triggering this growth. Business-to-Consumer (B2C) E-commerce can be one of the significant enablers for the Make in India initiative. Manufacturers based out in Tier-2 and Tier-3 cities can utilize the distribution and supply chain of E-commerce companies to access both domestic and foreign markets. Though, several SMEs (small and medium enterprises) or sellers are increasingly using online marketing and selling, there are many who would only like to concentrate on manufacturing, their core strength. B2C E-commerce, particularly inventory-led will assist them to do so, negating the need to spend money on marketing and distribution.

Continuing with the discussion on SMEs as talking about Make in India is irrelevant if there is no mention of SMEs as they contribute prodigiously to the GDP of India. It accounted for more than 17 percent of GDP in 2014 while contributing to 45 percent of the nation's industrial production and 40 percent of total exports. The SMEs in India add over 1.3 million jobs new year. Now a crucial sector of our economy can stand immensely benefited if it espouses E-commerce.

Internet has emerged as a game changer for businesses across the globe during the last decade. SMEs in India have traditionally been dependent upon domestic trade but with rising access to internet technologies they have started to explore the opportunity to trade globally.

Now at a time when the nation is laying huge emphasis on Make in India, SMEs by embracing E-commerce can play a pivotal role in adding steam to their business both in domestic and international markets. In this regard, it is heartening to note that while 100 percent of India's high web SMEs has E-commerce presence, 75 percent of the low-web SMEs also embraced E-commerce. As the E-commerce ecosystem develops

and cross border trade improves, the online exports shall also increase for SMEs that leverage internet technology for growth and sustenance.

While conventional SMEs have focussed on their core operations without trying much with new and advanced technologies, E-commerce has assisted technology enabled SMEs to challenge the status quo and grow substantially over the last few years. While 98 percent of technology enabled SMEs in India participate in country's share of export revenues, merely 11 percent of the traditional SMEs export goods and services.

One of the basic reasons for the difference in contribution to export by online vis-a-vis offline SMEs is that E-commerce surpass geographic boundaries and levels the playing by enabling visibility and trade across buyers and sellers who are situated in distant geographies. Further, online transactions enabled by renowned E-commerce organizations also assuage any fears rooted in perceived trust deficit.

The stage is all set for India's fledgling \$3.2 billion E-commerce industry to scale astral heights, as its higher involvement with SMEs to sell their products online, hopes to rope in more players. As part of this initiative, E-commerce major Flipkart has inked an agreement with the Textile Ministry to provide weavers a marketplace to showcase their products. For manufacturers, analytical data will be provided to assist them acquire a customer base, and accordingly scale up supply. Generally, small entrepreneurs tend to contribute more than 20 percent of total sales for online companies like Fabfurnish.com and Paytm.

Many online companies have begun associating with Make in India initiative and consequently utilizing their technology and platforms to support local manufacturers and craftsmen. Online marketplace ShopClues.com has also started a campaign wherein it will showcase merchandize from India's iconic markets, like the ethnic weaves of Surat, silver jewellery from Jaipur, electronic goods from Nehru Place in Delhi, textiles from Tirupur and *chikankari* from Lucknow across various states.

The company has more than 5600 brands and over 75000 merchants listed on its site, of which 4600 are regional and local brands. Fashion portal Fashion and You claims that it is flawlessly connecting small retailers with customers. The company is also working towards helping small manufacturers to access to wide customer base, with no investment. Meanwhile, few companies like Printvenue.in and Bluepage.com are riding high by selling 'Make in India' merchandise.

Thus, E-commerce is going to be a great beneficiary from 'Make-in-India' campaign in the near future. As discussed that it has provided with immense business opportunities for E-commerce sector and by providing berth to the concept of One Person Company in Indian Companies Act, 2013, we may witness more online companies in the E-commerce space, thereby providing fillip to the growth of E-commerce industry.

Data Analysis and Findings

From the statistical tools, i.e. Karl Pearson's Coefficient of Correlation, Coefficient of Determination, Probability Error, Parabolic trend equation and Multiple Regression analysis on financial data of three important companies engaged in online business, the following conclusions can be drawn:

If we take the case of A Ltd. and B Ltd., there exists a positive and strong correlation between their total income and profit after tax with r values of 0.99 and 0.98 respectively. Further, higher coefficient of determination values of A Ltd. and B Ltd., $r^2=0.9801$ and 0.96 respectively, establishes the fact that total income do play a pivotal role in enhancing the profits after tax of these two companies. Hence, these two corporate houses should strive to enhance their total incomes. On the contrary, it can be observed that there exists a weak correlation between total income and profit after tax for C Ltd., meaning thereby that income generated from non-core operations plays a crucial role in its profits, which is also observed from low value of coefficient of determination ($r^2=0.32$).

When it comes to probability error, for A Ltd. and B Ltd. it is significant, as $r > 6 \times P.E.$, whereas it is insignificant for C Ltd., since $r < 6 \times P.E.$

Now coming to the future or projected net sales of these three companies, all the three companies are registering sales growth as can be observed from the forecasted net sales data, A Ltd. net sales are climbing from INR 1153 crore to INR 3139 crore in 2020; in case of B Ltd., the net sales are moving northwards from INR 715 crore in 2016 to INR 1259 in 2020 and for C Ltd., the net sales are increasing from INR 553 crore in 2016 to INR 1337 crore in 2020. But the matter of concern may be rising total expenses for A Ltd. and B Ltd., as evident from their forecasted expenses. So they have to increase the magnitude of efficiency for keeping various overheads and costs under control.

Finally, the forecasted profit after tax of the three companies. As far as B Ltd. and C Ltd., then it is quite satisfactory but the scenario appears to be grim for A

Ltd., whose forecasted net profits after tax is entering negative territory. As can be seen from the calculations done using multiple regression analysis, the projected profits after tax is INR (-) 1111 Cr. in 2016 which goes up to (-) 3751 Cr. in 2020. By espousing better marketing techniques and attaining efficiency in its operations, it can transform the negative profits into positive.

Therefore, on the basis of the data analysis of these three online companies, it can be said that online business do have a future as proved by positive figures of profits after tax of B Ltd. and C Ltd. Further, the net sales of all the three companies are following a growth trajectory which should provide solace to the management of these companies and a ray of hope for other online companies as well as the entrepreneurs who are planning to start online companies. In nutshell, these companies will survive for long, i.e. they are sustainable if managed properly. So it can be said without an iota of doubt that the growth picture of such companies is not nebulous rather crystal clear.

(Please refer Appendix 1,2&3 for detailed calculations).

Challenges that demand care

Despite growing optimism on E-commerce industry, is still hobbled by basic challenges. In a poll conducted by an advisory firm, e Tailing India, it has been observed that the biggest issue witnessed by e-tailers are cost of customer acquisition, logistics and funding.

A big reason to worry is underdeveloped logistics which is acting as a bottleneck in the development E-commerce in India. Multinational carriers such as DHL and Fed-Ex do operate in India but generally third party services are hired for delivery in smaller cities. Quite often last mile deliveries are made by bicycle. Because of this, some of the large funded firms such as Flipkart have set up their own logistics departments for the delivery of goods ordered online.

Though considered appropriate from buyer's angle, the Cash on Delivery (COD) mode of payment is regarded as a pitfall for E-commerce companies. COD delays the payment to E-commerce company since buyer will pay when he or she will receive the product. It will then go to the courier companies which after 2-3 weeks give payment to the actual seller. In the meantime, the E-commerce companies have to replenish inventory. Also high rate of return is another big issue in this regard. Sometimes addresses are not traced or buyer does not like the product then it has to send back to the company for stocking.

Another biggest hurdle appears to be is the fierce competition that has been spurned by the surfeit of investments over the past few years. There can be as many five various well-funded players battling it out for the same small niche. The situation can be explained with the help of a relevant and quite recent example. The market for baby products, which in the United States is basically owned by *diapers.com*. Three different Indian companies are also in the market and they are having a tough competition among them. The companies are: *Firstcry*, *Hushbabies*, and *Babyoye*, who raised a combined \$30 million as of 2012. But as mentioned, that the companies are in 'Red Ocean', i.e. marked by brutal price war, which has pushed margins to almost nothing on the most basic orders, such as those for diapers and soap. However, despite this, efforts to acquire customers through discounts or adwords or to put simply various marketing measures have result into bleeding of E-commerce companies.

At times, bidding wars can spiral out of control even on the company's own name. The price war between online companies reduces their probability of being sustainable. According to Pearl Uttapam, founder of *Fashionandyou.com*, India's largest fashion E-commerce portal, the problem of competition is compounded by very little brand recognition. Handful companies are successful in building consumer experience based loyalty. In process, the cost of customer acquisition soared, and marketing spends also went high, because everyone was essentially fighting for the same customer. Pearl also opined that part of the focus on acquiring new customers at any cost comes from unreasonable investor pressure. She further states that too much money too early in the game is going to make investors go after metrics which will not be profitable in the long run. In this regard, she referred to practices like focusing on the number of new account sign ups rather than the number of customers who become habitual customers. So the pertinent question is that whether the online companies are after clicks or in creating customer base? Since without customers no business can survive, as they play a pivotal role in improving the top line which in turn improves its bottom line.

The other major challenges that E-commerce industry needs to overcome pertains to security concerns; privacy; payment gateways failure rate, ethical issues and other factors. Taking up the discussion on each of

these elements in brief, it is a fact that internet offers unprecedented ease of access to an eclectic goods and services and from this easy access arise the threat of infringement of privacy. A big worry for the online customers in India is high probability of payment gateways failures while doing an online transaction. At times the payment is charged from the credit card or debit card but the confirmation for the transaction is not there and a customer has to face lot of hassles in recovering the payments. Coming to the ethical issues, the two significant issues are of 'Disintermediation' and 'Dinosaurs'. Disintermediation involves elimination of the intermediaries, such as, retailers, wholesalers, outside sales representatives by setting up a website to sell directly to the customers. A dinosaur is a term that refers to executives and college professors who refuse to recognize that technology has changed our lives.

The other critical factors that may be acting as an impediment for E-commerce industry to gain the requisite velocity are: Low internet penetration; Higher usage of Feature Phones and not Smart Phones; Lack of standardization of postal addresses and presence of overfunded competitors resulting into pushing up of customer acquisition.

Way Forward

Whenever any industry starts gaining foothold or grows at an astounding pace it sometimes create suspicion in the minds of the people, especially, investors, researchers and business analyst as to whether the mushrooming of the industry will result into some financial crisis. The theory applies to E-commerce companies also. The questions are arising regarding their business model, profitability, viability of business and so on and so forth. Some experts have opined that zooming valuations and the astounding pace at which they are raising capital and burning it, have made the eyebrows of several business experts puckered. Even some are raising questions that is the E-commerce sector in India a bubble waiting to burst?

In this regard, it is essential to peruse UBS report titled, "Is India in E-commerce bubble? The report clearly states that investor concerns about E-commerce being a bubble in India are misplaced. According to UBS estimates, the sector will start generating operating profits by 2020. They have analyzed the supply chain of offline retail by category and observed that there is sufficient margin for e-tail in future. The inherent

operating leverage and hefty discount as a percentage of Gross Merchandise Value (GMV) should play a significant role in pushing up the operating profits by 2020.

The report further states that India e-tail market will grow 10 times by 2020 to \$50 billion. This projection has been done based on a study of the following parameters: internet penetration, affordability-income levels, adaptability by various categories and accountability.

As our country enjoys population dividend with substantial portion of the populace below 35 years of age with higher espousal towards technology; rising middle class; multi-fold rise in internet penetration driven by mobile (3G and 4G) and availability of capital to fund the initial growth phase will be major drivers in assisting E-commerce or online companies in gaining and expanding their foothold in India.

Appendix 1

Karl Pearson's Coefficient of Correlation & Coefficient of Determination

Independent Variable- Total Income

Dependent Variable- Profit after Tax

a) A Ltd.

$$\bar{X} = 22056.42/7 = 3150.92$$

$$\bar{Y} = 4342.27/7 = 620.32$$

$$\text{Therefore, Coefficient of Correlation: } r = \frac{\sum dx dy}{\sqrt{\sum dx^2} \sqrt{\sum dy^2}} = \frac{6072238}{\sqrt{24329631} \times \sqrt{1540657}} = \frac{6072238}{6122386.49} = 0.99$$

Coefficient of Determination (r^2) = $(0.99)^2 = 0.9801$. It implies that 0.98 or 98% of the variations in Profit After Tax is explained by variations in Total Income.

Years	Total Income (X)	Profit After Tax (Y)	dx = X-X ⁻	dy = Y-Y ⁻	dx ²	dy ²	dx dy
2008-09	918.14	75.41	-2232.92	-544.91	4985931.726	296926.91	1216740.437
2009-10	1347.63	193.25	-1803.29	-427.07	3251854.824	182388.784	770131.060
2010-11	1876.60	288.25	-1274.32	-332.07	1623891.462	110270.484	423163.442
2011-12	2752.15	505.81	-398.77	-114.51	159017.512	13112.540	45663.153
2012-13	3762.95	684.57	612.03	64.25	374580.721	4128.063	39322.928
2013-14	5012.42	1206.08	1861.5	585.76	3465182.25	343114.778	1090392.24
2014-15	6386.53	1388.90	3235.61	768.58	10469172.07	590715.216	2486825.134
	$\sum X = 2056.42$	$\sum Y = 4342.27$			$\sum dx^2 = 24329631$	$\sum dy^2 = 1540657$	$\sum dx dy = 6072238$

b) B Ltd.

Years	Total Income (X)	Profit After Tax (Y)	dx = X-X ⁻	dy = Y-Y ⁻	dx ²	dy ²	dx dy
2005-06	93.07	13.28	-259	-71	67081	5041	18389
2006-07	164.22	27.07	-188	-57	35344	3249	10716
2007-08	264.58	55.49	-87	-29	7569	841	2523
2008-09	273.70	59.69	-78	-24	6084	576	1872
2009-10	258.92	56.93	-93	-27	8649	729	2511
2010-11	327.06	83.97	-25	-0.03	625	0.0009	0.75
2011-12	416.19	122.62	64	39	4096	1521	2496
2012-13	454.46	102.25	102	18	10404	324	1836
2013-14	546.52	128.49	195	44	38025	1936	8580
2014-15	717.14	193.86	365	110	133225	12100	40150
	$\sum X = 3515.86$	$\sum Y = 843.65$			$\sum dx^2 = 311102$	$\sum dy^2 = 26317.009$	$\sum dx dy = 89073.75$

$$X^- = 3515.86/10 = 352$$

$$Y^- = 843.65/10 = 84$$

Thus, **Coefficient of Correlation**,
 $r = \frac{\sum dx dy}{\sqrt{\sum dx^2 \sum dy^2}} = \frac{89073.75}{\sqrt{311102 \times 26317.009}} = 0.98$

$$\text{Coefficient of Determination } (r^2) = (0.98)^2 = 0.96$$

It implies that 0.96 or 96% variation in Profit After Tax is explained by variations in Total Income

c) CLtd.

Years	Total Income (X)	Profit After Tax (Y)	dx=X-X ⁻	dy=Y-Y ⁻	dx ²	dy ²	Dxdy
	(In Rs crore)	(In Rs crore)					
March 06	222.62	36.32	-2.496	32.78	6.23	1074.52	-81.81
March 07	287.95	24.29	62.83	20.75	3947.60	430.56	1303.72
March 08	118.72	15.04	-106.39	11.5	11318.83	132.25	-1223.48
March 09	68.07	-254.18	-157.04	-257.72	24661.56	66419.59	40472.34
March 10	129.36	2.14	-95.75	-1.4	9168.06	1.96	134.05
March 11	161.66	17.37	-63.45	13.83	4025.90	191.26	-877.51
March 12	190.62	14.09	-34.49	10.55	1189.56	111.30	-363.86
March 13	268.26	26.38	43.14	22.84	1861.05	521.66	985.31
March 14	383.36	53.16	158.24	49.62	25039.89	2462.14	7851.86
March 15	420.54	29.98	195.42	26.44	38188.97	699.07	5166.90
	$\sum X = 2251.16$	$\sum Y = -35.41$			$\sum dx^2 = 119407.7$	$\sum dy^2 = 72044.31$	$\sum dx dy = 53367.52$

$$X^- = 2251.16/10 = 225.116$$

$$Y^- = 35.41/10 = 3.54$$

Thus, **Coefficient of Correlation**,
 $r = \frac{\sum dx dy}{\sqrt{\sum dx^2 \sum dy^2}} = \frac{53367.52}{\sqrt{119407.7 \times 72044.31}} = 0.57$

$$72044.31 = 0.57$$

$$\text{Coefficient of Determination } (r^2) = (0.57)^2 = 0.32$$

It implies that 0.32 or 32% variation in Profit After Tax is explained by the variations in Total Income.

Probability Error Table

No. of Observations	r	Probability Error (P.E.)	r/P.E.	Test of significance
07	0.99	0.005	0.99/0.005 = 198	Significant
10	0.98	0.008	0.98/0.008 = 122.5	Significant
10	0.57	0.14	0.57/0.14 = 4.07	Not Significant

Probability Error computations for various observations:

$$0.6745 \times (1 - r^2) / \sqrt{n}$$

For the observation having 7 observations with r value of 0.99

$$= 0.6745 \times (1 - (0.99)^2) / \sqrt{7}$$

$$= 0.005$$

For the observation having 10 observations with r value of 0.98

$$= 0.6745 \times (1 - (0.98)^2) / \sqrt{10}$$

$$= 0.008$$

For the observation having 10 observations with r value of 0.57

$$= 0.6745 \times (1 - (0.57)^2) / \sqrt{10}$$

$$= 0.14$$

Appendix 2

Computation forecasted Sales and Total Expenses

The sales and total expenses are forecasted using Parabolic Trend Equation. The purpose of computing the mentioned variables are to use them in forecasting future Profit After Tax after substituting their values in Multiple Regression equation. Multiple Regression Analysis is covered in Appendix 3

The Parabolic trend equation is

$$Y_c = a + bX + cX^2$$

The values of a, b and c can be obtained by solving the following equations.

$$\sum Y = Na + b\sum X + c\sum X^2;$$

$$\sum XY = a\sum X + b\sum X^2 + c\sum X^3$$

$$\sum X^2Y = a\sum X^2 + b\sum X^3 + c\sum X^4$$

a) ALtd.

ai) Sales Forecast (2016-2020)

Years (X)	Net Sales (in Rs Cr.) (Y)	X	X ²	X ³	X ⁴	XY	X ² Y
March 09	85.92	-3	9	-27	81	-258	773
March 10	130.91	-2	4	-8	16	-262	524
March 11	183.93	-1	1	-1	1	-184	184
March 12	262.06	0	0	0	0	0	0
March 13	362.77	1	1	1	1	363	363
March 14	461.29	2	4	8	16	923	1845
March 15	589.80	3	9	27	81	1769	5308
N=7	∑Y=2076.68	∑X=0	∑X ² =28	∑X ³ =0	∑X ⁴ =196	∑XY=2351	∑X ² Y=8997

2077 = 7a + 8c (i)

2351 = 28b (ii)

8997 = 8a + 196c (iii)

b = 2351/28 = 84

Solving equations (i) and (iii), we get:

2077 = 7a + 8c (i)

8997 = 8a + 196c (iii)

Multiplying equations (i) by 8 and (iii) by 7

16616 = 56a + 64c (iii)

62979 = 56a + 1372c (iv)

-46363 = -1308c

c = 35

Substituting the value of c in equation (i):

2077 = 7a + 8(35)

a = 257

Therefore, parabolic trend equation is:

Y_c = 257 + 84X + 35X²

The forecasted Net Sales for the period 2016- 2020

Years	Forecasted Net Sales (Rs in Cr.)
2016	1153
2017	1553
2018	2021
2019	2560
2020	3169

Computation of forecasted Total Expenses

Years (X)	Selling and Administration Expenses(Y) (Rs in Cr.)	X	X ²	X ³	X ⁴	XY	X ² Y
March 09	77.99	-3	9	-27	81	-234	702
March 10	100.54	-2	4	-8	16	-201	402
March 11	138.55	-1	1	-1	1	-139	139
March 12	194.83	0	0	0	0	0	0
March 13	261.93	1	1	1	1	262	262
March 14	319.09	2	4	8	16	319	1276
March 15	424.01	3	9	27	81	424	3816
N = 7	∑Y=1516.94	∑X=0	∑X ² = 28	∑X ³ =0	∑X ⁴ =196	∑XY=431	∑X ² Y=6597

1517 = 7a + 28c (i)

431 = 28b (ii)

6597 = 28a + 196c (iii)

b = 15

Solving equations (i) and (iii):

1517 = 7a + 28c (i)

6597 = 28a + 196c (ii)

Multiplying equations (i) by 4 and (iii) by 1:

6068 = 28a + 112c (iii)

6597 = 28a + 196c (iv)

-529 = -84c

c = 6

Substituting the value of c in equation (i):

1517 = 7a + 28(6)

a = 193

Therefore, Parabolic trend equation is:

Y_c = 193 + 15X + 6X²

Forecasted Total Expenses for the period (2016-2020)

Years	Forecasted Total Expenses (Rs. in Cr.)
2016	349
2017	418
2018	499
2019	592
2020	697

b) B Ltd.

Computation of forecasted Sales using Parabolic Trend Equation

Years (X)	Net Sales (Rs in Cr.) (Y)	X	X ²	X ³	X ⁴	XY	X ² Y
March 07	157.52	-4	16	-64	256	-630	2520
March 08	245.06	-3	9	-27	81	-735	2206
March 09	245.17	-2	4	-8	16	-490	981
March 10	232.22	-1	1	-1	1	-232	232
March 11	294.01	0	0	0	0	0	0
March 12	377.08	1	1	1	1	377	377
March 13	437.26	2	4	8	16	875	1749
March 14	505.87	3	9	27	81	1518	4553
March 15	611.58	4	16	64	256	2446	9785
N=9	ΣY= 3105.77	ΣX= 0	ΣX ² = 60	ΣX ³ =0	ΣX ⁴ =708	ΣXY=3129	ΣX ² Y= 22403

3106 = 9a + 60c (i), 3129 = 60b (ii), 22403 = 60a + 708c (iii)

b = 52

Solving equations (i) and (iii):

3106 = 9a + 60c (i), 22403 = 60a + 708c (iii)

Multiplying equations (i) by 60 and (iii) by 9:

186360 = 540a + 3600c

201627 = 540a + 6372c

-15267 = -2772c

c = 6

Substituting the value of c in equation (i)

3106 = 9a + 60(6)

a = 305

Therefore, the Parabolic trend equation is:

Y_c = 305 + 52X + 6X²

Forecasted Net Sales for the period (2016-2020)

Years	Forecasted Net Sales (Rs. in Cr.)
2016	715
2017	833
2018	963
2019	1105
2020	1259

Computation of Forecasted Total Expenses

Years (X)	Total Expenses (Rs. in Cr.) (Y)	X	X ²	X ³	X ⁴	XY	X ² Y
March 07	102.37	-4	16	-64	256	-409	1638
March 08	154.39	-3	9	-27	81	-463	1390
March 09	178.24	-2	4	-8	16	-356	713
March 10	163.66	-1	1	-1	1	-164	164
March 11	193.83	0	0	0	0	0	0
March 12	232.85	1	1	1	1	233	233
March 13	287.46	2	4	8	16	575	1150
March 14	339.09	3	9	27	81	1017	3052
March 15	429.34	4	16	64	256	1717	6869
N=9	ΣY= 2081.23	ΣX= 0	ΣX ² =60	ΣX ³ = 0	ΣX ⁴ =708	ΣXY=2150	ΣX ² Y=15209

2081 = 9a + 60c (i)

2150 = 60b (ii)

15209 = 60a + 708c (iii)

b = 36

Solving equations (i) and (iii):

2081 = 9a + 60c (i)

15209 = 60a + 708c (iii)

Multiplying equation (i) by 60 and (iii) by 9:

124860 = 540a + 3600c

91254 = 540a + 6372c

33606 = -2772c

c = -12

Substituting the value of c in equation (i):

2081 = 9a + 60(-12)

a = 311

Therefore, the Parabolic trend equation is:

Y_c = 311 + 36X - 12X²

Years	Forecasted Total Expenses (Rs in Cr.)
2016	191
2017	95
2018	-25
2019	-169
2020	-337

c) C Ltd.

Computation of forecasted Net Sales

Years (X)	Net Sales (Rs in Cr.) (Y)	X	X ²	X ³	X ⁴	XY	X ² Y
March 2007	278.17	-4	16	-64	256	-1113	4451
March 2008	311.47	-3	9	-27	81	-934	2803
March 2009	171.66	-2	4	-8	16	-343	687
March 2010	121.31	-1	1	-1	1	-121	121
March 2011	145.44	0	0	0	0	0	0
March 2012	176.69	1	1	1	1	177	177
March 2013	249.13	2	4	8	16	498	997
March 2014	348.27	3	9	27	81	1045	3134
March 2015	403.78	4	16	64	256	1615	6460
N=9	∑Y=2205.92	∑X=0	∑X ² =60	∑X ³ =0	∑X ⁴ =708	∑XY=824	∑X ² Y=18830

2206 = 9a + 60c (i)

824 = 60b (ii)

18830 = 60a + 708c (iii)

b = 14

Solving equations (i) and (iii):

2206 = 9a + 60c (i)

18830 = 60a + 708c (iii)

 Multiplying equations (i) and (iii) by 60 and 9 respectively:

132360 = 540a + 3600c

169470 = 540a + 6372c

-37110 = -2772c

c = 13

Substituting the value of c in equation (i):

2206 = 9a + 60(13)

Therefore, the Parabolic trend equation is:

Y_c = 158 + 14X + 13X²

Forecasted Net Sales during the period (2016-20)

Years	Net Sales (Rs in Cr.)
2016	553
2017	710
2018	893
2019	1102
2020	1337

Computation of Forecasted Total Expenses

Years (X)	Total Expenses (Rs in Cr.) (y)	X	X ²	X ³	X ⁴	XY	X ² Y
March 2007	255.85	-4	16	-64	256	-1023	4094
March 2008	291.97	-3	9	-27	81	-876	2623
March 2009	304.42	-2	4	-8	16	-609	1218
March 2010	112.34	-1	1	-1	1	-112	112
March 2011	131.07	0	0	0	0	0	0
March 2012	162.82	1	1	1	1	163	163
March 2013	228.01	2	4	8	16	456	912
March 2014	315.86	3	9	27	81	948	2843
March 2015	369.87	4	16	64	256	1479	5918
N=9	∑Y=2172.21	∑X=0	∑X ² =60	∑X ³ =0	∑X ⁴ =708	∑XY=426	∑X ² Y=17883

2172 = 9a + 60c (i)

426 = 60b (ii)

17883 = 60a + 708c (iii)

b = 7

Solving equations (i) and (iii):

2172 = 9a + 60c (i)

17883 = 60a + 708c (iii)

 Multiplying equations (i) & (iii) by 60 and 9 respectively:

130320 = 540a + 3600c

160947 = 540a + 6372c

-30627 = -2772c

c = 11

Substituting the value of c in equation (i):

2172 = 9a + 60c

2172 = 9a + 60(11)

a = 168.

Therefore, the Parabolic trend equation is:

Y_c = 168 + 7X + 11X²

Forecasted Total Expenses for the period (2016-2020)

Years	Forecasted Total Expenses (Rs in Cr.)
2016	478
2017	606
2018	756
2019	928
2020	1122

The regression equation of X_1 on X_2 and X_3 is

$$X_1 = a1.23 + b12.3X_2 + b13.2X_3$$

X_1 = Profit After Tax (Dependent Variable)

X_2 = Net Sales (Independent Variable)

X_3 = Total Expenses (Independent Variable)

The value of the constants $a1.23$, $b12.3$ and $b13.2$ are obtained by solving the following three normal equations:

$$\sum X_1 = Na1.23 + b12.3\sum X_2 + b13.2\sum X_3$$

$$\sum X_1 X_2 = a1.23\sum X_2 + b12.3\sum X_2^2 + b13.2\sum X_2 X_3$$

$$\sum X_1 X_3 = a1.23\sum X_3 + b12.3\sum X_2 X_3 + b13.2\sum X_3^2$$

Appendix 3

Multiple Regression Analysis

a) A Ltd.

Calculating the required values: Computation of Forecasted Total Expenses

X_1 (Profit after tax) (Rs in Cr.)	X_2 (Net Sales) (Rs in Cr.)	X_3 (Total Expenses)	X_1X_2	X_1X_3	X_2X_3	X_2^2	X_3^2	X_1^2
2.09	69.59	65.91	145	138	4587	4843	4344	4
7.54	85.92	77.99	648	588	6701	7382	6082	57
19.33	130.91	100.54	2530	1943	13162	17137	10108	374
28.83	183.93	138.55	5211	3925	25484	33830	19196	831
50.58	262.06	194.83	13255	9855	51057	68675	37958	2558
68.46	362.77	261.93	24835	17932	95020	131602	68607	4687
120.61	461.29	319.09	55636	38485	147193	212788	101818	14547
138.89	589.80	424.01	81917	58891	250081	347864	179784	19290
$\sum X_1 = 436.33$	$\sum X_2 = 2146.27$	$\sum X_3 = 1582.85$	$\sum X_1 X_2 = 184177$	$\sum X_1 X_3 = 131757$	$\sum X_2 X_3 = 593285$	$\sum X_2^2 = 824121$	$\sum X_3^2 = 427897$	$\sum X_1^2 = 42348$

Substituting the values in the normal equations:

$$8a1.23 + 2146b12.3 + 1583b13.2 = 436 \text{ (i)}$$

$$2146a1.23 + 824121b12.3 + 593285b13.2 = 184177 \text{ (ii)}$$

$$1583a1.23 + 593285b12.3 + 427897b13.2 = 131757 \text{ (iii)}$$

Multiplying equation (i) by 268.25, we get

$$2146a1.23 + 575665b12.3 + 424640b13.2 = 116957 \text{ (iv)}$$

Subtracting equation (ii) from (iv), we get,

$$2146a1.23 + 824121b12.3 + 593285b13.2 = 184177 \text{ (ii)}$$

$$2146a1.23 + 575665b12.3 + 424640b13.2 = 116957 \text{ (iv)}$$

$$248456b12.3 + 168645b13.2 = 67220 \text{ (v)}$$

Multiplying equation (i) by 197.875, we get,

$$1583a1.23 + 424640b12.3 + 313236b13.2 = 86274 \text{ (vi)}$$

Subtracting equation (iii) from equation (vi), we get,

$$1583a1.23 + 593285b12.3 + 427897b13.2 = 131757 \text{ (iii)}$$

$$1583a1.23 + 424640b12.3 + 313236b13.2 = 86272 \text{ (vi)}$$

$$168645b12.3 + 114661b13.2 = 45485 \text{ (vii)}$$

Multiplying equation (vii) by 1.47, we get,

$$248456b12.3 + 168552b13.2 = 66863 \text{ (viii)}$$

Subtracting equation (viii) from (v), we get,

$$248456b12.3 + 168645b13.2 = 67220$$

$$248456b12.3 + 168552b13.2 = 66863$$

$$93b13.2 = 357$$

$$b13.2 = 357/93 = 4$$

Substituting the value of $b13.2$ in equation (v), we get,

$$248456b12.3 + 168645(4) = 67220$$

$$b12.3 = -2$$

Substituting the values of $b12.3$ and $b13.2$ in equation (i), we get,

$$8a1.23 + 2146(-2) + 1583(4) = 436$$

$$a1.23 = -201$$

Thus, the required regression equation is:

$$X_1 = -201 - 2X_2 + 4X_3$$

The impact on Reported Net Profit after tax based upon the forecasted Net Sales and Total expenses for the period 2016-2020

Years	Working	Forecasted Reported Net Profit After Tax (Rs in Crore)
2016	$-201 - 2(1153) + 4(349)$	-1111
2017	$-201 - 2(1553) + 4(418)$	-1635
2018	$-201 - 2(2021) + 4(499)$	-2247
2019	$-201 - 2(2560) + 4(592)$	-2953
2020	$-201 - 2(3169) + 4(697)$	-3751

b) B Ltd.

X1 (Reported Net Profit After Tax (Rs in crore))	X2 (Net Sales) (Rs in crore)	X3 (Total Expenses) (Rs in crore)	X1 X2	X1 X3	X2 X3	X2 ²	X3 ²	X1 ²
27.07	157.52	102.37	4264	2771	16125	24813	10480	733
55.49	245.06	154.39	13598	8567	37835	60054	23836	3079
59.69	245.17	178.24	14634	10639	43699	60108	31769	3563
56.93	232.22	163.66	13220	9317	38005	53926	26785	3241
83.97	294.01	193.83	24688	16276	56988	86442	37570	7051
122.62	377.08	232.85	46238	28552	87803	142189	54219	15036
102.25	437.26	287.46	44710	29393	125695	191196	82633	10455
128.49	505.87	339.09	64999	43570	171535	255904	114982	16510
193.86	611.58	429.34	118561	83232	262576	374030	184333	37582
$\sum X_1 =$ 830.37	$\sum X_2 =$ 3105.77	$\sum X_3 =$ 2081.23	$\sum X_1 X_2 =$ 344912	$\sum X_1 X_3 =$ 232317	$\sum X_2 X_3 =$ 840261	$\sum X_2^2 =$ 1248662	$\sum X_3^2 =$ 566607	$\sum X_1^2 =$ 97250

The value of the constants a_{1.23}, b_{12.3} and b_{13.2} are obtained by solving the following three normal equations:

$$\sum X_1 = Na_{1.23} + b_{12.3} \sum X_2 + b_{13.2} \sum X_3$$

$$\sum X_1 X_2 = a_{1.23} \sum X_2 + b_{12.3} \sum X_2^2 + b_{13.2} \sum X_2 X_3$$

$$\sum X_1 X_3 = a_{1.23} \sum X_3 + b_{12.3} \sum X_2 X_3 + b_{13.2} \sum X_3^2$$

$$830 = 9a_{1.23} + 3106b_{12.3} + 2081 b_{13.2} \quad (i)$$

$$344912 = 3106 a_{1.23} + 1248662 b_{12.3} + 840261 b_{13.2} \quad (ii)$$

$$232317 = 2081 a_{1.23} + 840261 b_{12.3} + 566607 b_{13.2} \quad (iii)$$

Multiplying equation (i) by 345.11, we get,

$$286441 = 3106a_{1.23} + 1071912 b_{12.3} + 718174 b_{13.2} \quad (iv)$$

Subtracting equation (iv) from equation (ii), we get,

$$344912 = 3106 a_{1.23} + 1248662 b_{12.3} + 840261 b_{13.2} \quad (ii)$$

$$286441 = 3106a_{1.23} + 1071912 b_{12.3} + 718174 b_{13.2} \quad (iv)$$

$$58471 = 176750 b_{12.3} + 122087 b_{13.2} \quad (v)$$

Multiplying equation (i) by 231.22, we get,

$$192651 = 2081a_{1.23} + 718169 b_{12.3} + 481169 b_{13.2} \quad (vi)$$

Subtracting equation (vi) from equation (iii) we get,

$$232317 = 2081 a_{1.23} + 840261 b_{12.3} + 566607 b_{13.2} \quad (iii)$$

$$192651 = 2081a_{1.23} + 718169 b_{12.3} + 481169 b_{13.2} \quad (vi)$$

$$39666 = 122092 b_{12.3} + 85438 b_{13.2} \quad (vii)$$

Considering equations (v) and (vii)

$$58471 = 176750 b_{12.3} + 122087 b_{13.2} \quad (v)$$

$$39666 = 122092 b_{12.3} + 85438 b_{13.2} \quad (vii)$$

Multiplying equation (v) by 0.699 we get,

$$40871 = 123548 b_{12.3} + 85438 b_{13.2} \quad (viii)$$

Subtracting equation (viii) from (vii) we get,

$$39666 = 122092 b_{12.3} + 85438 b_{13.2} \quad (vii)$$

$$40871 = 123548 b_{12.3} + 85438 b_{13.2} \quad (viii)$$

$$-1205 = -1456b_{12.3}$$

$$b_{12.3} = 0.83$$

Substituting the value of b_{12.3} in equation (vii) we get,

$$39666 = 122092 (0.83) + 85438 b_{13.2}$$

$$b_{13.2} = -0.72$$

Substituting the values of b_{12.3} and b_{13.2} in equation (i) we get,

$$830 = 9a_{1.23} + 3106 b_{12.3} + 2081 b_{13.2}$$

$$830 = 9a_{1.23} + 3106 (0.83) + 2081 (-0.72)$$

$$830 = 9a_{1.23} + 1080$$

$$a_{1.23} = -28$$

Thus, the regression equation is:

$$X_1 = -28 + 0.83X_2 - 0.72X_3$$

The impact on Reported Profit after Tax for the period 2016- 2020 based upon the forecasted turnover and total expenses.

Years	Solution	Reported Net Profit After Tax (Rs in Crore)
2016	-28+0.83(715)-0.72 (191)	427
2017	-28+0.83 (833)-0.72 (95)	595
2018	-28+0.83 (963)-0.72 (-25)	789
2019	-28+0.83 (1105)-0.72 (-169)	1011
2020	-28+0.83 (1259)-0.72 (-337)	1260

c) C Ltd.

Profit After Tax (Rs in Crore) X1	Net Sales (Rs in Crore) X2	Total Expenses (Rs in Crore) X3	X1 X2	X1 X3	X2 X3	X2 ²	X3 ²	X1 ²
24.29	278.17	255.85	6757	6215	71170	77379	65459	590
15.04	311.47	291.97	4685	4391	90940	97014	85246	226
-254.18	171.66	304.42	-43633	-77377	52257	29467	92672	64607
2.14	121.31	112.34	260	240	13628	14716	12620	5
17.37	145.44	131.07	2526	2277	19063	21153	17179	302
14.09	176.69	162.82	2490	2294	28769	31219	26510	199
26.38	249.13	228.01	6572	6015	56804	62066	51989	696
53.16	348.27	315.86	18514	16791	110005	121292	99768	2826
29.98	403.78	369.87	12105	11089	149346	163038	136804	899
$\sum X_1 = -71.73$	$\sum X_2 = 2205.92$	$\sum X_3 = 2171.21$	$\sum X_1 X_2 = 10276$	$\sum X_1 X_3 = -28065$	$\sum X_2 X_3 = 591982$	$\sum X_2^2 = 617344$	$\sum X_3^2 = 588247$	$\sum X_1^2 = 70350$

The value of the constants a_{1.23}, b_{12.3} and b_{13.2} are obtained by solving the following three normal equations:

$$\sum X_1 = Na_{1.23} + b_{12.3} \sum X_2 + b_{13.2} \sum X_3$$

$$\sum X_1 X_2 = a_{1.23} \sum X_2 + b_{12.3} \sum X_2^2 + b_{13.2} \sum X_2 X_3$$

$$\sum X_1 X_3 = a_{1.23} \sum X_3 + b_{12.3} \sum X_2 X_3 + b_{13.2} \sum X_3^2$$

$$-72 = 9a_{1.23} + 2206b_{12.3} + 2171b_{13.2} \quad (i)$$

$$10276 = 2206a_{1.23} + 617344b_{12.3} + 591982b_{13.2} \quad (ii)$$

$$-28065 = 2171a_{1.23} + 591982b_{12.3} + 588247b_{13.2} \quad (iii)$$

Multiplying equation (i) by 245.11 we get,

$$-17648 = 2206a_{1.23} + 540713b_{12.3} + 532134b_{13.2} \quad (iv)$$

Subtracting equation (iv) from equation (ii) we get,

$$10276 = 2206a_{1.23} + 617344b_{12.3} + 591982b_{13.2} \quad (ii)$$

$$-17648 = 2206a_{1.23} + 540713b_{12.3} + 532134b_{13.2} \quad (iv)$$

$$27924 = 76631b_{12.3} + 59848b_{13.2} \quad (v)$$

Multiplying equation (i) by 241.22 we get,

$$-17368 = 2171a_{1.23} + 532131b_{12.3} + 523689b_{13.2} \quad (vi)$$

Subtracting equation (vi) from equation (iii) we get,

$$-28065 = 2171a_{1.23} + 591982b_{12.3} + 588247b_{13.2} \quad (iii)$$

$$-17368 = 2171a_{1.23} + 532131b_{12.3} + 523689b_{13.2} \quad (vi)$$

$$-10697 = 59851b_{12.3} + 64558b_{13.2} \quad (vii)$$

Multiplying equation (vii) by 1.28036 we get,

$$-13692 = 76631b_{12.3} + 76623b_{13.2} \quad (viii)$$

Subtracting equation (viii) from equation (v) we get,

$$27924 = 76631b_{12.3} + 59848b_{13.2} \quad (v)$$

$$-13692 = 76631b_{12.3} + 76623b_{13.2} \quad (viii)$$

$$41616 = -16775b_{13.2}$$

$$b_{13.2} = -2$$

Substituting the value of b_{13.2} in equation (5), we get

$$27924 = 76631b_{12.3} + 59848(-2)$$

$$b_{12.3} = +2$$

By the substituting the values of b_{12.3} and b_{13.2} in equation (i) we get,

$$-72 = 9a_{1.23} + 2206b_{12.3} + 2171b_{13.2}$$

$$-72 = 9a_{1.23} + 2206(2) + 2171(-2)$$

$$a_{1.23} = -16$$

Thus the regression equation is

$$X_1 = -16 + 2X_2 - 2X_3$$

The impact on Reported Net Profit after tax based upon the forecasted Net Sales and Total expenses for the period 2016 to 2020

Years	Working	Forecasted Reported Net Profit After Tax (Rs in Crore)
2016	$-16 + 2(553) - 2(478)$	134
2017	$-16 + 2(710) - 2(606)$	192
2018	$-16 + 2(893) - 2(756)$	258
2019	$-16 + 2(1102) - 2(928)$	332
2020	$-16 + 2(1337) - 2(1122)$	414

1. ASSOCHAM & PWC (2015). "Evolution of E-commerce in India-Creating the bricks behind the Clicks", <https://www.pwc.in/assets/pdfs/publications/2014/evolution-of-E-commerce-in-india.pdf>, Accessed on October 27.
2. At the times when E-commerce acquisitions in India go unbounded", (2015) <http://dazeinfo.com/2015/08/10/commerce-acquisitions-india-2014-2015flipkart-snapdeal-freecharge/>,
3. Accessed on November 1, A Look at the hurdles faced by E-commerce industry"(2015), http://articles.economictimes.indiatimes.com/2014-09-09/news/53730746_1_E-commerce-industry-advisory-firm-e-tailers, Accessed on November 4.
4. B2B E-commerce start-ups flourishing in India(2015), <http://www.pymnts.com/news/b2b-payments/2015/b2b-E-commerce-startups-flourishing-in-india/>, Accessed on October 31.
5. Business as usual: E-commerce in India(2015). [http://tradewinds.iift.ac.in/Magazines/BUSINESS%20AS%20USUAL%20E-Commerce%20in%20India%20\(1\).pdf](http://tradewinds.iift.ac.in/Magazines/BUSINESS%20AS%20USUAL%20E-Commerce%20in%20India%20(1).pdf), Accessed on November 2.
6. B2C e-Commerce can power Make in India(2015). <http://www.businesstoday.in/opinion/columns/b2c-E-commerce-can-power-narendra-modi-govt-make-in-india/story/218617.html>, Accessed on November 2.
7. Ecommerce Business in India-2014 to 2015 Report PDF(2015). <http://indiamicrofinance.com/ecommerce-business-india-2014-2015-report-pdf.html>, Accessed on November 3.
8. E-commerce boom and hurdles in India(2015). <http://www.mapsofindia.com/my-india/india/E-commerce-boom-and-hurdles-in-india>, Accessed on November 5.
9. E-Commerce in India: Growth, Key Challenges and Upcoming Trends (2015).https://www.academia.edu/9885464/E-Commerce_in_India_Growth_Key_Challenges_and_Upcoming_Trends, Accessed on November 8.
10. E-commerce companies riding the Make-in-India wave(2015). <http://www.thehindubusinessline.com/info-tech/ecommerce-companies-riding-the-makeinindia-wave/article6530839.ece>, Accessed on November 10.
11. Future of E-Commerce: Uncovering Innovation (2015). http://www.assochem.org/upload/event/recent/event_1113/Background_Paper_Future_of_e-Commerce_web.pdf, Accessed on November 3.
12. Is India in an E-commerce bubble? (2015). http://www.business-standard.com/article/companies/is-india-in-an-E-commerce-bubble-115041600253_1.html, Accessed on November 2.
13. Impact of E-commerce on SMEs in India (2015). https://www.kpmg.com/IN/en/IssuesAndInsights/ArticlesPublications/Documents/Snapdeal-Report_Impact-of-e-Commerce-on-Indian-SMEs.pdf, Accessed on November 9.
14. Impact of E-commerce on SMEs in India(2015). https://www.kpmg.com/IN/en/IssuesAndInsights/ArticlesPublications/Documents/Snapdeal-Report_Impact-of-e-Commerce-on-Indian-SMEs.pdf, Accessed on November 9.
15. KhuranaAjeet (2013). Eight Challenges for Ecommerce in India", Global E-commerce Solutions, December 23, <http://blogs.pb.com/ecommerce/2013/12/23/8-challenges-ecommerce-india/>, Accessed on November 6.
16. Major Challenges Ahead for Commerce in India(2015). <http://indianonlineseller.com/2015/05/major-challenges-ahead-for-ecommerce-in-india/>, Accessed on November 4
17. Sardana MMK. "Evolution of E-Commerce in India Challenges Ahead-Part 1(2015).<http://www.isid.org.in/pdf/DN1407.pdf>, Accessed on November 3.
18. The Growing Pains of Indian E-commerce: What you need to know(2015).<http://www.forbes.com/sites/morganhartley/2013/01/24/the-growing-pains-of-indian-E-commerce-what-you-need-to-know/>, Accessed on November 7.
19. The flourishing E-commerce sector in India creating new job opportunities(2015). <https://storify.com/reenadhiman/the-flourishing-E-commerce-sector-in-india-creati>, Accessed on October 28.

THE INFLUENCE OF SOCIOECONOMIC CHARACTERISTICS ON PATIENT SATISFACTION: A STUDY ON DIABETIC PATIENTS IN INDIA.

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ABSTRACT

Patient satisfaction has been viewed as one of the very important requirements to health care providers in recent times than in the yore. The health care providers are evolving rapidly as far as patient behavior is concerned. The quality of care of course depends on the service operations but patient satisfaction might be an important indicator for modern hospitals. The patient is a social being. Plethora of social characteristics influence his or her emotions and whereupon psychological wellbeing. Hence, the influence of socioeconomic characteristics on patient's emotional outcomes cannot be ignored. With this notion the present study is devised in order to explore the influence of socioeconomic characteristics on patient satisfaction. *Methods:* the study is primarily a descriptive study with a sample of 100 diabetic patients in Warangal, Telangana, India. Chi-square analysis is chosen to be fit for realization of the objectives. *Conclusions:* the socioeconomic characteristics are not observed to be influential in the study except income. Income is found to be significant in the study. So, it seems rational to state that patient satisfaction is influenced by income level of the individual.

Key words : *socioeconomic characteristics, patient satisfaction, diabetes, health care organization.*

Introduction

For decades diabetes is one of the major health care problems in India. India is among top 10 countries in terms of number of people suffering from diabetes. According to International Diabetes Federation (IDF), in 2013 there were 65 million people suffering from this globally which is estimated to grow to 109 million by 2035 (IDF atlas, 2013).[1] Approximately 1.5 million people died in 2013, with the highest mortality reported in highly populated countries like China and India. India is found to be largest contributor to mortality, with 1.1 million deaths reported last year.

(Joshi, S. R., 2008) Some of the important factors like genetic predisposition combined with life style changes, associated with urbanization and globalization, are found to be important reasons for rising diabetes in India. [2] In addition to the same, the type-II diabetes in the Indian

population observed to occur at least a decade earlier compared to western population. It eventually leads to the subsequent assumption that the productivity in India will be a serious problem.

Yadav NK, Sathian B, Kalai RS (2012) mentioned that India is often referred as diabetes capital of the world. [3] International Diabetes Federation 2009 report reveals that the total number of diabetic patients in India is 50.8 million. [4] Observed the frequency of diabetic cases was highest in the 50-59 years age group. One study reported that diabetes affects approximately 15% of people more than equal to 20 years and 19% of people more than equal to 40 years of age in urban areas. According to WHO, diabetes affects more than 436000 people in certain countries and this will rise up to 1328000 by 2030. According to WHO, deaths due to diabetes mellitus reached 3224 (2.17%) of the total deaths in certain countries. [5] This is due to changes in life style, urbanization and physical inactivity. A strong association is well recognized between the pressure of diabetes, hypertension, chronic kidney diseases and cardiovascular diseases.

Subbaiah A, and Subbaiah G. (2000) mentioned that genetic changes in diabetes may be important in (a) defining the functional role of specific genetic alterations (b) developing potential biomarkers. [6] Sunita Singh (2006) mentions that variants of number of genes have been associated to Type-II diabetes mellitus. [7] This is due to different environmental factors and genetic background of the given patient. According to WHO India leads the world with largest number of diabetic patients.

Ureil L. Malanda, Laura W. I. Welchen (2011) finds that when diabetes mellitus duration is over one year, the overall effect of self-monitoring of blood-glucose on glycemic control in patients with type-II diabetes mellitus who are not using insulin is small up to 6 months after initiation and subsides after 12 months.[8] There is no evidence that self-monitoring of blood glucose (SMBG) affects patient's satisfaction, general wellbeing or general health-related quality of life. Kumar, V *et al.* (2013) told that non-pharmacological therapies for type-II diabetes have been researched extensively.[9] In recent years, ideal therapies should have a similar degree of efficacy without

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the troublesome side effects. Herbal medications are the most commonly used alternative therapy for blood-sugar control. Regular exercise is important for patients with type-II diabetes to improve insulin sensitivity, glycemia and lipid-levels. Patients are encouraged to include low GI food in their daily intake such as legumes, fruits, vegetables and wholegrain products. Findings demonstrate the efficacy of yoga on fasting blood glucose lipid profile. These findings are short term and immediate diabetes outcome.

Muhammad, A. (2013) told that many herbs and plants have been described as possessing hypoglycemic activity when taken orally.[10] Some have been pharmacologically tested and shown to have some value in treating diabetes mellitus type-II. Examples; *Ferula asafoetida*. Olokobo, B. O., (2012) suggested that this metabolic disease can be prevented through lifestyle modification, diet control and control of overweight and obesity. [11]

Adin pectin which is secreted from adipose tissues is inversely correlated with weight gain. T.S. Sanal, N. S. Nair, P. Adhikari (n.d.) gave information about factors associated with poor control of type-II diabetes mellitus. Life-style modification in elderly patients (>60 years) males have normal Body Mass Index (BMI) patients had better control on diabetes. Younger diabetics did not care about the disease control. Females take disease only as a second priority as compared to males. Presence of other diseases like coronary heart disease, neuropathy, retinopathy, heart failure and neurological disorders were associated with poor control of diabetes. Malanda U L, *et al* (n.d), said about self-monitoring of blood glucose (SMBG) might be effective in improving glycemic control in patients with type-II diabetes who are not using insulin.....by using SMBG, patients can achieve a more individual management of their disease and thereby a better quality of life and this might result in a decrease in consultations with the general practitioner. [12]

Anil K, Sanjeev S, Ahuja, Vidya S, Kalpana M, told that healthcare professionals concern about the average patients fear, apprehensions and ability to handle insulin therapy. [13] Most tablet users believe that their quality of life will not worsen with insulin. One third(1/3rd) said that they believe that it will improve. Majority of oral hypoglycemic agent users though not fearing insulin are still reluctant to see insulin until and unless properly advised on the necessity of it. Tablet users do not feel serious about diabetes than injectible users. Shiekha Al-Aujan and *et al* (2012) said that diabetic patients with difficulties in adherence to recommendations as well as patients treated with insulin require more attention in order to improve their treatment satisfaction. [14]

Is patient satisfaction a distant reality in health care?

The phrase patient satisfaction might be a distant relative to diabetics and more close to health care industry. However this phrase endowed with, by and large, importance due to rising levels of education, income, occupation and along with their consequent effect on individual awareness knowledge regarding health care technology. The question that what determines the health of the health care organization might be, or indeed, explained by patient satisfaction towards communication interventions, treatments, or respective outcomes associated with the medical regimen. The patient is a social being. There are several factors that might influence the psyche, namely, gender, income, occupation, family size, education and etc. Hence, it might seem rational that if the operability of health care organization depends on patient satisfaction, that might eventually tend to depend on certain other socioeconomic factors. Exactly with this intent this study on influence of socioeconomic factors (nonclinical) on patient satisfaction is undertaken in certain region mentioned in the title.

Alazri. M. H., Neal. R. D. (2003) in their study on health care service outcome finds that the patient satisfaction very much influences health care quality. They also mention that the satisfaction determines health care outcomes and patient's behavior. [15] Payrot, M. *et al*. (2006) did a study on country-level and individual level patterns in a face-to-face telephonic interview with diabetics patients in 13 countries. [16] They found the patients complaining about the unsatisfactory collaborations between the providers, financial barriers associated with treatments. Most importantly the patients with poor socioeconomic background appeared to have more diabetic complications and lower access to care. However, they perceive that countries differ significantly in their observations. Shahin, I and *et al* (2013) on a study on 177, i.e. 77 from Egypt and 100 from Sudan, diabetic patients finds that the items related to quality of life and patient satisfaction seems to be significantly different between the two geographic locations. [17] They in fact concluded that the diabetic patients quality of life is very poor and so their satisfaction.

Solomon, M. A., Yemene, B., and Alemyehu, W. (2014) studied adult diabetic patients in Gondar and they found that half of the diabetic patients (sample respondents) did not adhere to medications due to their dissatisfaction with services. [18] They also found that while communicated strategically simultaneously improve the quality of service, improved level of service. Phaswana-Mafuya, N. and *et al*. (n.d) in their report on patient satisfaction discuss that understanding patient satisfaction is first step

to improve the quality of health care. [19] They also mention that there are significant differences among male and female subjects across selected items of study. Some authors reports going a step ahead that the women are more satisfied than men with respect to medical care. The other researcher, Sanmartin et al. (2002), finds that this difference in fact might be attributable to user frequency which in turn might influence the discrepancies found between male and female patient satisfaction rates and that the type of service being provided. [20] Babwah, F., et al (2006) studied inter gender difference to compliance with the treatment regimen. They in fact found that the women tend to be more compliant than men due to the fact that the later are more likely to consume alcohol and tobacco. [21] They also found that women are more compliant to diet than their counterparts in addition to their satisfactory engagement with dispensary and clinical conditions. Shyamsundar, J. R. *et al* (2014) did a cross sectional study on 100 diabetic patients to find the differences among male and female patients. [22] The study scores were more to male patients for certain factors that were different to female patients with respect to non-clinical factors, whereas the scores were similar as far as clinical factors were concerned.

Wagner, H., (2008), on a study on 90 diabetic patients found that there were significant differences between patient's perceptions before and after communication or patient education interventions. [23] They, indeed, found that the patients who participated in the intervention were two times more likely to score higher on post-test. No difference between pretest and post-test scores was found for those who did not participate in the interventions. Riaz, M., Rehman, R.A., Hakeem, R. Shaheen, F. (2013), studied quality of life versus patient satisfaction with the help of mean scores of all the eight domains of QOL and they were found to be significantly different between males and females. [24] Moreover, diabetes education was associated with increase in scores of general health and vitality in new and follow up patients with diabetes. Westaway, M. S. *et al* (2003), in their cross sectional study finds that the provider and health care settings are major components of patient satisfaction. [25]

Problem identification and objectives

From the above section it seems that there is huge amount of evidence that socioeconomic factors do influence patient satisfaction. These factors namely, age, gender, education, income, occupation might influence the level of satisfaction towards certain clinical factors like treatment, adherence to prescription or medical regimen, pharmacy, service personnel, hospital atmospherics and etc. These relationships appear to be obvious and impact

so profoundly so much so that the health of the very health care organization needs diagnosis.

Given the dilemma as described above, this study eventually reduces to the following set of questions:

1. What is the most important medicine prescribed by the consultants to the patients?
2. Do really socioeconomic factors are important to understand patient satisfaction?
3. In case, if so, what is the level of evidence? Is it possible to find it empirically?
4. How can we understand consultant satisfaction in contrast to patient satisfaction?

To answer these questions and to ascertain certain evidence to these doubts this study is devised on diabetic patients with the following objective.

1. To know what factors influence patient satisfaction.
2. To ascertain the level of evidence

Research Methods

The study is characterized by certain doubts as to whether demographic characteristics of the patients would influence the patient satisfaction, whereby paving a reasonable dilemma if the health care outcomes need to be wrought up so as to influence the patient satisfaction. So, the study is basically a descriptive research. Zikmund (2012) writes about descriptive research as a method of answering certain questions like *who, what, when, where* and *how*. He also mentions that descriptive research is the type that fits well to study hypothesis formulated in exploratory studies. [26]

The present study i.e. influence of socioeconomic characteristics on patient satisfaction is not only to study certain associations among study variables like age, gender, income, education levels of the sample respondents and verify if any dependencies exists among them. In short, the interdependencies among variables were tested by formulating hypothesis. For instance, the doubt that if patient satisfaction truly depends on gender will eventually leads to the subsequent statement as whether inter gender differences to patient satisfaction are significant or not. This type of dilemma surely requires intervention of educated guess. Thefreedictionary.com defines the educated guess as “the guess that is likely to be correct because you have enough knowledge about a particular subject.” Wiktionary define educated guess as “an estimate, a guess value based on experience or theoretical knowledge”. [27] Howell, K. (2015) mention about educated guess in his course material as “the guess that might arise after sufficient understanding on problem”. In fact, he call this understanding as “education”. [28] So, in simple terms, the educated guess

is “the learning required to make a *guess*”. Now to this study the guess might be that the patient satisfaction depends on socioeconomic factors. So, the hypothesis for the study (Ha) obviously will be “satisfaction depends on socioeconomic characteristics of the sample individuals”. Chi-square analysis is used to test, whether exploratory variable (satisfaction) depends on socioeconomic variables (explanatory variables) namely, gender, age, occupation, and income. The chi-square test will be a suitable technique to test this type of relationships especially if the data is categorical. There are other couple of techniques like Likelihood test, fisher's exact test were computed in IBM SPSS v20. The facts and figures of the results are explained in the following section.

The data was gathered by conducting a sample survey on 100 diabetic patients in Warangal. Diabetes is chosen due its generality and prevalence. Convenience sampling procedure is adopted for the responses would be taken at ease. Hence, there are both types of data i.e. primary and secondary.

Analysis and discussions

The data collected were organized systematically as 100 X 13 data matrix. As it was mentioned earlier the variables are classified into two types' viz. explanatory variables and exploratory variables. The exploratory variables are: prescription/composition, blood sugar levels (before), blood sugar levels (after), consultant satisfaction, patient satisfaction and the explanatory variables are age, gender, education, occupation, income respectively. The data so organized is ordinal, and nominal scale. The following is the analysis done in SPSS v20 in Windows v7, 32bit machine.

Descriptive analysis Table -1: Patient age

Prescription	Frequency	Percent	Valid Percent	Cumulative Percent	Sample Statistics
Daolinm	3	3.0	3.0	3.0	
glycomet	47	47.0	47.0	50.0	
glinil-M	5	5.0	5.0	55.0	
gluconil-M	15	15.0	15.0	70.0	
Diataal	2	2.0	2.0	72.0	
Galvus	2	2.0	2.0	74.0	
Zomet	3	3.0	3.0	77.0	
Theraformin	3	3.0	3.0	80.0	
Forminal	2	2.0	2.0	82.0	
Homeopathy	17	17.0	17.0	99.0	
Mean					3.71000
SE					0.12085
Total	100	100.0	100.0		

From the above table it is clear that out of 100 individuals 17 percent of diabetic patients undergoing homeopathy and rest (83 percent) are undergoing allopathic treatments. Among those 83 percent, most of them prescribed by Glycomet (47 %), which is followed by Gluconil-M (15 %). Very few patients were observed to be prescribed by Diataal, Galvus, Forminal i.e. only 2 % respectively. The average response is 3.7100, which means Guconil-M is what is prescribed to the average number of individuals or patients.

As far as the education is concerned; out of 100 individuals 48 of them are below graduation, 28 of them are just graduates and 7 of them are post-graduates. The average response happened to be 1.93 which means although most of the individuals appeared to be below graduation the best class seems to be the second category i.e. graduates. Although it appears that there is little bias, but the evidence is very poor. Moreover, though there are three categories in the data i.e. below graduation, graduation and post-graduation, but, in fact, the sample statistic (arithmetic mean) shows that there are only two categories.

Regarding gender; most of the respondents are male (74 %) only 24 percent of the respondents are female. The gender wise responses appear to be biased. The mean response is 1.02 with a standard error 0.044. The bias is 0.14 (74 – 50 = 14). Hence, the statistic (sample arithmetic mean) is in favor of null model. There is evidence in the data that the gender wise responses are biased.

Regarding income; most of the respondents (33 %) belong to the category Rs. 10000 to Rs. 20000, followed by 21 percent to Rs. 20000 to 40000, 19 percent to Rs. 5000 and below, 15 % to 5000 to 10000 and only 12 percent to Rs. 40000 to Rs. 60000. The average class is between Rs. 5000 to Rs. 20000. The responses given by this category might overweigh that of the rest of the categories. And as far as the occupation is concerned; most of the respondents (29 %) are found to be retired individuals and next important category is individuals living on farming or agriculture. Rest of the individuals are scattered widely as in categories of business (13 %), employees (2 %), homemakers (15 %), self-employed (18%) respectively. The sample is widely diversified as far as occupations are concerned.

All the above section details sample characteristics of the sample. The main objective of the study is to know

or assess the patient satisfaction with respect to the respective socioeconomic characteristics (as mentioned in the research methods). The chi-square analysis is done on the study variables in order to know about the relationships among explanatory versus exploratory variables the following are the chi-square results.

S. No.	Variables	P- Value for Pearson Chi-square statistic	P-value for likelihood ratio	Inference
1	Patient age versus satisfaction	.922	.834	H0 is accepted
2	Educational qualification versus satisfaction	.568	.516	H0 is accepted
3	Patient gender versus satisfaction	.434	.464	H0 is accepted
4	Patients income versus satisfaction	.021	.098	Ha is accepted
5	Patients occupation versus satisfaction	.098	.217	H0 is accepted

The above table describes relationships among study variables. The values that are provided in the table are p-values of the respective tests. Two tests namely Pearson chi-square test along with likelihood tests are considered for the analysis. The chi-square test generally take care of significance test for the null hypothesis, H0 being independent. The associated likelihood test would serve as additional evidence if chi-square test appears suspicious. Coming to the facts, the relations are not significant except patient's income versus their satisfaction. It is clear from the likelihood ratio that although the data has evidence in support of null model, in fact, it is not so strong. So, what is so special about income? And why it is different from rest of the socioeconomic variables might be interesting fact.

So it appears as if there is evidence that the patient satisfaction depends on income level of the individual. Although it is difficult to surmise as what triggers patients to respond differently to this health care outcome known as satisfaction, it somehow appears plausible to believe in the study results. However, to answer the question that what makes income so important might require further study.

Conclusion

The study reveals that all the socioeconomic variables might not influence satisfaction in the same way. There is no evidence in the study to affirm such as age, gender, education, occupation are significant in the study. However, the income found to be significant, i.e. inter-income level differences are realized. The satisfaction of the individuals depends on the level of income of the patient. The degree to which satisfaction depends on the income can be explored with a separate and successive research endeavor. There is evidence in the data that the consultant satisfaction depends on patient satisfaction.

References

1. Anil Kapoor, Sanjeev Shishow, MMS Ahuja, Vidya Sen, Kalpana Mankame “Diabetes Care In India-Patients Perception, Attitudes and Practices”.
2. Alazri. M. H., Neal. R. D. (2003).
3. Babwah, F., et al (2006). The role of gender in compliance and attendance at an outpatient clinic for type 2 diabetes mellitus in Trinidad. *Rev Panam Salud Publica/Pan Am J Public Health* 19(2).
4. Howell, K. (2014). Method of Undetermined Coefficients. *Ordinary differential equations*. 2014-2015 ed. P.401. http://howellkb.uah.edu/DEtext/Part3/Guess_Method.pdf
5. IDF. (2014). http://www.idf.org/sites/default/files/EN_6E_Atlas_Full_0.pdf
6. IDF.(2014). IDF diabetes atlas. 6th edition. http://www.idf.org/sites/default/files/EN_6E_Atlas_Full_0.pdf
7. Joshi, S. R, Das, A. K. Vijay, V. J. Mohan, V. (2008). Challenges in Diabetes care in India : sheer numbers, lack of awareness and inadequate control. *JAPI VOL. 56 JUNE 2008. P. 443.*
8. Malanda U. L (2012). Self-monitoring of blood glucose in patients with type 2 diabetes mellitus who are not using insulin. *The Cochrane Collaboration*. Published by John Wiley & Sons, Ltd.
9. Muhammad Aleram (2013) .Diabetes Mellitus Type-II; Treatment Strategies And Options” *The University of Poonch , Pakistan.*

10. Phaswana-Mafuya, N. and et al. (n.d). Patient Satisfaction with Primary Health Care Services in a Selected District Municipality of the Eastern Cape of South Africa. Retrieved from <http://cdn.intechopen.com/pdfs-wm/22129.pdf>
11. Payrot, M.(2006). Patient and provider perceptions of care for diabetics: results of the cross national dawn study. *Diabetologia*. 49: 279–288. DOI 10.1007/s00125-005-0048-8. #Springer-Verlag
12. Riaz, M., Rehman, R.A., Hakeem, R. Shaheen, F. (2013). Health related quality of life in patients with diabetes using SF- 12 questionnaire. *Journal ofDiabetology*, 2:1
13. Shahin, E. (2013). Quality of life and satisfaction of diabetic foot patients: comparative study. *Journal of American science*; 9(1). pp. 477–483.
14. Shiekha Al-Aujan, Sinaa-Al-Aqeel (2012). Patients Satisfaction with Diabetes Medications In One Hospital-Saudi Arabia. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3474175/>
15. Shyamsundar, J. R. (2014). Self-Care Practices among Diabetic Patients in Anand District of Gujarat. Hindawi Publishing Corporation ISRN Family Medicine, Article ID 743791, 6 pages <http://dx.doi.org/10.1155/2014/743791>
16. Solomon, M. A., Yemene, B., and Alemyehu, W. (2014). Barriers to diabetes medication adherence in North West Ethiopia. *SpringerPlus* 2014, 3:195 <http://www.springerplus.com/content/3/1/195>
17. Subbaiah, A, Subbaiah, G. (2000). The Genetics of Type-II Diabetes Mellitus. A Review *Journal of Scientific Research*, Banaras Hindu University, Varanasi.
18. Sunita Singh (2006).The Genetics of Type-2 Diabetes Mellitus-A Review *Journal of Scientific Research*. Department of Zoology, Mahila Mahavidyalaya, Banaras Hindu University, Varanasi.
19. T.S. Sanal, N. S. Nair, P. Adhikari . Factors associated with poor control of type 2 diabetes mellitus: A systematic review and Meta-analysis. *Journal of diabetology*. <http://www.journalofdiabetology.org/Pages/Releases/FullTexts/SixthIssue/RA-1-JOD-11-007.aspx>
20. Ureill L. Malanda , Laura M l Welschen (2011). Self-Monitoring Of Blood-glucose In Patients With Type-II Diabetes Mellitus Who Are Not Using Insulin.
21. V.Kumar, M.K.Tripati, P.K.Chauhan, P.K.Singh (2013) .Different From Non-Pharmacological Approaches For Management of Type-II Diabetes” *Journal of Diabetology*
22. Wagner, H., (2008), Eye on Diabetes: A Multidisciplinary Patient Education Intervention. *The Diabetes Educator* 2008; 34; 84. DOI: 10.1177/0145721707312205
23. Westaway, M. S. (2003). Interpersonal and organizational dimensions of patient satisfaction: the moderating effects of health status. *International journal of quality in health care*. 15 (4). Pp.337-344.
24. http://en.wiktionary.org/wiki/educated_guess
25. Yadav NK, Sathian B, Kalai RS. (2012). Assessment of Diabetes Mellitus in India and Nepal. *WebmedCentral BIOCHEMISTRY*; 3(6):WMC003544 doi:0.9754/journal.wmc.2012.003544
WHO. (n.d.). http://www.who.int/topics/diabetes_mellitus/en/
26. Zikmund, W. (2012). The business research methods: overview. *Business research methods*, 9th ed. Cengage learning. P. 55.

Ants do all they possibly can

How much food does an ant gather in summer? All that it possibly can! Now that's a great work ethic to have. Do all you can! One ant doesn't worry about how much food another ant is collecting. It does not sit back and wonder why it should have to work so hard. Nor does it complain about the poor pay! Ants just do their bit. They gather all the food they can. Success and happiness are usually the result of giving 100% - doing all you possibly can. If you look around you, you'll find that successful people are those who just do all they possibly can.

ASSESSING THE GROWTH OF RURBAN MARKETS IN ANDHRA PRADESH

Narendra Kagita^a
Usha Spandana^b
Preethi Kholay^c

ABSTRACT

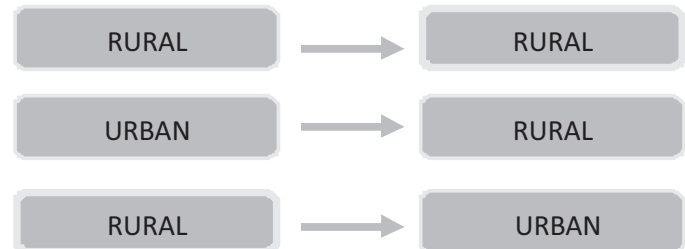
Rural India has been contributing to a new segment called the “Rurban” which is fueling growth in many categories of consumption. This entire new segment, displays a hybrid characteristic, and surprisingly there is a keen interest in decoding this new consumer. The number of census towns in Andhra Pradesh increased from 93 to 228. A census town with population of 5,000 has been considered for the purpose of the study. At least 75 per cent of male working population engaged in non-agricultural pursuits would be assessed on the consumption patterns. The density of population would be at least 400 per sq. km. (1,000 per sq. mile). The rural market in India contributes to 70% of India's population, 56% of income, 64% of expenditure and 33% of savings and 50% of rural GDP; because of these factors, the purchasing power of rural India has a spiraling affect. Rural consumption shifts from necessities to discretionary goods and lifestyle products. Rurban markets consumption is increasing tremendously and as these markets are on a growth conundrum, understanding consumer behavior of these small towns becomes imminent and also a challenging task. Hence, there is a need to study these Rurban markets at the backdrop of future growth prospects for the new India.

Key words: *Rurban Market, consumption pattern, Discretionary goods*

Introduction

Rural market involves the process of developing, pricing, promoting, distributing the product or service which leads to exchange of the product and service from urban market to rural market which satisfies consumer demand so as to achieve organizational objectives.

Figure: 1



Urban to Rural (U 2 R): A major part of rural marketing falls into this category. It includes the transactions of urban marketers who sell their goods and services in rural areas, like pesticides, fertilizers, seeds, FMCG products, tractors, bicycles, consumer durables etc.

Rural to Urban (R 2 U): Transactions in this category basically fall under agricultural marketing where a rural producer seeks to sell his produce in an urban market, like seeds, fruits and vegetables, milk and related products, forest produce, spices etc.

Rural to Rural (R 2 R): This includes the activities that take place between two villages in close proximity to each other, like agricultural tools, handicrafts and bullock carts, dress materials etc.

Though the rural market in India contributes to 70% of India's population, 56% of income, 64% of expenditure and 33% of savings; it is not the large homogeneous mass of popular presumptions. Not much can be aggregated except that it is most definitely, a vast untapped market that amounts to 12% of the world's population, contributes to 50% of India's GDP and 17% + market growth.

It is also interesting to note that 54% of the Rural GDP is from non-agricultural occupations. The affluent group in rural India is close to that in Urban India. There are 1.7 million households who already own a TV, Computer / Laptop, Telephone / Mobile Phone and Scooter/Car and in fact the monthly per capita expenditure is growing at a faster rate than urban markets.

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Characteristics of Rurban Towns

- A minimum population of 5,000.
- At least 75 per cent of male working population engaged in non-agricultural pursuits.
- A density of population of at least 400 per sq. km. (1,000 per sq. mile).

Importance of rural markets: People visit these towns very often to fulfill their purchase requirements. These people give scope for influential touch points like

- Colleges
- Schools
- Government Establishments
- Highly Networked Apartments
- Residential colonies
- Clubs
- Door to door campaigns

Furthermore, It's not about the size, it's about the location. Villages/Small Towns are relatively homogenous; but there exist, unique regional/state-level differences. What applies for one part of the country or one set of consumers may not at all be relevant to a few thousand kilometres down the road. Hence regional serving of markets is critical in the context of product design, distribution, and communication as well as servicing.

For rural India, the community is the pivot. Hence, it is important to develop local eco-systems to serve the market. Relationship and trust are key drivers of awareness and purchase as well as it is essential for marketers to actively engage and build relationships.

Another important reality of small town and rural markets is they are lagging behind in terms of financial inclusion – it needs to be nurtured into their lives through innovative ideas. The rural consumer has a critical need for rural consumer friendly 'financing' options – which focus on the ease of financing rather than the creation of debt.

Finally, the development of the local eco-system is critical to realising the full potential of the market, it is imperative for businesses to focus energies on community, institutional and infrastructural development in India's villages. There is still work to be done here and is critical to opening up of the market potential of small town & rural India.

Literature survey

Accenture report (2013) Selling profitably to rural consumers - The rural economy has rapidly transformed in the last decade and is now being led by manufacturing. Indeed, agriculture accounts for only about one-fourth of rural GDP compared to half a decade ago. About 55 percent of manufacturing share of GDP is rural; nearly 75 percent of new factories built in the last decade are from rural areas, and rural factories account for 70 percent of all new manufacturing jobs. Industrial development in rural India has increased household purchasing power and income stability. Rural India accounts for about 50 percent of India's GDP and nearly 70 percent of India's population. This paper also identifies the pros and cons of different models of rural markets.

Accenture report (2010) Masters of Rural Markets: The Hall Marks of High Performance - India's rural markets present growth opportunities which cannot be ignored by companies seeking to become high performance businesses. But the size and scale of those markets (three-fourths of the country's approximately 1.1 billion people live in villages) have been offset by concerns about the profitability of these markets and the durability of rural demand. Now, though, there is abundant evidence to indicate that businesses are seeing more promise in India's hinterland. There are several strong regional and macroeconomic reasons for greater confidence. And, there is a growing amount of statistical data to demonstrate that rural markets, fueled in part by rising purchasing power, hold real prospects for profitable growth across a wide range of industry sectors.

Accenture report on Touch points to trust points-winning over India's rural consumers (2014) -The Indian consumers in rural areas can be categorized into four -they are traditionalists, steady climbers, young enthusiasts, village elites. These consumers are categorized based on the brand switching behaviour, buying pattern, education, buyer values. Despite having identified these categories companies still have a great task ahead to explore the depth of rural markets. This research helps to identify the business potential as well as to find the opportunities and way forward for companies.

Objective

To understand the business potential of rural small towns and demonstrate opportunities that exists for companies in rural markets.

Research methodology

This research study involved is descriptive in nature. The primary data was collected by conducting survey and Interviewing the respondents. The secondary data was collected from Internet, Magazines, Reference Books and Newspapers. Interview and Questionnaire were the tools used to collect data from respondents from rural small towns in Krishna district, West Godavari and Guntur district areas. Non-probability convenience method was used for determining the business potential of rural small towns.

Sample Design

The sample comprised respondents from Coastal Andhra. All the respondents were first surveyed, interviewed and asked various questions pertaining to the understanding the potential of rural markets consumption of rural products. The analysis was collated into a finally determining findings, conclusion and inferences.

Sample size

The sample consisted of 50 respondents who were interested in giving information pertaining to the study. The sample was randomly drawn. The selection of the respondents was done on the basis of “Non- Probability - Convenience sampling”.

Key Variables used for the study

As a part of analysis the variables used for the purpose of study were: demographics and clusters of rural small towns, consumer perception about different products, measuring the growth of rural small towns in 10 years, capturing the driving force of rural small towns, occupation patterns in rural small towns, technology penetration, work force migration from nearby villages in rural small towns and touch points in small towns for rural marketing.

Data presentation & findings

As there is no such popular model or technique available for this type of research study under taken the data presentation has been done using Pie-Charts.

Demographics of rural small towns:

Types of business: The businesses that are observed in rural small towns are Bakeries, Hotels, Kirana stores, Hardware shops, Vegetable store, Mobile store, Photocopy shops, Automobile shops, Super markets, Internet cafes, Auto stands and Electrical shops.

Income Sources: The income sources in rural small towns are agriculture and business

Haats: Haats are the weekly bazaars which serve the people with several household products and vegetables. Haats are most commonly seen in the rural small towns.

Source of entertainment: The main source of entertainment for the people in rural small towns is television, Cinema halls and usage of smart phones devices.

Rural OOH: The rural Out Of Home activity is an ongoing process in rural small towns. Many companies have been involved in OOH activities like CEAT, Varun Motors, Honda and Volkswagen.

Institutions: Primary and secondary education is available in schools. The education in colleges is available from intermediate level to graduation level.

Houses of Prayer: There are several temples in small towns such as Churches, Mosques, Kanakadurga temple, Vinayaka temple, Saibaba temple and Sivalayam.

Clusters of small towns:

Popular Business Models:

The popular business models found in small towns are general stores, mobile shops, hotels, Photocopy shops, Vegetable and fruit shops.

TOWN	POPULATION	INSTITUTIONS	TEMPLES
Tangellamudi	<10000	Saint Junior College, Nova Engineering College	Kanakadurga temple, Saibaba temple
Satrapadu	<10000	Siddhartha Junior College, Gowtham Concept School	Kanakadurga temple, Vigneswara temple
Tadigadapa	10000-30000	Govt. Polytechnic College, Sri Chaitanya Junior College	Sivalayam, Ramalayam
Yenamalakuduru	30000-50000	Chaitanya e-techno school, Narayana Junior College	Ramalingeswara temple, Saibaba temple
Tadepalle	50000-100000	Government Junior College, Sri Vidya Nikethan	Anjaneya Swamy temple, Ramalayam,

Table:1 Demographics of rural small towns

Business Clusters:

A **business cluster** is a geographic concentration of interconnected businesses, suppliers, and associated institutions in a particular field. Clusters are considered to increase the productivity with which companies can compete, nationally and globally. The business clusters that are identified in small towns are Ambica darbar bhathi manufacturing, Kwaliti_walls ice cream factory, Jute mills, tile shops and hardware shops.

The rural small towns have had a dramatic shift in past decade in the terms of social, economic and infrastructure. The social change observed is education, changing aspirations, changing life style and differences in gender, caste have reduced the gap in society. The economic change is due to rising wages and working of both husband and wife. There is a drastic change in terms of infrastructure such as roads, buildings and highly networked apartments.

The transformation of small towns is because of the development in real estate, national highway development and communication services. The transportation development happened because of growing number of people moving away from rickshaws to by autos, buses, bikes and cars. The rising wages and employment opportunities are dramatically changing the family income. The women folks are supporting their families by working and earning in many ways.

Occupation pattern in small towns:

The occupation pattern of small town residents is from farming of paddy, black gram, turmeric, corn, sugarcane and vegetables. Most of the small town residents are involved in the same ancestral occupation but are involved in doing business innovatively and practicing new techniques for agricultural farming. On an average 70% of the small town residents prefer other sectors over agriculture and remaining 30% of them are involved in agri based occupations. The most preferred sectors of occupation people is towards real estate.

Evolution & growth of retail in small towns:

Most of the customers of rural small towns prefer brands over local products and they are brand conscious.



There are no branded outlets present or exclusive business outlets in these small towns. There are no shopping malls which are more popular in the small town. People travel to far off towns for making a purchase from the nearby cities.

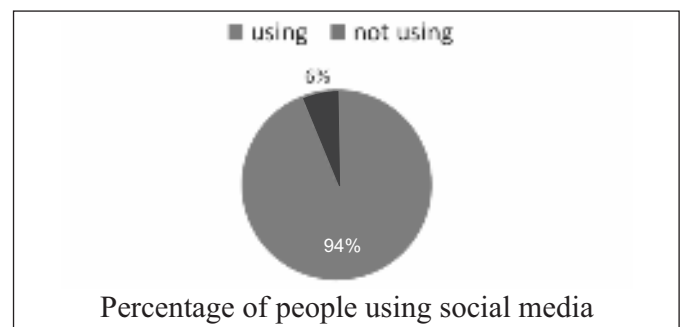
The people are interested in going to shopping malls. Rising awareness, changing preferences and exposure available in shopping mall is making rural folks to go to shopping malls and prefer malls over traditional retailers.

Youth in the rural small towns have of late started buying the products through online medium.

Technology penetration in rural small towns:

The smart phone penetration is very deep in the rural small towns. Almost all the youth are using smart phones in rural small towns. Only 10 % of the respondents are not using smart phones.

94% of the respondents are using social media and remaining 6% of the respondents are not using social media.

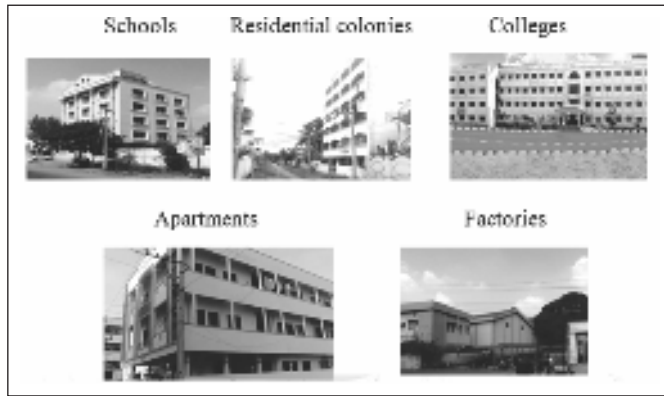


Almost every house is having the DTH/ TV connections in the rural small towns.

The changing aspirations, rise of awareness, education and connection to cities is making the small town youth to imitate the life style of metros.

Identification of touch points in rural small towns for rural marketing:

There are several touch points in rural small towns for marketing. Some of them are schools, colleges, factories, residential colonies, auto stands and markets.



Conclusion:

Therefore it gives us reasons for believing that there is immense growth and potential for rural marketers. The new trend in rural consumption is making way to the companies for new products and ideas. The rural market consumption is indicative of brands and product being used as part of daily lifestyle. Majority of the branded products which are consumed didn't have presence in the rural and small town markets. If companies could set up the service centers and have company owned/operated outlets the consumption pattern of such brands could scale better in the future so as to aid the marketers to penetrate deeper rural arenas.

References:

1. Accenture Research Report (2010) Masters of rural markets: The Hallmarks of High Performance.
2. Accenture Research Report (2013) Masters of rural market: Profitably selling to India's rural consumers.
3. Accenture Research Report (2014). Touch points to trust points : winning over India's rural consumers.
4. Devesh Kapur (2014). Understanding mandis: market towns and the dynamics of India's rural and urban transformations
5. Dr. S.S. Shanthakumari Mr. P. Kannan (2010). Dissimilar of customer perception and expectation among rural and urban markets by journal of contemporary research in management April-June.
6. Dr. Ashfaque Ahmed (2013). Rural Marketing Strategies for Selling Products & Services: Issues & Challenges Volume 2, No.1, January.
7. Is India's Manufacturing Sector Moving Away From Cities? (April 2012) Ejaz Ghani, Arti Grover Go swami and William R. Kerr

8. Ibef.org rural markets
9. Kavitha T.C (2012) .A Comparative Study of Growth, Challenges and Opportunities in FMCG of Rural Market. Volume-2, Issue- 3, 2012
10. Nielsen Report (2012) Emerging consumer Demand- Rise of the small India towns
11. Nielsen Report (2014) the rise of India's rural consumer.
12. Nielsen Distribution Dynamites (2012) Categories waiting to explode in small-town India.
13. Pradeep Kashyap (2012) .Rural Marketing, 2nd edition
14. Sanal Kumar Velayudhan(2007).Rural Marketing targeting the non urban consumer.2n Ed.
15. Venukumar.G (2012). Growth of Indian rural market: with reference to FMCG sector volume 2, issue 2. February.

Ants never quit





Have you noticed how ants always look for a way around an obstacle? Put your finger in an ant's path and it will try and go around it, or over it. It will keep looking for a way out. It won't just stand there and stare. It won't give up and go back. This reminds me of a motivational story which I read in some blog. The story goes like this- One morning I wasted nearly an hour watching a tiny ant carry a huge feather across my back terrace. Several times it was confronted by obstacles in its path and after a momentary pause it would make the necessary detour. At one point the ant had to negotiate a crack in the concrete about 10mm wide. After brief contemplation the ant laid the feather over the crack, walked across it and picked up the feather on the other side then continued on its way. I was fascinated by the ingenuity of this ant. It served to reinforce the miracle of creation. Here was a minute insect, lacking in size yet equipped with a brain to reason, explore, discover and overcome. After some time the ant finally reached its destination – a flower bed at the end of the terrace and a small hole that was the entrance to its underground home. The ant had not thought the problem through before it began its epic journey and in the end the feather was nothing more than a burden. There will always be obstacles in our lives. The challenge is to keep trying, keep looking for alternative routes to get to our goals. Winston Churchill probably paraphrased the ant's mindset when he offered this priceless advice: 'Never give up. Never, never give up and convert "threat (feather)" into "opportunity".'

Ants can carry objects up to 20 times their own weight? Maybe we are like that too. We can carry burdens on our shoulders and manage workloads that are far, far heavier than we'd imagine. Next time something's bothering you and weighing you down, and you feel you just can't carry on, don't fret. Think of the little ant. And remember, you too can carry a lot more on your shoulders by increasing "threshold tolerance."

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