AN EMPIRICAL STUDY ON BOTTOM OF PYRAMID CUSTOMERS TOWARDS ADOPTION OF INNOVATION

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ABSTRACT

Over the years poor at Bottom of pyramid segment treated as one of the most unfortunate segment, with constraints of income, education, infrastructure etc. The present study tried to understand innovations for Bottom of Pyramid markets and their adoption with the help of a decade of research papers and systematically consolidate the findings. Researchers identified inclusive, reverse and jugaad innovations specifically used in literature pertaining to developing countries like India, Bangladesh, and South Africa. The research tried to draw future directions for marketers and academicians in the area of innovations and adoptions by income and resource constraint market i.e. Bottom of Pyramid.

Key words: Bottom of Pyramid, Innovation, Adoption, Barriers to Adoption.

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1. INTRODUCTION

Over the years poor at Bottom of pyramid segment treated as one of the most unfortunate segment (Habib, M., & Zurawicki, L., 2010) with constraints of income, education, infrastructure etc. UNDP also defined poverty (bottom of pyramid) as multidimensional wherein the segment has not only income constrained rather there is lack of other resources like education, sanitation, water, food, health and living standards. Bottom of Pyramid is a socio-economic phenomenon which helps companies and researchers to combine a segment of approximately four billion people. World’s poorest people constitute an invisible and
unserved market. BOP consists of world’s largest but poorest group who live with income less than $2.50 a day.

Prahalad & Hurt (2002) through their work had given directions to MNCs to work for unserved BoP markets with products/services specially meant for them, results in prospective rewards which not only include growth & profits, rather incalculable contributions to humankind. Organizations and academia can contribute to uplift the segment with innovations in different field; present study is an effort to understand adoption of innovation among Bottom of Pyramid segment.

1.1. Bottom of Pyramid Markets

Bottom of pyramid comprises of 1.05 billion people in India (5 out of 6 Indians) which is the majority part in India who live on an annual household income of less than INR 200,000 as of the year 2005. This is equivalent to less than INR 16,667 monthly household income which is not much amount.

By the year 2015, the size of the Bottom of Pyramid is projected to be 997 million which is still nearly 80% of the population in India. In urban India, where cost of living is higher, we consider Bottom of Pyramid to have an annual household income of less than INR 300,000 which is also not much. This is equivalent to less than INR 25,000 monthly household income.

In rural India, we consider Bottom of Pyramid to have an annual household income of less than INR 160,000. This is equivalent to less than INR 13,333 monthly household income. The impact both of these Bottom of Pyramid segments, which the research defines are as deprived poor and aspiring poor.

Deprived Poor

At the lowest level of the base of the bottom of pyramid are those living in abject poverty which is the lowest among all. The households in this segment of India’s Bottom of pyramid lack access to the most basic necessities, benefit from government welfare interventions, they have little or no disposable income, and can best be served by investments Unitus Seed Fund makes into startups improving livelihoods, such as Caravan Craft, whereby the Bottom of Pyramid benefit from increased income earnings. The report of McKinsey says households earning less than 90,000 rupees per year or less than 250 rupees per day are among this category.

Aspiring Poor

The aspiring poor are households which are earning between 90,000 to 200,000 rupees per year which is not much and actually very less. These households lack access to many basic necessities as well as quality sanitation, healthcare, and education. Many huge opportunities exist to provide affordable life-changing services to this segment Aspiring Poor of the Bottom of pyramid, because they have more disposable income and twice the aggregate consumption of the extremely poor.

On average, it was found by NSSO that the income of an urban Indian household is almost twice as that of rural counterparts which is an important factor. To more accurately reflect the urban-rural BoP divide, we define Bottom of pyramid as less than 300,000 rupees per year for urban households and less than INR 160,000 per year for rural households which is based on the assumptions that urban households are 30.5% of the population and they earn 91% more than rural households.
2. INNOVATION FOR BOTTOM OF PYRAMID MARKETS

Bottom of Pyramid customers were always most ignored strata of consumers from marketers’ perspective, due to constraints i.e. low income and spending power, low literacy rates, susceptible to adopt new products and services. Different academicians and researchers tried to emphasize on the fact that products which have features like value for money, developed according to BoP needs will definitely overpower constraints. Bottom of Pyramid Customers is not stupid rather best financial managers who analyse (Hart, S. L, 2005) every single innovation before adoption. Rather than trickle-down approach where products first innovated for upper strata of customers and then slowly diffused among other strata, need is for reverse trickle-down. The Main aim of present research is to conduct the literature analysis related to Innovations specifically related to Bottom of Pyramid.

Innovation can be defined as, an introduction of a new product or service or modifications brought through an existing product or discovery of new markets, new processes or any other change. (Schumpeter, 1939) Innovation can also be defined as generation, acceptance, and implementation of new products, (Thompson V. A., 1965) hence for innovation not only generation of new product/service rather adoption is also an important criterion.

Several terminologies and types of Innovation has found in literature for Bottom of Pyramid markets. Hall, Matos and Martin (2014) proposed five types of innovation for BOP markets which includes BOP social innovations, Disruptive BOP innovations, Latecomer/Global Value Chain Capability, Sustainable Local Enterprise Networks and ideal BOP innovation. Further many researches have also been dedicated to Indian Bottom of Pyramid and Jugaad (Kumar, H., & Bhaduri, S., 2014) and reverse Innovation (Agnihotri A., 2015) most appropriate for chosen segment.

To uplift the conditions of poor, new products and services has to be develop for them (Foster & Heeks, 2013) pro poor innovations are Known as Inclusive Innovation, below-the-radar innovation’, ‘(bottom-of-the-pyramid) innovation’ and more (Horton, 2008; Kaplinsky et al, 2009; Joseph et al, 2011).The success of pro-poor innovations depends upon knowledge of gender, institutions and domestic conditions, informal setting can also help to bridge the gap and increase success ratio (Cozzens, S., & Sutz, J., 2014). Social entrepreneurs, Government, private players and other agencies (Chataway, J., Hanlin, R., & Kaplinsky, R., 2014) need to work in holistic and balanced manner to achieve growth at these markets. Bottom of pyramid customers can also be included in process as producers.

The main constraint of Bottom of Pyramid markets is money, hence affordability directed companies toward low cost high quality innovations (Tiwari, R., & Herstatt, C., 2012), Frugal innovation. Basu, R. R., Banerjee, P. M., & Sweeney, E. G. (2013) defined frugal innovation as the design process in which affordability, adaptability are core issues. Products and services are developed according to the need and context of people living developing countries. Frugal Innovation is difficult to adapt by companies from western orientation and developed countries, reason their products are targeted specifically for resource rich markets. (Zeschky, M. et al., 2011). Ten core competencies of frugal innovation include , Ruggedization, Lightweight, Mobile enabled solutions, Human centric designs, Simplification, New Distribution Model, Adaptation, Use of Local resources, Green Technologies and Affordability.

To include domestication in Innovation, researchers (Birchnell, T. 2011) coined term, jugaad innovation, which is also named as indovation it has specific meaning because of its origin in India. Researcher argued that Jugaad has a negative impact on resource constrained
societies i.e. rural and BoP markets. Radjou, N., Prabhu, J., & Ahuja, S. (2012). In their book *Jugaad innovation: Think frugal, be flexible, and generate breakthrough growth* defined *Jugaad* as doing more with less. *Jugaad* is a hindi word which means, “An innovative fix, a solution which had taken place due to scarcity of resources”. In their book authors quoted different Indian examples i.e. Miticool Refrigerators, use of missed calls by Indians.

Singh, R., Gupta, V., & Mondal, A. (2012) defined Jugaad Innovation as the type of Frugal innovation in which customers at BOP used it as a way of survival with minimum resources. They also refereed Jugaad innovation as,

“Innovations in products and/or processes, carried out by people to solve their immediate or long-term problems under a resource constrained (resources may include economic resource, time resource, human resource, any other resources or any combination of these resources) environment and often under hostile surroundings.”

Researchers highlighted different cases of Jugaad in facets of food, water, energy, health, street entrepreneurship and transportation. They suggested organizations need to put efforts on aforesaid areas to provide quality product and life to BoP.

Ramani, S. V., & Mukherjee, V. (2014) highlighted that in development stage there is no difference between BOP and non-BOP innovations. The biggest difference starts from diffusion of innovation where companies need to collaborate with NGOs, government agencies, micro-finance organization or some other nonprofit/non-government agencies. While similar kinds of arrangement are not required in non-BOP settings. In some cases organizations need to skill people from BOP segment to diffuse innovation or develop some new intermediaries. Researchers also had shown their concern about CSR driven innovation and suggests that organizations need to put efforts and finance in CS driven innovations which will result in welfare and value for society.

3. ADOPTION OF INNOVATION

Successful adoption in resource constrained markets depends upon consumer’s desire and his ability to pay for quality products tailored to their needs. Keeping this in mind Nakata & Weidner (2011) had given a contextualized model for new product adoption at Bottom of Pyramid Markets. The model implies that successful product acceptance depends upon product characteristics, social dynamics and marketing environment. These variables individually or together can be used to increase adoption among Bop customers. These variables also be named as visually comprehensible (product characteristic), Collective need (social Dynamics) employing atomistic distribution (marketing system).

Further for adoption of any Innovation product/service need to meet economic, social and emergency benefits criterion. Keeping these in view three indices had been developed namely Social Perceived benefit Index, Emergency Perceived Benefit Index and Economic Perceived Benefit Index. (De Silva, Ratnadiwakara, & Zainudeen, 2009). Before launching a product, organizations can evaluate them on above said criterions for better acceptance. Anderson and Markides, (2007) suggest that MNCs need to emphasize affordability, acceptability, availability and awareness to meet the needs of such markets.

While reviewing the literature total 34 research papers of 2007 from 2017 had been searched with key words Adoption of Innovation, Bottom of pyramid, adoption of Innovation among poor and studied, where we found that maximum research has been done in the areas of Information and communication technology related adoptions followed by mobile telephony and mobile banking.
Table 1: Criterion for Adoption of Innovation

<table>
<thead>
<tr>
<th>Criterion for Adoption of Innovation</th>
<th>Products/services</th>
<th>Geographical Area of study</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhance productivity of the individual in the terms of income</td>
<td>All</td>
<td>No country specification</td>
<td>Mendoza and Thelen ,2008</td>
</tr>
<tr>
<td>Creating the capacity to consume</td>
<td>Mobile Telephony</td>
<td>No country specification</td>
<td>Joshi, A. 2009</td>
</tr>
<tr>
<td>Visually comprehensible (product characteristic), Collective need (social Dynamics) Employing atomistic distribution (marketing system)</td>
<td>All</td>
<td>No country specification</td>
<td>Nakata &amp; Weidner 2011</td>
</tr>
<tr>
<td>Knowledge, Skills, Financial resources, Social networks</td>
<td>Toilets</td>
<td>India</td>
<td>Ramani, SadreGhazi and Duyster 2011</td>
</tr>
<tr>
<td>Psychological Comfort</td>
<td>Mobile Telephony</td>
<td>Bangladesh.</td>
<td>Dey, Binsardi, Prendergast and Saren 2013</td>
</tr>
<tr>
<td>Quality of Innovations</td>
<td>Mobile Telephony</td>
<td>Kenya</td>
<td>Foster C. (2014)</td>
</tr>
<tr>
<td>Perceived Health Hazard (PHH), Lack Of Ease of Service Accessibility, Lack of Service Quality And Lack of Transparency</td>
<td>Mobile Telephony</td>
<td>India</td>
<td>Gupta and Jain (2014)</td>
</tr>
<tr>
<td>Perceived Usefulness, Perceived Ease of Use, Perceived Social Influence, Perceived Acumen To Use, Perceived Value And Perceived Facilitating Conditions</td>
<td>More than Voice (MTV) services of Mobile</td>
<td>Bangladesh</td>
<td>Hossain &amp; Jamil (2015)</td>
</tr>
<tr>
<td>Infrastructure support i.e. NGOs</td>
<td>Mobile Banking</td>
<td>Pakistan</td>
<td>Kemal, A. A., &amp; Yan, L. (2015)</td>
</tr>
</tbody>
</table>

4. BARRIERS TO DIFFUSION OF INNOVATION AT BOP

Main barrier to adoption of Innovation among Bottom pyramid includes lack of awareness, education, Cost (Ismail, T., & Masinge, K., 2012). Problems related to distribution of products, lack of after sales services, government policies, entrepreneurial drive to sustain in market also serve as barrier for diffusion and adoption. Reasons of innovation failures can also include stemming from the demand side due to problems in expression of demand and its mismatch with the perceived value of the innovation (Ramani, Sadreghazi and Duyster,2011)
Innovation adoption in Bop is a difficult task because it demands for change in individual behavior, daily routines and sometimes social norms.

While understanding of technical terms specifically in case of mobile phones and banking also been considered as barrier, it is quite difficult that low education customers can understand technical terminology. (Dey, Binsardi, Prendergast and Saren, 2013). Barrier to innovation can be divided into following two factors:

4.1. Macro Environmental Factor
Macro environmental factors consist of social and power relationships, infrastructural facilities, social and occupational practices and institutional and communal support. There are many other macro factors like corruption, poor infrastructure, non-existent distribution channels, illiteracy, lack of robust and enforceable legal frameworks, religious or racial conflict, and sometimes even war or violent insurgencies in developing countries(Anderson, J., & Billou, N.,2007) which not only impede the success of innovation rather act as barrier to adoption also.

4.2. Individual Factor
Individual attributes consist of skills, trust, (Kansal P. 2016) knowledge, literacy, experience. Creativity (Dey et.al 2013) and individual intention and facilitating conditions. (Yu C. S.,2012)

5. CONCLUSIONS
Need of hour is Innovations for poor has to be introduced in the field of healthcare, food, education and water which not only will enhance their living conditions rather help to eradicate poverty.( Mendoza & Thelen ,2008). We explored different kind of innovations through literature for poor and factors impede the adoption of same, and find major research gaps and empirically summarize different criterion for adoption of innovation. The research tried to draw future directions for marketers and academicians in the area of innovations and adoptions by income and resource constraint market i.e. Bottom of Pyramid.

REFERENCES
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