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Contents

Job Expectations and Motivational Drivers for Millennials

Tannya Babbar* and Naga Venkatesh Devaguptapu**

Abstract

The Millennial Generation has garnered increasing attention as it constitutes the largest chunk of the workforce today. With different attitudes, values, beliefs and aspirations as compared to the previous generations, millennials need to be constantly motivated. Managers, researchers and leaders today are interested in understanding how to manage, retain and satisfy these employees.

It therefore becomes imperative to study their attributes, values and beliefs as they are relatively new to the workforce and need to adapt to the culture. Organizations need to put emphasis on transforming the work culture and environment for the benefit of these individuals.

The study aims to find out the job expectations and drivers for Millennials which make them go beyond the call of duty and keep them enthused.

Keywords: Millennial, expectation, generation, motivation, gratification

Overview

Millennials constitute the largest part of the workforce today. Thus, hiring and workforce planning need to be done in accordance with the interests of these individuals. Employers must ensure that management processes and policies are geared towards this segment of individuals. Efforts need to be made to engage them. Issues related to high attrition, recruiting, on-boarding must be addressed to retain them.

When Generation X entered the workforce, four generations began working together. The generations included Traditionalists who were born between 1922-1945; Baby Boomers born between 1946-1964; Generation X, born between 1965-1980; and Millennials, born between 1981-2000 (Campione, 2014; Cheeseman & Downey, 2012; Johnson & Lopes, 2008). Out of these generations, younger generations are increasingly in demand while seeking talent.

Who are millennials

The term 'millennial' is used quite often these days. It refers to individuals who are born between mid-1980s and 2000. As the term suggests, these individuals were born during the

Millennium period, a time of rapid change. The events that occurred during this period have shaped them in a radically different way in comparison to the previous generations. Millennial have grown up in a world which witnessed a major technology boom. Being the first generation to experience smart phones and internet, they have been recipients of a plethora of information. Widespread use of social media has led to dependency on technological platforms for expressing themselves.

This generation comes with instant gratification since everything is available at their fingertips. Be it ordering food from a far off place while sitting at home or connecting with someone across the world, these individuals have experienced the easy life.

Many of these individuals come from two-income households. To stay abreast in their children's life, parents provided constant encouragement and paid close attention to health, education and development. The "helicopter parents" have offered ceaseless advice and help to resolve their issues. The reliance on parents for the smallest of the things have led to under confident personalities.

To top this, they have been educated in a system which awarded not just the winners but also the participants. Extra pampering from parents as well as the education system have shaped them into individuals who require constant support and recognition. Their style of working, expectations from their jobs as well as motivational drivers need to be

studied in depth since most of them at the beginning of their careers and hence will be an essential engine for economic growth.

Why millennials matter

As millennials are entering the workforce, it is becoming increasingly important to understand the generational differences. Not knowing the expectations of Millennials who will dominate the workforce once Baby Boomers retires can detrimentally affect employee performance and satisfaction. Organizations should learn about the job satisfaction and organization commitment levels of employees

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as the generations merge and collaborate (Gibson, Greenwood, & Murphy, 2010; Kaifi et al., 2012). Being well versed with technology and highly skilled and educated, they come with plethora of information. They are well connected, collaborative and highly social individuals. Their use of communication technologies is creating both challenges and opportunities in the workplace (Johnson Controls, 2010).

They are known to be achievement focused and have a desire to excel and outshine goals and aspirations. This pushes them to seek new learning and growth opportunities (Kaifi et al., 2012; Kowske et al., 2010). They are team players and more tolerant as compared to the older generations (Kowske et al., 2010).

They are an important resource to the organization as they are more willing to put extra effort towards the success of an organization. Millennials are the most highly educated than any of the other generations and the education level continues to increase. They were brought up with the idea that education was the best way to get a job they have wanted and they seized onto this idea. Hence, they bring in new perspective and skills into the organization.

Organizations can reap benefits by hiring the driven and achievement focused millennials. In turn, they need to provide career enhancing opportunities and constant feedback.

Job Expectations

Millennials shop for jobs which best align not just their life goals but also their needs. At the earlier stages in their career, they look at their job as a growth opportunity and a stepping stone for future prospects. They need to be convinced how the organization will help in learning, growth and development.

They prefer a flexible work environment with less rules and regulations to guide their decisions Kaifi et al. 2012).

Organizations need to know and work on the factors that are crucial for millennials while selecting a job. As compared to baby boomers, millennials have a different approach towards work with a different set of expectations when they enter the workforce. Millennials demonstrate themselves to be more qualified than ever and are becoming the highest performing workforce in history (Helyer & Lee, 2012).

Literature review/ Theoretical framework

Millennials are at the early stage of their careers and it is important to know their outlook towards their work. They view work as an integral part of their life and not as a separate activity.

Although Millennials are still the youngest generation currently in the workforce, they continue to have greater roles within companies, and more members of this generation are continuing to enter the workforce. They have shown a preference for working in groups and the ability to multitask. They are able to quickly and effectively complete tasks through digital communications. (Cekada, 2012; Roberts et al., 2012).

They are more technologically sound than the older generations with the vast majority of millennials being more comfortable with technology that other generations in the workforce. communication and making decisions though laptops and cell phones is easy for them. (Cekada, 2012; Alexander & Sysko, 2013).

They want to work in an environment where they can stay connected while multitasking with technology (Bolton, 2013).

They come with extremely different skills, needs and expectations as compared to the previous generations. (Schawbel, 2013).

They are more confident when they get feedback on their performance and are able to meet job expectations. Though they are task focused, they need clarity in their roles in order to understand expectations (Campione, 2014).

Generational theory and psychological contracts theory were applied as the theoretical frameworks for this study.

Conceptual Theories

*Psychological Contract Theory***:** This theory states that employees have perceived unwritten promises from the organizations. These promises may be direct or indirect and may be related to factors such as training and promotion (Zagenczyk et al., 2011). When employee and employer find their relationship mutually beneficial due to these perceived promises, that is when employee decides to enter into an

employment relationship (Conway & Coyle-Shapiro, 2011). Employees have high willingness and motivation to complete their work tasks in exchange for perceived promises. Many a times psychological contracts are not formal, hence, company leaders aren't completely aware about employees' expectations. There are two dimensions to these contracts. Relational dimension consists of professional development, fair treatment, job security, training etc. Transactional dimension has aspects like compensation and working conditions. Breach of a contract makes employees feel that company doesn't value their work. This can have a negative impact on employee's perception about the company (Zagenczyk et al., 2011). Employees feel demotivated and contribute less towards an organization's success when they feel that their incentives are less. (McDermott et al., 2013). To have a positive relationship with the employee, organization should ensure that emphasis is given on work life balance. This enhances behavioral performance and leads to higher motivation and productivity (McDermott et al., 2013)

Generational Theory: This theory is applied to predict attitudes and behaviors of generations. Researchers can use it to forecast expectations of the younger generation throughout their career (Strauss & Howe, 1991; Fenich, Scott-Halsell, & Hashimoto, 2012).

This theory takes into consideration only those individuals who are a part of the affected group which in no way are similar to familial generations. Individuals within age groups are alike when they go through stages i.e. birth, school, workforce, marriage and retirement. Similarities also exist in social changes, technological events occurring in society These events lead to cohesiveness in values, opinions, and life experiences (Gentry, Griggs, Deal, Mondore, & Cox, 2011; Joshi, Dencker, & Franz, 2011). Though not all individuals of each generation have similar features, some characteristics are conclusive in determining general assumptions (Lub et al., 2012; Balda & Mora, 2014). Beliefs and values of a particular generation are shaped according to the events witnessed during the growing years. The younger generation holds different beliefs and values about workplace as compared to the older generations (Vue, 2015).

Traditional Generation: These individuals were born between 1922 and 1945 (Johnson & Lopes, 2008). Many of them have encountered hardships along with their close ones (Cekada, 2012). Hence, employees belonging to this generation have been working hard for a long time and are of the belief that they have a predicted career growth. They desire a stable environment with secure job and they respect authority (Srinivasan, 2012).

Baby Boomers: Born between 1945 and 1964, these individuals are considered hard working and ethic driven employees (Lub et al., 2012). They fight for the right things and thus are the initiators of equality for all (Espinoza et al., 2010). Employees of this generation value authority and chain of command and are technologically challenged to some extent. (Taylor, 2014).

Generation X: Gen X employees are oriented towards problem solving and multitasking and want an environment where rules can be resisted (Cekada, 2012; Roberts, Newman, & Schwartzstein, 2012). This generation belongs to the early years of technology with members born between 1965 and 1980 (Caraher, 2015).

The Millennial Generation: This generation is the youngest in the workforce. A large number of individuals of this generation continue to enter into employment. The most educated and technology savvy generation prefers working in groups and has the capability to multitask. They were born between 1981 and 2000 (Cekada, 2012; Roberts et al., 2012)

Generation Gap

The various generations with details have been recognized which has led to identification of generation gap. Each generation has played a role in formation of the subsequent generations. this is due to the varied values passed on to each generation by the elders.

Society has moved along the hierarchy of needs as generations have come and gone.

Maslow' hierarchy has stated how people progress from desiring basic needs such as water and food to other levels (Maslow & Lewis, 1987). Today, the need for food and water is taken for granted because of easy accessibility. Previous generations have focused more on the lower levels and worked hard to meet these needs. Each generation applies value to different things and has different expectations and goals. Traditionalists were financially conservative (Beekman, 2011). They were cautious and set and

obeyed rules which had an impact on the way adults and children interact (Wong, Gardiner, Lang, & Coulon, 2008; Beekman, 2011).

Parents of Generation X also planned every step of Generation Y's life (Wong, Gardiner, Lang, & Coulon, 2008). Since most of them were working, Generation X parents became too involved with their children. They wanted to ensure that their children understood how much they care for them even though they were working.

Until many years ago, people used to grow, live and die in the same geographical location. However, with the advent of the cars, trains, aircraft, and now Internet, people are more spread out than ever before. Hence, today's generation is exposed diverse people and they tend to pick friends who are most like them (Groeger, 2011). They are focused on building relationships and becoming independent.

Technology, social media and access to places across the world have exposed Millennials to things unheard of by previous generations.

Media has also changed the thinking of people. Today people are able to juggle between different things. One can watch television while checking Facebook, read report while listening to radio etc. The person is able to create a block in one thing while being focusses on the other.

Methodology

Objective

The purpose of this qualitative phenomenological study is to explore the expectations and drivers of motivation of millennials.

Sample

The participants in this study consisted of millennials between the age group of 21 and 29. Convenience sampling was conducted since it is a useful way of gathering data and information that would not have been possible using probability sampling techniques, which require more formal access to lists of populations.

Technique

The research survey was designed to gather information

on views and opinions of millennials and their expectations from organizations. A total of 60 people belonging to different age groups with distinctive number of work experience and qualifications were surveyed. Participants are asked to select their response to each of the statements using either a 5-point scale or a 4-point scale. A common Likert scale couldn't be used for all the questions since each question required a different approach of answering.

Research Questions

1. What are the most important motivation drivers at work for millennials?
2. What can employers do to keep millennials engaged at workplace?
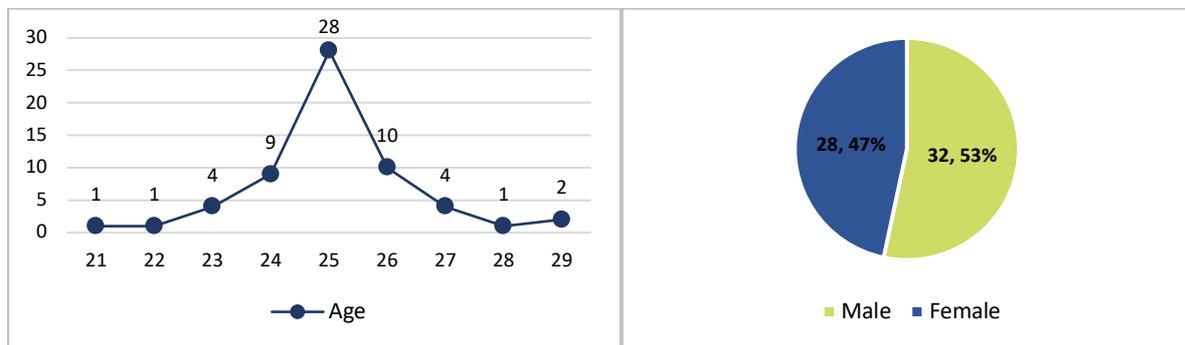
Respondent Demographics

Figure 1: Ages of the participants   **Figure 2:** Gender ratio of the study

As given in **Figure 1**, majority of the respondents surveyed were 25 years old. Number of females and males were almost equal as seen in **Figure 2**, thereby bringing in more authenticity to the survey.

Figure 3: Educational attainment   **Figure 4:** Types of organizations

The survey captured a highly educated portion of the population with 55% respondents holding bachelor's degree or higher and 45% having Master's degree as seen in **Figure 3**.

The respondents belonged to different kinds of organizations – Start-up, MNC, Entrepreneurship and mid-sized firm as demonstrated in **Figure 4**.
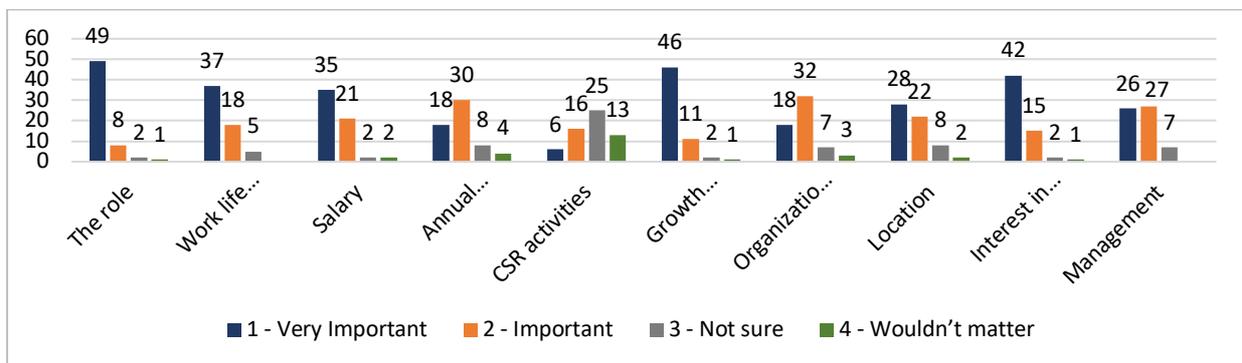

Figure 5: Factors considered before taking up a job

As explained in **Figure 5**, the respondents were asked to rate the factors they consider important before taking up a job, on a scale of 1 to 4 with 1 being **Very Important** and 4 being **Wouldn't Matter** as provided in the legend of the chart. For 81.67% (49) of the sample, role is of utmost importance and for 76.67%(46) and 70%(42) of the respondents, growth opportunity and interest in field of work respectively matter the most. Work life balance also came out to be an important factor for choosing a job. Surprisingly, not just women but men also require work life balance. 18 women and 19 men ranked work life balance as a significant factor. Although salary is considered significant, but other factors rank higher. These factors are essential for employers to take into consideration when creating a job role for the young professionals. Millennials are curious to pick new skills and excel. Providing training opportunities is a great way to address skill gaps and help employees grow and develop. It is also a way to see where employees excel and where more training is required. Training and mentoring are highly valued as it not only satisfies the need to develop skills but creates greater job satisfaction (Hauw and Vos 2010). They leave organizations where they don't see opportunities for growth. Most of the times opportunities exist but the younger generation isn't aware about them. It is important to show them the potential career paths within the company and help them understand the steps needed to get there. It is equally important to provide feedback to track their progress. They prefer meaningful work over well paid work. Though salary is important, work that has meaning is rated higher in importance than compensation(Hauw & Vos 2010). These Millennials have expressed interest in having work life balance and flexible arrangements. Younger generations place equal emphasis on personal and professional life (Ehrhart, Mayer, and Ziegert 2012). One of the reasons for job dissatisfaction is the conflict between employees' work-life balance expectations and how management is perceived to support them in this area (Gilley, Hall, Jackson & Gilley, 2015).
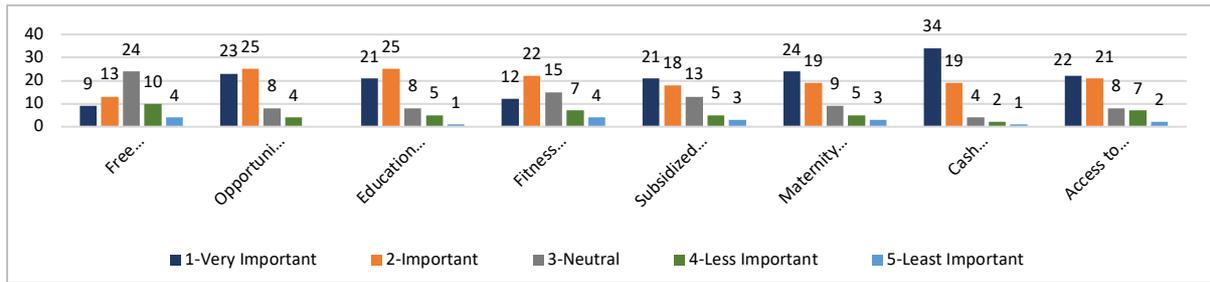
Figure 6: Benefits valued most from an employer

As seen in **Figure 6**, more than 50% people chose cash bonuses, around 40% opted for maternity/paternity benefits and opportunities for travel. An important takeaway for employers is that rewards for high performance might be better received if given in the form of cash bonuses. Also, employees expect to travel and enjoy the experience than just sit in one place and work. Benefits can be used for attracting and retaining Millennials as they are risk averse and think differently than previous generations (Howe, 2014).
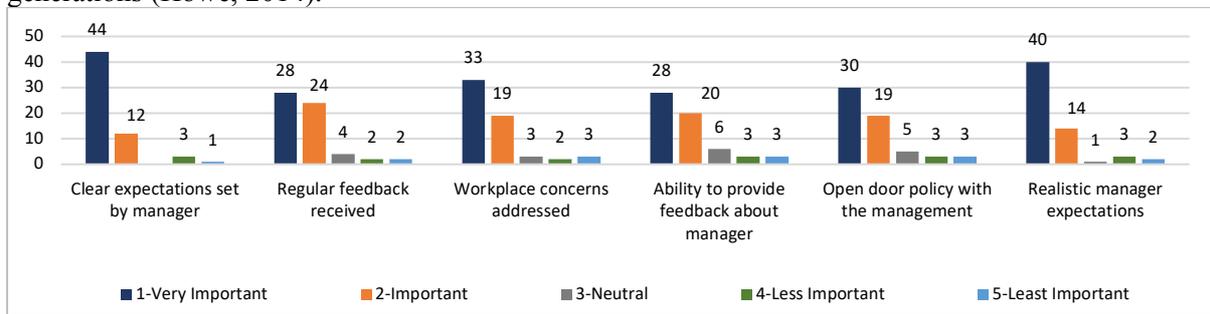
Figure 7: The important managerial factors

The respondents were asked to rank on a scale of 1 – 5 (1 being **very important** and 5 being the **least important**), the important managerial factors as displayed in **Figure 7**. Millennials' commitment to their roles increases when they are aware of their tasks. This is possible only when managers set clear and realistic expectations from their team members. Millennials are motivated to work when managers clearly define roles and responsibilities and address their concerns. They are also driven when management is approachable.

Millennials have a hard time dealing with ambiguity and require a clear path to success with well-defined expectations and constant feedback from their managers (Myer & Sadaghiani, 2010; Gursoy et al, 2008). They desire open communication and detailed directions and respond best when communication is without hidden agendas. They expect frequent communication to understand how they can progress in their career (Ferri-Reed, 2014a).

Since childhood, millennials are constantly given feedback and positive reinforcement. Hence, they expect the same from their managers. Repeated meetings for feedback help address their problems and make them more receptive to critiques.
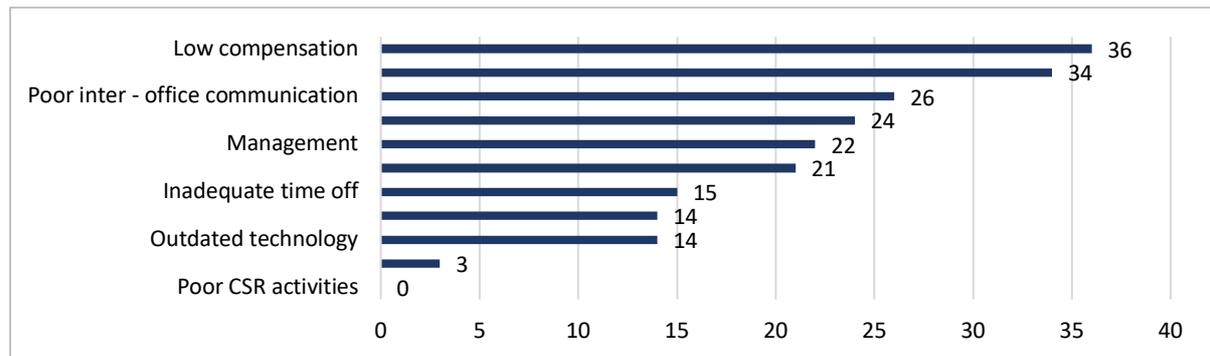
Figure 8: Frustrating job factors

Respondents were asked to choose the three most frustrating job factors out of the factors depicted in Figure 8. When employees are frustrated, it is easier for another organization to hire them. This impacts the reputation of the organization within the community it operates in, thereby making it tough to hire new talent. Survey results show that apart of low compensation, lack of growth opportunities, poor inter office communication and overwork are some of the factors that leave them frustrated. Communication styles of millennials are different from the other generations. They are mostly dependent on electronic communication like email or text (Goudreau, J, 2013). Poor communication can result in misunderstandings about expectations, relationships with co-workers etc. It has been stated that apart from these factors, there are many other factors which cause dissatisfaction amongst millennials. They wouldn't want to settle for a company which doesn't have a good work atmosphere and culture. Millennials want to be mentored, collaborate with others and be involved in open communication while being able to work with latest office technologies. (Sujansky & Ferri-Reed, 2009). They are team oriented because they got opportunities to be involved in activities during school and college.

Millennials do not believe in the traditional structures of authority. They don't respond to rigid policies and protocols due to their permissive upbringing. They want their managers to be approachable and encouraging. They are driven and hungry to grow in their careers. They want to receive feedback regularly so that they can improve and achieve career goals quickly. They aspire to have an understanding of what is expected out of them. Having a clear picture of their responsibilities helps them focus and prioritize their tasks at work. They consider communication a constant need-to-know to fulfill their responsibilities. Periodic check ins compel accountability and help both managers and employees stay on track.

Effective communication leads to success of employee as well as the employer (Hartman and McCambridge, 2011). Since childhood, millennials are constantly given feedback and positive reinforcement. Hence, they expect the same from their managers. Repeated meetings for feedback help address their problems and make them more receptive to critiques. This presents a problem as the different generations find themselves living and working together with a requirement to communicate and understand one another. The vastly dissimilar generational differences however present a problem with this communication and results in a lack of communication, or a misunderstanding of that communication (Venter, 2016). This can lead to disruptions in the work environment which could decrease productivity.

Maslow's Hierarchy

Maslow's hierarchy of needs describes how people first satisfy their basic needs such as food and water and then move to fulfilling safety needs and so on (Maslow & Lewis, 1987). As the generations have come and gone, people have moved along this hierarchy. Many of these people have moved beyond the physiological needs. The need for food, water and such are taken for granted because they are readily available.

Millennials are focused on becoming independent, and begin looking into the future in terms of careers, relationships, and building those relationships (McLeod S. A., 2013). This is the stage that most millennials fall in currently. While Maslow's hierarchy is still a part of the growth and development of the Millennials, a new hierarchy has also developed as technology has increased. New needs theories have been presented to include the use of this technology. For the most part, they flow the same way and have approximately the same number of levels as Maslow's Hierarchy of Needs, but incorporate how online social needs are meet (Gerstein, 2014).

Having the basic needs, security, relations almost fulfilled, the younger generations tend to look for Esteem and Self Actualization. Hence, a decent pay check with lack of professional development and growth will demotivate them to work in the organization. Organizations with poor middle management and infrastructure may find it difficult to retain employees.

Instant Gratification

Millennials have grown up in a society where everything has been available at their fingertips.

The long waiting hours in queues for purchasing anything have been reduced to few seconds with the help of global giants like Amazon, Flipkart, Myntra etc. From groceries to clothes, everything is available with a click of a button. One can even get furnishings for the house while sitting anywhere in the world.

After a hectic day at work, there is no need to cook since the favorite food can get delivered with just a phone call. These people can sit on the couch and choose from thousands of titles to binge watch for the night.

A device which is the size of our palm now takes care of everything in just a few minutes, virtually. This ease of life has impacted the society. The need for instant gratification is high. Due to this, millennials don't understand what it means to wait. They are impatient and seek immediate results.

Social media has made matters worse. It is become a place to promote and express oneself, whether true or not. It is become simple to see what others are doing in their lives. Whether a friend has gone travelling or has quit his/her job or has been promoted, the information is readily available on their social media accounts. This leads to comparisons. The comparisons may well be with the photoshopped versions the network uploads on the feeds. Higher visibility to others' success drives these young people to pursue success and personal growth faster as compared to previous generations.

Technologies have made life easier and made things more convenient, but this has come at a cost. The younger generation has lost the ability to wait for results. It is easy to access anyone at any point in the day though a text or a call. The millennials actually get upset when the person they are texting or calling doesn't right respond right away.

Limitations

A sample of 60 people was studied. Those members of Millennial generation who are still in school and have not entered workforce couldn't be represented. It is difficult to find out if the participant presented a biased view while responding to the questions. Hence, thorough secondary research was done to support the primary data.

Conclusion

Organizations should promote a team based work environment which ensures flexibility and grants work life balance to its employees. Flexible work arrangements can include flexible start and end times, telecommuting and working from home.

By creating work and roles that matters to the individuals, the Millennial employee can identify better with the organization. By connecting responsibilities with the mission and ensuring that employees play a part in fulfilling the company's vision, organizations can create meaningful jobs.

The younger generation should be given meaningful assignments, technology and career advancements to retain the employees. Through benefits and perks, the Millennial employees' needs are addressed.

Through multiple interactions, managers can find out values and priorities of this young generation.

Making a room for on the job training and skill building enables millennials to be more focused and motivated. They are more engaged and get engrossed in the culture when they are aware of development opportunities.

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Financial literacy and Financial Inclusion of Working Women Living in the Slums of Faridabad

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Abstract

Financial inclusion has invited a lot of attention in India since independence. The concern with making banking facilities available in rural areas led to the nationalisation of the Sate Bank of India in 1955 and further social control of banking and large scale taking over of the financial services by the government in 1969 and 1980 were also aimed at providing banking services to the neglected sections. Unfortunately, India still scores very low on overall financial inclusion. The present study is an attempt to look at and analyse the financial literacy and inclusion of working women living in the slums of Faridabad, an industrial town of Haryana with a large slum population. The study found out that women working in the unorganised sector and staying in slums have a number of issues related to financial inclusion right from low income and low literacy to lack of easy access to banking facilities and men's control over financial matters in the families.

Key Words: Financial inclusion, financial literacy, urban slums

Introduction

The economic development of any nation is inextricably linked to the availability of and access to financial resources and services. Economic as well as social inclusion remains elusive in the absence of a healthy, vibrant and inclusive financial sector. Demand for various financial services and products by financially educated people and the consequent supply of an efficient and stable system by the providers is the crux of the issue of financial literacy and Inclusion which leads to the overall development of the country and the well-being of the people. In a developing country like India demand as well as supply side bottlenecks still exist in their severest form. The Rural Finance Access Survey conducted by NCAER found in 2005 that nearly 87 percent of poor households in India were without access to any formal credit and about 70 percent of the poor did not have any deposit account. Out of 6 lakh villages only 36,000 have been covered by the brick and mortar branch network (Chakrabarty, 2012). According to a report by 'The Economist', only 35 percent of adults have formal accounts in India (2013). In April 2014, TOI reported that nearly half the households in India out of a total 1.2 billion population are out of the ambit of the banking sector. Recently EPW reported that 90 percent of small businesses have no link with the formal financial sector (Mohan Ram, 2014).

All these facts reveal that even after 67 years of independence banking services could not be made accessible to those at the bottom of the pyramid at an easy and affordable cost. The rural people, the poor and the marginalised have somehow not been able to take advantage of the mainstream financial services. Under the social banking model and the targeted credit model, poor customers were treated as an unwanted target category and not as business customers. The issue has generated a great interest as for the last one decade the government has been harping on the theme of inclusive and faster growth. In this chapter, we are examining financial inclusion issues from the gender perspective. In particular, we are examing the extent of financial literacy and financial inclusion among working women living in the slums of Faridabad and analysing the relationship of financial literacy and financial inclusion, if any, with the kind of occupation women are in.

Definitions and Perspectives

The demand side constraints of financial inclusion are as critical as supply side constraints. In other words, we can say financial literacy is an important prerequisite for successful financial inclusion. If people either don't understand or they don't want to understand the basics of financial planning or, in other words, if they are financially illiterate or choose [forced to be so? Why would anyone 'choose' illiteracy?] to be so, they won't create demand for financial services and products. One part of the problem can be lack of awareness about financial services and products and the other can be attitudinal issues which make the poor careless about their lives and future. So we won't be able to understand financial inclusion unless we understand the dynamics of financial illiteracy. The urban poor living in

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slums are the most neglected segment as far as the provision of various economic and social service is concerned.

Slums are a breeding ground for squalor and poverty in urban areas to which people migrate in great numbers from villages in search of better employment opportunities and a better standard of living. Most of the people in slums work in the unorganised sector and their incomes are paltry.

The severity of the problem increases manifold if we talk about women living in the urban slums. Women have historically suffered on many counts not only in India but all over the world. Their suffering and disadvantage increases even more if they are poor, illiterate, migrant and work in the unorganised sector.

A slum for the purpose of census has been defined as a residential area where dwellings are unfit for human habitation because of dilapidation, overcrowding, faulty arrangements and design of such buildings, narrowness of streets, lack of ventilation, light or sanitation facilities or any combination of these factors which are detrimental to human safety and health (Census, 2011). A slum is a compact area of at least 300 population or about 60-70 households of poorly built congested tenements in an unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities (Census, 2011).

OECD definition for financial literacy is a "combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial well-being" (OECD, 2011). India is home to the maximum number of illiterates in the world as the track record of our country in providing general literacy to all is far from satisfactory. But the earlier researches have pointed out that even the illiterate have the sense to manage their money. It is a basic sense like sleep or hunger the understanding of which comes naturally to all (Joshi, 2013). At some basic level the statement might be true to some extent. But the circumstances of poor people are such that with meagre money at their disposal they remain absorbed in making both ends meet and don't easily realise the importance of small savings and can't think of any long term planning. That is why in this paper we wanted to anlayse the financial literacy of the poor women living in slums.

Financial Inclusion is the process of mainstream institutional players ensuring access to appropriate financial products and services needed by all sections of society in general and the vulnerable groups such as the weaker sections and low income groups in particular at an affordable cost in a fair and transparent manner (Chakrabarty, 2013). Financial inclusion implies inclusion of at least one member of each household in formal sector banking services through deposit account (Majumdar and Gupta, 2013). A rating agency, Crisil (2013), has given a financial inclusion index for all the districts of the country where it has defined financial inclusion as "the extent of access by all sections of the society to formal financial services, such as credit, deposit, insurance and pension services". Thus, summing up the whole debate, it can be said that including poor people in the formal financial system is a challenge for the government on both sides, on the supply side by way of providing adequate infrastructure and on the demand side by making people financially literate.

The whole gamut of financial literacy and financial inclusion becomes clear from the following figure:

Demand Side Factors	Supply Side Factors
Nature of employment	Availability of bank branches
Financial literacy	Credit facilities
Income level	Remittance facilities
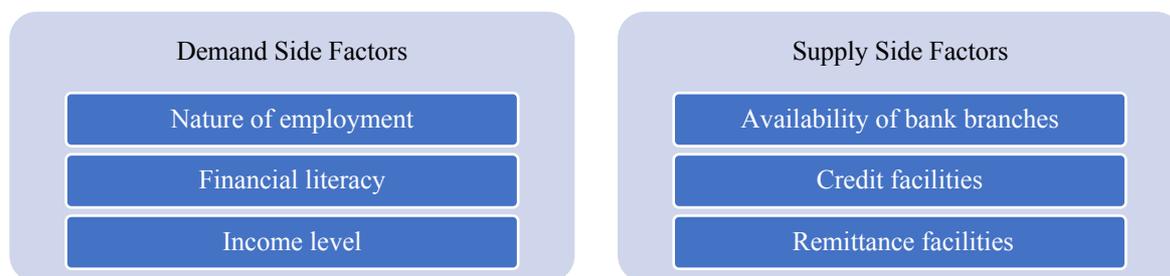
Figure1: Factors influencing financial literacy and inclusion

Studies about financial literacy and financial education have been conducted in many countries in the past. India has been rather late in starting such surveys and studies. According to Lusardi (2011), the financial literacy is an important tool for anyone who wants to be able to succeed in today's society, make sound financial decisions and, ultimately be a good citizen". Bhatia and Chatterjee (2010) cited the inadequate financial inclusion of the poor living in the slums of Mumbai. Though RBI has taken

various initiatives to include people in the mainstream, the reasons for financial exclusion are different for the rural poor compared to the urban poor. Non- existence of bank branches, physical distance, fixed and limited hours, lack of awareness and low income can be true for the rural poor but not for the urban poor. But a survey of 106 slum dwellers found that only 33percent had a bank account. And almost all of them had accounts either in the urban cooperative banks or public sector banks. They seemed to have more faith in the public sector banks. Only 47 percent of those having accounts were using them regularly. Only 6 percent knew about the rate of interest which they were getting on their deposits. Again, only 2 respondents i.e., 6 percent had taken loan from the banks and that too for consumption purposes. Other respondents lamented that they did not have any appropriate collateral to avail loan from the banks. Out of those who did not have an account with any bank, 20 percent were saving privately but 80 percent were neither saving nor had any desire to save. Based on this finding the study has reinforced the role of financial literacy for urban poor. Bihari (2010) in his study found that most of the no-frills accounts are inactive because of lack of financial literacy among the masses at the bottom of the pyramid. This study has stressed that through financial literacy consumers will not only become aware of the various products and services which are being offered by different institutions but can also make informed decisions. A financially educated customer can benefit the overall well- being of the economy. The study argued that prosperity for poor people will come by properly balancing the four key personal finance components i.e. earning, spending, saving and investing. To achieve this end, financial literacy is very important and should be made mandatory. Sachin Joseph (2011) opined that the limitations of traditional banking can be overcome by putting into practice innovative products, strategies and channels that have easy accessibility to and reach among those sections of the society which have hitherto been ignored by the formal banking system. It means leveraging technology for financial inclusion by using innovative methods such as Business Correspondent (BC) Model With Hand Held Devices, Hand Held Devices Operated through Smart Cards and Bio Metric Scanner, Mobile Banking, Information Technology - Telecom Platform, UID - (Unique Identification Number), Technological tie-up between Banks and Microfinance Institutions, ICT   (Information and Communication Technologies) for Rural Connectivity, Pre-printed Security Stickers and SMS Based Authentication on a real time basis, OMR Based Automated Form Processing System, Online Form Tracking System and Micro-Finance Institutions as Non Banking Financial Institutions. Cohen and Nelson (2011) in their paper have remarked that fifteen years ago the concept of financial inclusion would have meant only an institutional issue of portfolio growth but today the context has changed completely. Today the term is more centred on clients, encompassing both access, i.e., institutional responsibility, and use, i.e., the client's ability to choose and use the services properly. Financial education has been found to be important for both these overlapping concepts.

However, increased access and better choices do not automatically translate into effective use. Effective use is hampered by asymmetries of information and power between financial institutions and poor consumers, an imbalance which grows as customers are less experienced and the products they can choose get more sophisticated, an imbalance which holds real potential for negative outcomes due to institutional abuses or ill-informed client decisions. Financial education is an important tool to address this imbalance and help consumers both accept and use the products to which they increasingly have access. Because it can facilitate effective product use, financial education is critical to financial inclusion.

Financial literacy is important for clients as they can thus make the best possible choices for themselves and better informed clients can make a demand on institutions for providing good customer services, appropriate and transparent pricing and clear contracts. Financial education is the process of building knowledge, skills and attitudes to become financially literate. The authors have elaborated in their paper that the bottom of the pyramid is increasingly perceived as a new market by the commercial institutional players. And not only that, but the programmes aimed at improvements in health, agriculture and women empowerment also mix basic financial management in their services as financial stability is critical for the success of any socio- economic intervention for the poor.

Majumdar and Gupta (2013) have dwelt upon the poor performance of the scheme of 'no frill accounts' with zero minimum balance launched for the inclusion of the poor. They did their study in the Hooghly district of West Bengal in 2008 by looking at 20,753 households from 183 villages and 61 municipal

wards. The percentage of financial inclusion in the rural areas was 47.43 with the financially included being defined as a household having a bank account. Inclusion was higher at 69.19 percent in the urban areas. Variation in inclusion across rural and urban areas and across various municipalities was explained through differences in socio-economic and demographic variables. More main workers were found to be included in comparison to marginal workers. Scheduled castes, scheduled tribes and low income people were also found to be low on inclusion. A very high rank correlation of 0.72 was found between the percentage of Hindu population and financial inclusion whereas this value was smaller in the case of minority communities which brought to the limelight the work which still needs to be done for including the minorities. They concluded that the scheme of opening "no-frills accounts" has been largely unsuccessful in the financial inclusion of excluded categories such as the scheduled castes, scheduled tribes, Other Backward Classes and those who are less educated. The survey revealed that this scheme is ill-targeted and the benefits are reaped by the upper classes of society.

Aggarwalla, et al.(2013) made a study of young educated people in urban areas and made a comparison of financial literacy and inclusion in India with the results of a study conducted by OECD for 13 countries. In this study only 24 percent young working people exhibited high financial knowledge whereas in the OECD study the country lowest on financial knowledge was South Africa which had about 33 percent respondents having high financial knowledge. In the urban setting where this study was conducted gender emerged as an important variable influencing financial knowledge and behaviour with women showing inferior behaviour. One major finding of the study was that even graduate and post graduate degree did not translate into financial literacy as one third of the respondents could not perform even the simple numerical task of division. The authors have attributed it to lack of financial literacy in the general education process. They have relied on the parameters used by OECD to measure financial literacy. Not only knowledge about money management but also the right attitude and behaviour make a person financially literate. That is how they found even educated youth low on financial literacy.

They have made an attempt to analyse the inter linkages between three different dimensions of financial literacy i.e. Financial Knowledge, Behavior and Attitude. The correlation between financial knowledge and financial behaviour was positive and highly significant which indicated that adequate financial knowledge would lead to responsible financial behaviour. The correlation between financial knowledge and financial attitude was not different from zero, indicating that empirically they are two independent dimensions. The significant negative correlation between financial behaviour and financial attitude defied any easy explanation. It would appear that the professed sensible attitude towards money and finance was accompanied with poor financial behaviour on the part of the respondents. This indicates possible absence of self-control among respondents.

In 2013 Lahiri-Dutt conducted a longitudinal study of the poor living in river islands in deltaic Bengal. The study was conducted during 2002-2010. The authors made an in depth study of the lives of these people at the community and household level. Their main contention is that the concept of financial inclusion where all the informal sources of credit are considered as exploitative and linking people with formal sources seems to be the only panacea is basically faulty. On the one hand, the government is withdrawing basic services from the poor in the name of the structural adjustment programmes and encroaching on the livelihood assets and common property resources in the name of development, thus making the lives of the poor miserable and on the other hand the government is trying out financial inclusion by telling banks and other financial institutions to open bank accounts for poor people. In the study they have pointed out that the poor have more faith in money lenders and personal relationships than they have in banks as they have an easy access to money lenders. The study concluded that there is an urgent need to implement pro-poor policies on health, education, water and sanitation rather than focusing solely on financial inclusion.

Data and Sampling

Primary as well as secondary data and information has been used to get an insight into the research problem. econdary data was collected from various published sources such as World Bank Reports, OECD Survey, RBI and Census Reports, various journals and periodicals and the Municipal Corporation of Faridabad etc. Primary data has been collected through in depth interview with the help of a schedule. This method was adopted because it was difficult to get direct answers to the questions

from the women respondents as they were more interested in narrating their stories. Meetings were arranged in the selected slums at a time convenient to the respondents. First of all, the reason for this kind of survey was made clear to them and their consent was taken to make them willing partners in this exchange of information. The universe of the study is Faridabad City which is divided into three blocks –NIT, Ballabgarh and Faridabad. To select a sample of 146, the first stage selection of slums was made by selecting six highly populated slums out of a total of 63, two from each block, thus covering all the three blocks of the city. For the purpose of the present study, judgemental cum convenience sampling technique was adopted as it was left to the discretion of the researchers as to who may be picked for collecting the necessary information for the study. As far as the sampling unit is concerned, one women respondent was selected from each household. According to the preliminary information obtained, most of them are working in the unorganised sectors.

Table 1: No of Respondents (Block-wise)

Block	Slum Area	No of Respondents Selected
NIT	AC Nagar	25
	Nehru Colony	25
Ballabhgarh	Patel Nagar	24
	Azad Nagar	24
Faridabad	Rajeev Nagar	24
	Dayal Nagar	24
Total	6	146

Source: Municipal Corporation Faridabad (2014)

The maximum women in the slums were found to be working as domestic help while others were engaged as construction labour or factory workers or were self-employed. Based on this information, the researchers picked up respondents from different occupation as shown below.

Table 2: Occupational Distribution of Women Workers

	Category	No of Respondents	% of Respondents
Occupation	Domestic Help	85	58
	Factory Workers	20	14
	Construction Labour	32	22
	Others	9	6
Employers	Housewives	55	40
	Working Women	30	22
	Construction Contractors	32	15
	Factory Owners	20	23

Source: Primary Survey

Unskilled women work in small manufacturing enterprises which work as ancillary units to big factories. Building activity in the NCR is mostly being carried out by construction companies and contractors who employ women in big numbers. The collected data was edited and coded for the purpose of analysis. Simple statistical techniques like percentage, frequency distribution were applied to analyse the information.

More than statistical and real life difficulties faced by these women.

Table 3: Demographic Profile of the Respondents

Criteria	Variables	No of Respondents	% of Respondents
	18-25	13	8.9
	26-35	78	53.2
Age (in years)	36-45	44	30.4
	46-56	11	7.5
Marital Status	Married	135	92.4
	Single /Widow	11	7.6
Education	Literate	54	36.7
	Illiterate	92	63.3
Personal Income (in Rs)	Less than 2000	36	25.3
	2001-4000	61	41.7
	4001-6000	41	27.8
	6001 and Above	8	5.2
Family Income	Less than 4000	11	7.6
	4001-8000	42	29.1
	8001-12000	63	43
	12001 and Above	30	20.3
Migrated from	Bihar	28	19
	Haryana	11	7.6
	Jharkhand	4	2.5
	MP	17	11.4
	Nepal	4	2.5
	Oddissa	2	1.3
	Rajasthan	4	2.5
	UP	74	50.6
	Uttrakhand	2	1.3
	West Bengal	2	1.3

Table 3 gives a glimpse of the demographic profile of these respondents. 53 percent of women were in the age group of 26-35 and 92.4 percent were married. 63.3 percent of these women were illiterate and even those who were literate had studied only up to primary classes. Personal or individual income of only 5.2 percent women in the sample was higher than Rs. 6, 000. The family income of 43 percent women fell in the range of Rs. 8,000 to Rs.12, 000. Not only the women but the other family members were also working in the unorganised sector where incomes are very meagre. Another feature which came to light was that almost all the women respondents had migrated from outside. 50 percent of the respondents were from the state of UP and 7 percent had migrated from the other districts of Haryana. 46 percent of respondents had been staying in Faridabad for more than 10 years. The women respondents shared that they keep on going to their native places for religious and social functions; otherwise, for all practical purposes, they have adopted Faridabad as their home. The reality of mobile revolution is nowhere more evident than in the sight of these women holding mobile phones in their hands. 94 percent of the respondents had mobiles in their family.

Results and Discussions

In order to analyse the status of banking development at national, state and district level, three main key indicators have been selected i.e., bank offices, volume of deposits and volume of credit disbursed. This information will also be helpful in analysing the extent of financial inclusion as it is directly associated with the banking development of that particular region.

Table 4: Key Indicators of Scheduled Commercial Banks

Year	Bank Offices			
	India	Haryana	FBD	% of branches in FBD.*
1991	61724	1280	119	9.29
2001	67525	1529	144	9.41
2010	86960	2438	163	6.68
2011	92117	2690	177	6.57
2012	100805	3022	204	6.75
2013 (Sep.)	108994	3485	242	6.49

Year	Deposits(In Rs Lakhs)			
	India	Haryana	FBD.	% of Deposits in FBD **
1991	20056836	400122	48775	12.19
2001	94943329	1988654	280863	14.12
2010	456102905	10917186	1288847	11.8
2011	538955133	12938082	167685	12.96
2012	607824334	14584430	1440800	9.87
2013 (Sep)	722636670	18147920	205641	11.33

Year	Credit Outstanding (In Rs Lacks)			
	India	Haryana	FBD.	%of Credit in FBD ***
1991	12420293	240935	37816	15.69
2001	53843379	815486	110511	13.55
2010	334516932	6913799	681075	9.55
2011	407564700	9278663	167689	18.07
2012	480326691	11577539	98545	8.51
2013 (Sep)	562411240	1400033	126302	9.27

* No of Bank Offices in Faridabad /No of Bank Offices in Haryana*100
** Volume of Deposits in Faridabad / Volume of Deposits in Haryana*100
*** Volume of Credit in Faridabad / Volume of Credit in Haryana*100
Source: RBI various reports

Table 4 shows that the bank offices in Faridabad were 9.29 percentage of Haryana in the year 1991 but the same has come down to 6.75 in the year 2012. Deposit mobilisation in Faridabad and credit disbursement also has shown the same downward trend. For example, deposit mobilisation and credit disbursement were 12.19 percent and 15.69 percent respectively in 1991.Both these figures were much lower in 2012. Surprisingly, the total credit disbursement got reduced to approximately 50 percent from 1991 to 2012.

Table 5: Financial Inclusion

Financial Inclusion related variable	Responses	No of Respondents	%of Respondents
Fulfilment of Urgent Need of Money through	No need emerged	6	3.8
	Money Lender	26	17.8
	SHG	11	7.6
	Employer	16	10.7

	Relatives/Friends / Neighbour	37	25.4
	Formal Bank	19	12.7
	Chit fund	32	22
Place where you keep savings	No Saving	33	22.8
	Bank	41	27.8
	Home	60	40.8
	Employer	13	8.6
Nearby Bank Branch	yes	85	58.2
	No	26	17.7
	Don't Know	35	24.1
Bank Account of respondents	Yes	52	35.5
	No	84	57.8
	In Native Place	10	6.7
Aadhar Card	yes	96	65.8
	No	50	34.2
Insurance	Yes	28	19
	No	118	81

Source: primary survey

During the study, it has been seen that despite the respondents being literate about the basics and importance of savings, this knowledge is not reflected in their attitude and behaviour. It is surprising to know that a major chunk of women i.e. is 78.2 percent have some savings but most of them keep them at home or with their employer, which means that they do not understand that this money can fetch some returns for them. Moreover, 58.2 percent were having bank branches nearby while only 27.8 percent of them keep their money with banks. They know well that a good number of formal financial service providers are available around the identified slum population. Hence, the distance of the formal financial system from the slum cannot be a factor of financial exclusion. In this regard, it is clear that demand for banking services are weak, thus creating an obstacle in the way of financial inclusion. Chit funds have been found to be one of the popular sources of fulfilment of their needs. They prefer informal chit funds which are based on mutual trust and understanding each other's needs in a better fashion and are easily approachable as compared to banks where much paper work is required and repeated visits are needed. They feel that they are not treated as well as the other customers are by bank officials.

To fulfil their urgent need for money, they prefer to approach informal sources like moneylenders, chit funds, friends, neighbours and employers (75.9 percent).As far as formal sources are concerned, 12.7 percent approach banks and 7.6 percent go to self-help groups. This result indicates that the demand for formal banking sector is very low. One major constraint in providing financial services has been the requirements of know your Customer (KYC) under the banking regulation. The regulation has been issued by the RBI under Section 35A of the Banking Regulations and Rule 7 of the Prevention of the Money Laundering Rules 2005. KYC has two components –identity and address. For identity banks require Passport, Pan Card, Voter Identity Card, driving license and for proof of address they require electricity bill, ration card, telephone bill etc. The poor living in slums in urban areas are a disadvantaged lot as most of them are migrant labour and have difficulty in providing either of the proofs. Even as recently as Feb 2014, Ragunath Rajan, the Governor of RBI, has admitted that the KYC norms are acting as roadblocks even for a simple universal basic saving account (TOI, Feb 13). The results disapprove this fact. 65.8 percent respondents possessed the Aadhar card but only 35.5 percent women respondents had a bank account. Our interaction with slum women has shown that most of them have opened these accounts in the last one year only after they got Aadhar Cards in their names. The accounts, which women have opened, are used only for depositing money and that too very infrequently and they have not used them for borrowing purposes. Women working as construction labour are generally seasonal migrants who migrate to Faridabad from the states of UP and MP and have not opened accounts in the banks in Faridabad.Another factor which hinders these women from saving and spending according to their wisdom is the influence of the male members over the families who always dominate in money managing matters. Their men also indulge in vices like drinking, gambling and

smoking etc. Many women narrated the stories of how they have to hide their money from their husbands. 90 percent of the respondents shared that their husbands wasted money on drinking, gambling and consuming gutka and tobacco. Slum women who are working as domestic help have been found to be high on financial literacy and awareness about the need for having a saving account and insurance policy because of their close proximity to the well- to- do section of the society. They keep on getting some financial education from the women employers whom they help in managing their household chores.It was also observed that slum women have low literacy level with regard to the schemes of the government. Also poverty has made their behaviour and attitude indifferent. Their main struggle is to meet daily challenges posed by life. The rising prices of essential commodities eating in a big way into their income were the recurrent theme raised by these women. 23 women respondents(15.75 percent) whose children were going to school had to shell out an average of Rs. 500 as tuition fee and other expenses though the positive side is that they were happy doing it. Even their children attending government schools are taking tuitions in the evening to cope with inadequacies of the government school system.

During our interaction with women working as domestic help, it was observed that they got meagre raise in their salaries even when prices are touching the skies. On the other hand, whatever they are able to save is spent on social rituals. All these factors collectively make them indifferent towards opening a bank account. A very heart rending story of one woman who had saved by working eight hours daily in a factory came to light. She had to give cash of one lakh rupees to marry off her daughter besides incurring the other expenses of wedding. Spending on social rituals, weddings and health issues were their primary concerns. These women did not have many hopes from life and did not expect to get loans for some entrepreneurial activity. Their only concerns were having a pucca house, marrying off daughters and health concerns of self or other family members.

 The *one size fits all* kind of policy for financial inclusion will not work. Different socio-economic groups have different needs. The needs of people living in rural areas may be different from those of the people living in slums in the urban areas. The requirements of aged people may be different from those of young people and the financial behaviour and attitude of women may be different from that of men. The research inference would definitely draw the attention of the policy makers to think out of box for making financial literacy and inclusion possible for poor women in urban areas.

To ensure high levels of financial inclusion, financial education efforts have to be customized to encourage savings and create greater awareness about the banking services among the urban poor. Under the banking network there is a scope to plug the spending leakages of the urban poor women and to improve their saving behaviour through proper counselling by presenting before them a few real life situations. The key lies in educating, *motivating* and *encouraging the target group*. Traditional commercial banks have so far shied away from the task of including the poor and the marginalised in the institutional network. Targeting women has never been the objective function of commercial banks. In the year 2006, in individual bank loan accounts the share of women was only 12 percent. However, the share of deposit accounts held by women was higher at 24.7 percent in the same year (Chavan, 2008). Commercial banks emerged as more important for women as a means of saving than as a source of credit.

Women are a vulnerable section of the society and if these are women living in slums with hardly any education, the vulnerability increases manifold. The importance of making women empowered by making them financially literate and by including them in the financial system cannot be overemphasised. Banks themselves cannot manage this onerous responsibility as their agenda and objectives are different and their personnel are also not trained for accomplishing this task. Nevertheless, the efforts of various organisations working at the grass roots level with women such as various NGOs, micro finance institutions and some business enterprises have proved that poor women are equally capable of making sound financial decisions and show their entrepreneurial capability if the right kind of structures and systems are put in place. Therefore, in order to make women financially educated, banks can seek the help of NGOs working in the area. Formation of cooperatives and Self Help Groups on the SEWA model where poor women are empowered through provision of skills and training for functioning in a cooperative manner for earning livelihood and for banking purposes can also prove beneficial. In Faridabad the role of Self Help Groups which motivate women to save small

sums of money and then prove their worthiness for borrowing money from banks has been found to be weak. NBFCs are operating but only to provide loans and neither the NBFCs nor the borrowers are being tightly monitored.

India's first Women Bank was opened in November 2013 with a view to focusing on the banking needs of women and helping in their skill development for economic activity. If the Bhartiya Mahilla Bank really operates in a way that encourages women to show their entrepreneurial talent by raising loans from this bank at concessional rates and the bank does effective mentoring of these women, it will go a long way in improving financial literacy and inclusion of the latter. But the problem with women's exclusion is not that they cannot go to banks managed by men but the real issue is inaccessibility of bank branches, women's lack of knowledge about banking operations, their low incomes and control of money by men in the family.

Conclusion

The Indian banking sector is trying hard for bringing the poor and marginalised into the fold of basic banking services. Despite all the efforts of the policy makers, financial literacy and inclusion of the poor in general and poor women in particular has been found to be highly inadequate. Dependence on informal and unregulated operators should be minimised by filling up the space with regulated formal financial institutions whether by opening more bank branches or by helping women to take charge of their lives by being part of cooperatives or self help groups which can teach them how to make the best use of their monetary and non-monetary assets. A creative and innovative approach by all the stakeholders such as RBI, banking regulators, banks, civil societies and NGOs is the need of the hour.

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Mediating Effect of IT Portfolio Management on relationship of Partnership and Business-IT Alignment

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Abstract

The purpose of this research is to understand the mediating effects of Portfolio Management on relationship of Partnership and Business-IT Alignment. A theoretical framework is proposed regarding the constructs of Portfolio Management (ITPM), Partnership (PART) and Business-IT Alignment (BIA) and the construct validity was established. Structural equation modeling (SEM) was used to understand the mediating effects and observe the strength of relationships among the constructs. IT Portfolio Management had a significant partial mediating effect on the Partnership and Business-IT Alignment. The tested framework suggests that IT Portfolio Management plays a key role to achieve BIA and is supported by Partnership.

Key words: Business-IT alignment, Partnership, Portfolio Management, Mediation. Relationship building, knowledge sharing.

Introduction

Business IT alignment is defined as the *extent to which the IT strategy supports, and is supported by, the Business Strategy.*During the last two decades, Information Technology (IT) has become very critical in providing support, sustaining the competitive position and enabling the growth of business. However the alignment of IT with business strategy has been consistently ranked as the single most important issue facing business and IT executives, not only in North America but also in Europe as well (Computer Science, 1996). Different paradigms have been used to define alignment (e.g. (Venkatraman, et al., 1993)), how to achieve it (e.g. (Luftman, 2000). In one of the constructs "Planning Analysis" explains the need to understand the information needs of the organizational sub units, identifying opportunities for internal improvements in the business process and fulfilling them through appropriate IT initiatives. The fourth construct Planning Capabilities explains the need to understand business strategy and its information needs and ability to gain cooperation among user groups for IS plans (Segars & Grover, 1998) .

Motivation for the Research

The fundamental motivation for this research is due to the consequences of failures of lot of software applications implementation. The research of (Kaur & Sengupta, 2011) indicates the reasons for the failure of software. Their findings indicate that majority of the projects fail to meet their objectives due to poorly defined applications, miscommunication between business and IT leading to poor relationships, poor requirements gathering, analysis and management costing the businesses about $30 billion every year. The failure of these applications are affecting the business-IT alignment. The partnership is one of the important constructs that affects the business-IT alignment. In order to achieve business-IT alignment, another important construct, IT Portfolio Management is required. The relationship between partnership (BP) - Business-IT alignment (BIA) (Gutierrez, 2011) is contributed by building relationships, exchange of domain knowledge. The relationship between Partnership (BP) and IT Portfolio Management (ITPM) sates that building good partnership would result prioritizing the work, be able to organize the projects in to different portfolios without any conflicts. Broadbent and Kitzis(2015) describes the effect of IT Portfolio Management (ITPM) on business-IT alignment (BIA).

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IT Portfolio Management collates the projects in to different portfolios like transformational, operational and informational, build infrastructure/resources needed for IT Portfolio Management, identify the risks related to each portfolio and articulate risk handling mechanisms. It tracks the value being added by each portfolio to the business strategy and thus contributes to business alignment. However the mediation effects of IT Portfolio Management (ITPM) between partnership (BP) and business-IT alignment (BIA) are not described in the literature. This paper aims to understand the direct and indirect effects of partnership and mediation effects of IT Portfolio Management on the relationship of partnership and Business-IT alignment. This research contributes to bok through providing the structure of the constructs like it portfolio management, partnership and business-it alignment validated through literature survey. In addition to the conformance from literature, the construct validity was established through content validity, reliability, discriminant validity, convergent validity and confirmatory factor analysis - through structured equation modeling (sem).

Operational Definitions of the constructs

Business-IT alignment: Business IT alignment is defined as the extent to which the IT strategy supports, and is supported by, the Business Strategy.

IT Portfolio Management (ITPM) ensures collation of projects in to different portfolios like transformational, operational and informational, build infrastructure/resources needed for IT Portfolio Management, identify the risks related to each portfolio and articulate risk handling mechanisms.

Partnership (BP) is essentially building relationships between business and IT areas, ensure knowledge transfer and relationship building.
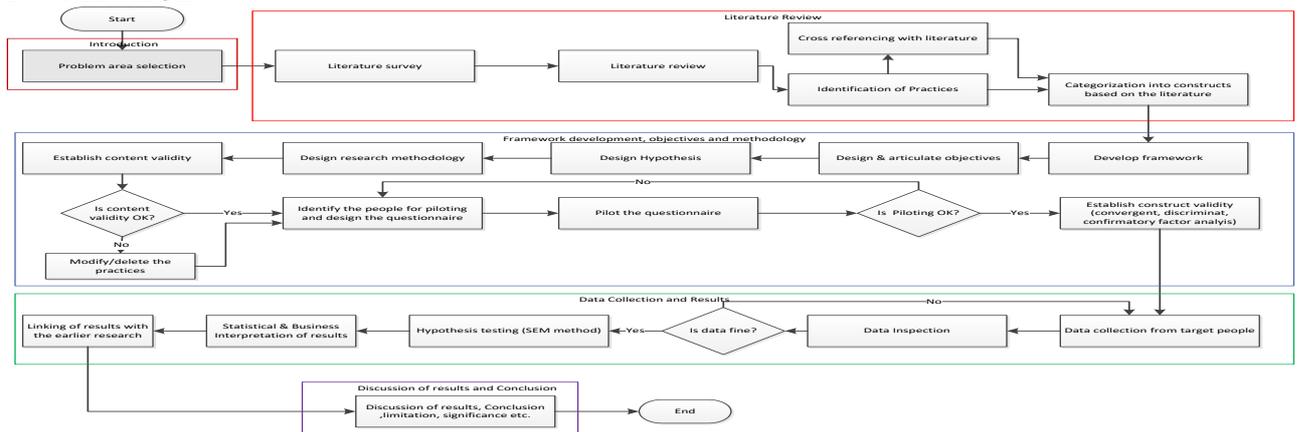
1   METHOD

Figure 2-1 Method for the research

LITERATURE REVIEW

Reich and Benbasat (2000) described four factors that impact the business-IT alignment after conducting a total of 57 semi structured interviews with 45 informants. They critically looked at written business & IT strategic plans, meeting minutes of IT steering committee meetings and other strategic documents were collected from each of the 10 business units. They observed that shared domain knowledge between IT and business executives, IT implementation success, communication between business executives & IT executives and connections between business and IT planning processes were found to have the influence on the short term alignment. Only shared domain knowledge and strategic business plans were found to influence in the long term as well as short term. Heater etal, (2007) conducted research to understand the issue of how to develop an effective strategy using focus group methodology. The research identified the critical success factors for creating the business value through building the IT strategy and challenges involved. The critical success factors included revisiting the business model on a periodic basis, developing strategic themes to develop business capabilities and building partnerships with business. (Heather, et al., 2007). Preston and karahana (2009) identified in their research a nomological network in which shared understanding between the CIO and Top Management team (TMT) about the role of IS in the organization (which represents the social dimension of IS strategic alignment) as an antecedent of the intellectual dimension of IS strategic alignment. It is further described that shared language and shared domain knowledge brings in

improvement in the CIO's business knowledge. The critical determinants of shared understanding are top management's (TMT) strategic IS knowledge, systems of knowing (structural and social), and CIO-TMT experiential similarity. Data were collected from 243 matched CIO-TMT pairs. Results largely support the described nomological network. Specifically, shared understanding between the CIO and TMT is a significant antecedent of IS strategic alignment. Furthermore, shared language, shared domain knowledge, and structural systems of knowing, influence the development of shared understanding between systems of knowing, representing informal social interactions between the CIO and TMT, and experiential similarity did not have a significant effect on shared understanding. Chen (2010) conducted research and data was collected from 130 business and IT executives from 22 companies in China, 11 of which were multinationals operating in China, and explored several questions in the area of business–IT alignment. (1) Communications (COMM) - The effectiveness of leveraging information for mutual understanding and knowledge sharing. This category evaluates such issues as whether business and IT understand each other's operating environment, whether a liaison is used to facilitate knowledge transfer between them, and whether there are rigid protocols that impede discussion and sharing of ideas. Partnership (PART): Pertains to how IT and the business perceive each other's contribution. This evaluates issues such as IT's role in strategic business planning and how risk and rewards are shared by IT and business functions. Business' perception of the role of IT, Role of IT in strategic business planning, Integrated sharing of risks and rewards, Formality and effectiveness of partnership programs, Perception of trust and value, Reporting level of business sponsor/champion. Maharaj and Brown (2015) examined the impact of shared domain knowledge (SDK), strategic information systems planning on alignment. Data were gathered from management consultants in a large, global IT organization, through the use of a structured questionnaire, and analyzed. Shared Domain knowledge (SDK) was also found to positively impact both the intellectual and social dimensions of alignment. The implications of the findings are that fostering a knowledge sharing environment in organizations will help improve alignment. Zolper, K et al (2014) studied the impact of relationships at the application-change level and strives to identify and explain favorable social structures for effective business/IT dialog at the operational level. They collected data in seven comprehensive case studies, including 88 interviews and corresponding surveys, and applied social network analysis to show that three social structures at the implementation level influence the degree to which IT applications are maintained and enhanced in line with business requirements: 1 interface actors connecting business and IT, (2) the relationships between interface actors and the corresponding unit, and (3) the relationships between interface actors and other employees in their unit. In three cases, less favorable structures are revealed that correspond to low application change effectiveness and software applications that do not meet business requirements. The other cases benefit from favorable social structures and thus enhance fulfillment of business requirements and result in higher IT business value. This paper contributes to IS research by helping to explain why companies may not provide favorable IT services despite favorable relationships at the top management level and successful application development projects. Roses, L.K et al (2015) proposed a model of conversational competences for Business and IT managers aiming at the strategic alignment between their areas. The theory of this alignment highlights the importance of communication between Business and IT areas, which is explored in the social dimension of their managers' relationship through conversational competences. A survey research was performed with Business and IT managers from public and private organizations in Brazil, whose data were analyzed through multivariate statistical techniques - exploratory and confirmatory factor analysis - and thematic content analysis. The results confirmed the constructs and most of the hypotheses of the proposed research model, which was expanded with new constructs and hypotheses. Ibrahem et al (2010) in their article presents the results of a study into the status of IT Portfolio Management in the HKJ. The study took place in nineteen organizations that support their governance of IT with a clear insight into the current projects. On average, this involved over 100 projects per organization. Initially, the application of IT Portfolio Management is aimed at having an overview and then improving the way the setting of project priorities is done. It became clear that at central level, the investigated organizations virtually always had an overview and understanding of the current projects. This central overview& understanding of projects was used in the governance of ICT.

Research model and hypothesis development
Table 4-1 Rationale for Research Model Design

Paths in Research Design			Evidence from Literature survey
BIA	←-	ITPM	Broadbent and Kitzis(2005)
BIA	<---	BP	(Gutierrez, 2011)
ITPM	<---	BP	(Weill and Aral 2006)

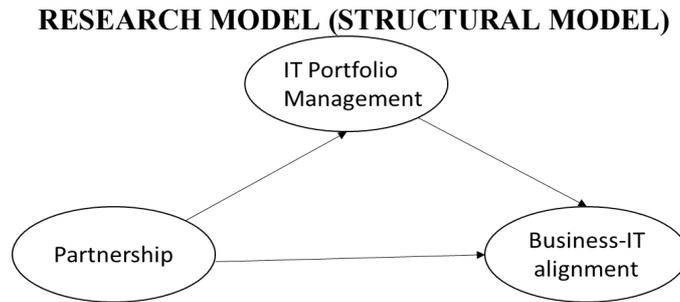**RESEARCH MODEL (STRUCTURAL MODEL)**

Figure 4-1 research model (structural model)

Objective of the study
To understand the mediating effect of IT Portfolio Management on the relation of Partnership and Business-IT alignment in the context of Indian IT industry.

HYPOTHESIS DESIGN AND DEVELOPMENT
Hypothesis (H1) : The Mediating effect of IT portfolio management on the relationship of Partnership and Business-IT alignment is not significant. Partnership involves establishing connections between the IT and business teams. This sets the tone for building the relationships between the two groups. This relationship would facilitate the mutual sharing of domain and technical knowledge between the two groups. The knowledge acquired is a primary input for executing the IT initiatives that add business value to the organization. This facilitates the tracking of the IT initiatives, resolve issues and expected business value leading business-IT alignment. (Reich & Benbasat, 2000) observed that shared domain knowledge between IT and business executives, IT implementation success, communication between business executives & IT executives and connections between business and IT planning processes were found to have the influence on the short term business-IT alignment. Only shared domain knowledge and strategic business plans were found to influence in the long term as well as short term. IT Portfolio Management (Martinsuo, 2013) is the process of managing the aggregation of all potential, pending, ongoing and dormant projects in an organization (Unger et al., 2012; Rad and Levin, 2006). As such, the quality IT Portfolio Management is relying on quality of the knowledge sharing and relationship between portfolio managers and project managers (Lindner and Wald, 2011). As a part of a study of successful IT Portfolio Management practices, Patankul (Patanakul,2015) emphasizes alignment between the organizational strategy and IT Portfolio Management and the handling of risks and uncertainty. (Xu et al, 2011) maintains that mutual interaction and relationship are fundamental to the success of the IT Portfolio Management.

Research design
As described above, the proposed research model has three latent variables or constructs. Each latent variable is measured by a set of indicator variables as shown in the following tables. Also the support is evidenced from the research for each of the indicator variables. Then the construct validity was established as described in the subsequent sections. The basic research design selected for this initiative is cross sectional survey conducted in the IT cover IT Industry in Chennai, Hyderabad, Pune and Noida from Middle and Senior Management executives with 5 plus years of experience. The questionnaire has been derived with factors of IT Portfolio Management, Partnership and Business-IT alignment using likert 5 point scale (1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree). The design would establish content validity, and reliability. The convergent validity and discriminant

validity and confirmatory factor techniques would be implemented. Multivariate analysis has been used to draw appropriate inferences and testing of hypothesis. Structural Equation Modelling has been used to compute the direct and indirect effects. (Herein after called as SEM).

Measurement of Variables

The proposed research model in this study includes three latent variables, namely Partnership (BP), IT portfolio management (ITPM) and business-IT alignment (BIA). There are 15 statements used to measure these three variables. A Likert scale ranging from 1(strongly disagree) - 5 (strongly agree) was used to measure these statements. These statements are mapped with the three variables (Partnership/Business-IT alignment/IT portfolio management). They are presented in the following Tables 4-1 to 4-3. Further the construct validity is established in the next section.

Table – 4-1 Partnership practices mapping with literature

Practice number	Partnership	Cross referencing
Q1	Establishing the Connection between people from business side and people involved in Planning of IT applications/ Software products	(Bartholet, Budd and Turiscon.d.),(Masadeh, et al, 2007) ,(Heather, James and Satyendra, 2007) ,(Reich and Benbasat, 2000)), (Yalya and Hu, 2009) ;(Nelson and Cooprider, 1996) , (Rui, Zmud and Leon, 2010), (De Haes and Van Grembergen, 2006)
Q2	Ensuring sharing of domain knowledge between business and IT executives leading to understanding of business by people involved in IT application/software products planning and development	(Luftman and Brier, Achieving and sustaining business-IT alignment, 1999) (Bartholet, Budd and Turisco n.d.), (Masadeh, et al., 2007);(Reich and Benbasat,2000); (Yalya and Hu, 2009) ;(Nelson and Cooprider, 1996)
Q3	Ensuring close interaction between people involved in IT application planning &Dev and customers/end users to understand the expectations and issues	(De Haes and Van Grembergen, 2006), (Sledgianowski, 2006),(Masadeh, et al., 2007);(Ross, Creating a Strategic IT Architecture Competency: Learning in stages, 2003);(Gutierrez, 2011);(Segars and Grover, 1998)
Q4	Availability of processes/practices for account Management (by customer)	(Luftman, Assessing Business-IT alignment maturity, 2000); (Reich and Benbasat 2000);(De Haes and Van Grembergen, 2006)

Table 4-2 IT Portfolio Management Practices mapping with literature

Practice no	IT Portfolio Management	Cross referencing
Q5	Collecting the list of Projects related to each of IT Application Initiatives/software products	Ibrahemetal (2010).

Q6	Classification of all projects related to each of IT Initiatives/software products in to different Portfolios based on criteria (for eg. Transformational, operational and informational)	Weill, P. et al: Compilation of MIT CISR Research on IT Portfolio's, IT Savvy and Firm performance, (2000-2006)., MIT , Boston, 2006,Quraishi(2009),Ying and Dong (2007)
Q7	Prioritization of Projects and allocation of resources is based on the business priorities	Van Grembergen, 2006, Weil and Ross (2004) ,Bartholet, Budd and Turisco (2009), Sargaent (2007),Ying and Dong (2007) ,Luftman and Brier (1999) ,Parker et al.(1998);
Q8	Building infrastructure needed for the IT Portfolio Management in terms for experienced human resources , tools and processes	Ibrahem et al (2010).
Q9	Assessing risk with respect to each portfolio on a regular basis and take appropriate course of actions	Mark (2005),Ying and Dong (2007),Segars and Grover (1998)

Table 4-3 – Business-IT alignment practices mapping with literature

Practice number	Business – IT Alignment(BIA)	Cross referencing
Q10	Assessment of the alignment between Business and IT	(Luftman & Brier, 1999), (Callahan & Keyes, 2003)
Q11	Understanding of Business case (including the value indicators) prepared for the IT Initiatives	(Buckhow & Rey, 2010) (Callahan & Keyes, 2003)
Q12	Building approach for computing the value indicators (the metrics that quantify the business expectations. For e.g ."billing accuracy" in case of telecom billing products)	(De Haes & Van Grembergen, 2006); (Van Der Zee & De Jong, 1999) (Farrell, 2003) (Callahan & Keyes, 2003)
Q13	Tracking success of the IT initiatives	(Luftman & Brier, 1999)
Q14	Updating business case and compares actual benefits with the planned benefits	((Chad, et al., 2005)
Q15	Assessment of value add to the Business from each portfolio based on the value indicators (for eg dollars saved due to "billing accuracy" incase of Telecom billing products) identified during Business value Planning state.	(Luftman & Brier, 1999)

Control Variable
Control variable here is "type of organization". The examples for types of organizations could be that it is a System integration business or product development business or Captive IT. In this research, the target population is only System integration business and it is constant throughout the research.

Content Validity
A widely used method to measure content validity was developed by Lawshe (1975). It is a method for gauging the agreement among the experts regarding the essentiality of a particular item. Experts in the area of business-IT alignment were mailed with the questionnaire with the above explained clarity and relevance scale.The questionnaire was checked for its clarity and relevance with 15 experts.
The CVR is calculated as per the following formula and the target results are as follows.
$$CVR = [(N_e - (N / 2)) / (N / 2)]$$
where CVR= content validity ratio, N_e= number of SME panelists indicating "a rating of 4 or 5", N= total number of SME panelists. This formula yields values which range from +1 to -1; positive values indicate that at least half the SMEs rated the item as essential. The mean CVR across items may be used as an indicator of overall test content validity The content validity has been established to ensure that the constructs are measuring what they are expected to measure and the content validity ratios are in the range of 0.79 as compared to the target value of 0.50. So we can conclude that the

practices are in line with the expectations of the Subject Matter Experts and having high relevance in the Indian context.

Table 4-4 Content Validity Rations for constructs

Item/Practice no	Partnerhsip				Portfolio management					Business-IT alignment					
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Computed (CVR)	1	0.9	0.9	0.7	0.9	1	0.9	0.9	0.9	0.9	0.9	0.9	0.6	0.9	0.6
No of SMEs responded	14	14	14	14	13	14	14	14	14	15	15	15	14	14	14
Target Value	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

From the above table 4-5 It can be observed that for each practice the content validity ratio (CVR) has exceeded the expected target value (which is based on the number of subject matter experts). We can conclude that the items under each construct are in line with the expectations of the subject matter experts and the items under each construct measure the latent variables IT Portfolio Management, partnership and business-IT alignment.

Piloting & Construct Validity

Reliability

The pilot survey was conducted with 49 respondents and checked for their reliability**.** Since the pilot survey has shown a significant reliability value, the survey was continued to collect the data. Cronbach reliabilities for the pilot study also had been computed for all three factors (ITPM, BP and BIA) together and individually. The detailed values are shown in the following table.

Table 4-5 Reliability Values for constructs

Name of the Construct	Reliability - complete data (Cronbach alpha)	Reliability – Pilot data (Cronbach alpha)
BP	0.83	0.83
ITPM	0.84	0.87
BIA	0.85	0.83

It is observed from the above table that the reliability values are beyond 0.8. WE could infer that the reliability parameter has been satisfied.

Convergent Validity

(Bagozzi and Phillips 1982) conducted research on convergent validity to understand "if measures of constructs that theoretically *should* be related to each other are, in fact, observed to be related to each other". Convergent validity is "the degree to which two or more attempts to measure the same concept…are in agreement".

Item convergence was assessed through the calculation of the average variance-extracted scores. Commonly, scores greater than 0.50 support a case for convergent validity (Fornell & Larcker, 1981). According to results obtained, all of the "Average Variances Extracted" for constructs was greater than 0.50. Thus, convergent validity is evident. Also according to all the average variances extracted estimates were close to or greater than 0.50 Thus, convergent validity is evident.

Discriminant Validity

Discriminant validity is "the degree to which measures of distinct concepts differs" (Bagozzi & Philips, 1982). Measures of different constructs should share little variance. Discriminant validity is important to the discussion of model fit because it establishes that two or more constructs are separate and distinct from one another. If constructs are separate and distinct from one another, then it can be established whether or not a predictive or causal relationship exists between them. The results support the existence of Discriminant Validity, as the Average Variance Extracted (AVE) for each of the Constructs was greater than the shared variance between the construct and all other constructs.

Confirmatory factor analysis

Upon satisfactory results, Confirmatory Factor Analysis (CFA) was performed to confirm the findings using SPSS Amos 20.0. The measures were validated through CFA using single factor model (Albright & Park, 2009). Here maximum likelihood method is used in AMOS 20.0 version. For all the items

under each of the construct, the regression loadings found to be in the range of 0.65 to 0.86. The detailed values are shown in the table below.

Table – 4-6 Factor loadings of Items under BP

Relationship			Estimate
Q1	<---	BP	.698*
Q2	<---	BP	.905*
Q3	<---	BP	.747*
Q4	<---	BP	.663*

Table – 4-7 Factor loadings of Items under ITPM

Relationship			Estimate
Q5	<---	ITPM	.875*
Q6	<---	ITPM	.696*
Q7	<---	ITPM	.655*
Q8	<---	ITPM	.535*
Q9	<---	ITPM	.847*

Table – 4-8 Factor loadings of Items under BIA

Relationship			Estimate
Q10	<---	BIA	.298*
Q11	<---	BIA	.542*
Q12	<---	BIA	.922*
Q13	<---	BIA	.609*
Q14	<---	BIA	.707*
Q15	<---	BIA	.816*

*indicates statistical significance at 1% level

Table - 4.-9 Summary of SEM model values for constructs

Name of the construct	CMIN/DF	P	RMR	GFI	RFI	CFI	NFI	RMSEA
IT Portfolio Management	0.05	0.95	0.002	1	0.99	1	1	0.00
Partnership	0.95	0.41	0.01	0.99	0.98	1	0.99	0
Business-IT Alignment(BIA)	1.15	0.32	0.01	0.98	0.97	0.99	0.98	0.024

The above observations from the tables through 4-1 to 4.9 confirm the construct validity.

DATA COLLECTION

Questionnaire and interviews are used for gathering data for research purpose. The major inputs considered for designing the questionnaire are the research objectives, the constructs and their indicators, hypothesis and the research framework and target population of research. The questionnaire is divided in to 3 sections with a total of 15 questions. The questionnaires were mailed to target population as described above and followed up with telephone. The data is collected, collated and handled the missing data by calling back the respective participants. 269 valid responses have been received from the survey.

RESULTS- HYPOTHESIS TESTING

AMOS 20.0 was used to model the mediation framework and test the hypothesis. The bootstrapping method in AMOS was used to compute the probabilities associated with the direct and indirect effects of IT Portfolio Management (ITPM) and Partnership (BP) and on Business-IT alignment. The following

are the steps for hypothesis testing. First (Fig-6-1), The size of effect of the relationship between Partnership and business-IT alignment is computed and observed if it is statistically significant using AMOS by constraining the BP-ITPM and ITPM-BIA paths. From the figure 6-1 below, we can observe that the relationship is significant between BP and BIA. The strength of the effect is 0.93 and it is statistically significant as P is less than 0.01. Since the effect is strong, we can proceed to see if there are any mediation effects of ITPM between BP and BIA.The mediation model is designed as shown in the fig 6-2. We can observe that the paths BP-ITPM and ITPM-BIA have regression coefficients 0.94 and 0.45 respectively. They are statistically significant as P less than 0.01.Also.R^2 has improved from 0.85 to 0.87. After the introduction of the mediator, the regression coefficient between BP and BIA is reduced to 0.50 from 0.92. So this confirms the partial mediation effect of ITPM on BP-BIA this rejecting hypothesis (H4). The total effect is the sum of the effects that are described as follows.

Total effect = = Size of direct effect BP-BIA + indirect effect of the mediator

Total effect = Size of direct effect BP-BIA + (Size of direct effect of BP-ITPM X Size of direct effect ITPM- BIA)

 = 0.50 + (0.94 X 0.45) = 0.5 + 0423 = 0.923

The model showed reasonably good model fit according to multiple SEM fit statistics and indices. $\chi2$(df=80)=198.76, p$\leq$0.001; CMIN/DF= 2.48, Root Mean Square Error of Approximation (RMSEA)=0.06; Comparative fit index (CFI)=0.95; Tucker-Lewis index (TLI)=0.93.
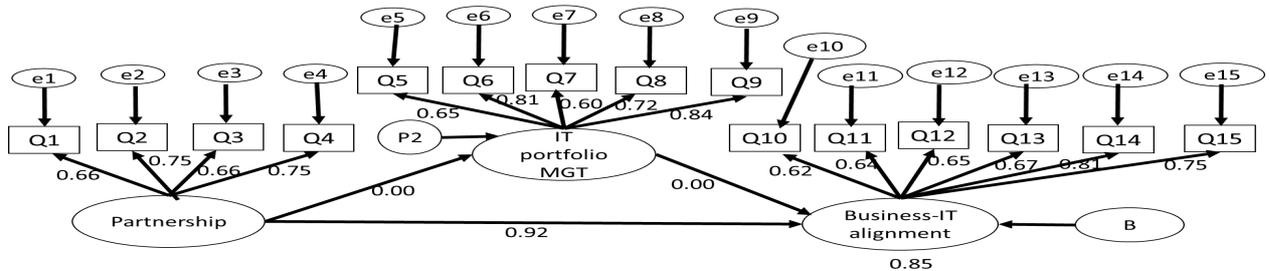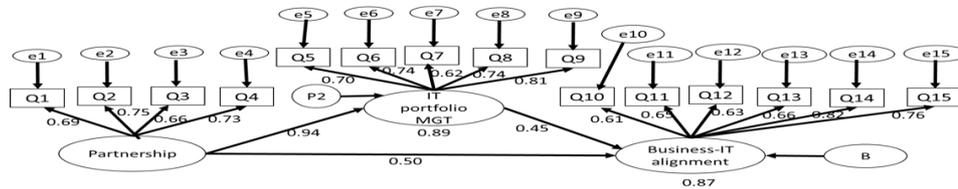
SEM Models

Fig 6-1 Effect of Partnership (BP) on BIA while constraining BP-ITPM and ITPM-BIA

Fig 6-2 Mediating effect of IT Portfolio mgt on path BIA-Partnership

Implications for theory base and practical implications for it organizations

The implications of this research towards the theory are to build a structure for the constructs partnership and business value planning that are impacting the business-it alignment and provide a framework. The construct structures are designed using the literature survey and tested through confirmatory factor analysis - single factor model using maximum likely hood method (ml) through structured equation modeling (sem). It also contributes to theory the mediation effects of it portfolio management on partnership and business-it alignment. The study describes a mediating effect of it portfolio management between partnership and business-it alignment. So this understanding would help the organizations to decide the right mix of partnership and the it portfolio management to improve the business-it alignment. The organization could implement the partnership building activities first and subsequently focus on it portfolio management and review them periodically. This study would help in understanding that more emphasis would be on the itpm while having the partnership practices in place.

Conclusion

In business terms, it means that the bp is providing the relationship building, knowledge transfer etc, which is a basic requirement to build and effectively implement the practices of it portfolio management like collation of projects in to different portfolios like transformational, operational and informational, build infrastructure/resources needed for it portfolio management, identify the risks related to each portfolio and articulate risk handling mechanisms. The important aspect of it portfolio management is to enable the implementation of risk handling mechanisms for each of the portfolios to add business value. So the relationships built during the implementation of the partnership practices would complement it portfolio management thus leading to business-it alignment. The mediation effect of itpm on bp-bia is significant. So this indicates that identification of portfolios, building the infrastructure for the it portfolio management, identifying the risks and risk handling mechanisms, and implementation of risk handling mechanisms would help to improve the business-it alignment through the practices of partnership like relationship building, knowledge transfer.

Limitations

The size of the organization could play a role and thus focusing on small/medium/large organizations may result in a different model/interrelationships.

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An Investigation into the linkages of India's Manufacturing Sector: An Application of Input Output Analysis

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Abstract

Using the concept of linkages, both backward and forward, this paper presents an analysis of the connection of manufacturing sector with other sectors of the economy in the input-output framework. The analysis of sectoral linkages are based on the National Input Output Tables for manufacturing industries for Indian economy for the year 2000 and 2014 extracted from the World Input-Output Database (Timmer et al., 2016) that provides the values of input-output transactions among 56 industries for 28 EU countries and 15 other major countries including India in the world for the period from 2000 to 2014. This analysis results may help policy makers to draw suitable policies around the sectors with high linkages which can be geared towards higher growth of the economy.

Keywords: input output analysis, backward linkage, forward linkage, key sector, manufacturing sector, input output tables

Introduction

The Indian economy has evolved from a state led closed system to a system where neo-liberal objectives are respected and not abhorred like before the crisis of 1991. One of the striking aspects of the India's recent growth has been the dynamism of the services sector while in contrast, manufacturing has been less robust. It is important to mention here that there are two unique characteristics of India's services sector growth. Firstly, the decline in the share of agriculture sector in GDP has been picked up by the services sector while manufacturing sector's share has remained more or less the same. Secondly, in spite of the rising share of services in GDP and trade, there has not been a corresponding rise in the share of services in total employment while agriculture continues to be the single largest employment generator. As per the World Bank's South Asia Economic Focus Spring 2018 report, between 2015 and 2025, India's working age population or those above the age of 15, is expanding by 1.3 million a month and therefore, the country needs to create millions of jobs a year (Das, G., 2019). This large workforce cannot be absorbed in the service sector alone as the production is not labour intensive and therefore in order to take full advantage of its demographic dividend, we may say that the thrust on the manufacturing sector by the Indian Government is timely and much needed as the revival in the manufacturing sector is imperative for the continued and sustainable growth of the Indian economy.

Under 'Make in India' and other allied initiatives, Government of India aims to increase the share of the manufacturing sector to the gross domestic product (GDP) to 25 per cent by 2022, from current 16 per cent, and create 100 million new jobs along the way. In this programme, greater emphasis is being placed on foreign and local investments in 25 focus sectors to transform India into a global manufacturing powerhouse. Against this backdrop, the present paper attempts to identify the key manufacturing industries that hold potential for generation of output in other sectors of the economy and increase employment. The identification of the sectors with high linkages with other sectors of the economy would be identified using input output analysis. Linkage analysis results may help policy makers to draw suitable policies around key sectors which can be geared towards higher growth of the economy. In order to analyse the inter-industry linkages, the input–output frameworks have been used by various researchers. Bharadwaj and Chaddha (1991) analyse the sources of growth of industrial growth in India from a multi-sectoral perspective followed by highlighting inter-industry linkages in the economy during the period 1973-74 through 1984-85. The analysis reveals that at an aggregated level, the major factor of industrial growth is the increase in output induced by changes in domestic final demand. At disaggregated level, changes in input-output coefficients seems to be an important source of growth in basic goods and capital goods industries. Hansda (2001) measures inter-sectoral dependence and index of vertical integration by using he Rasmussen indices, in order to estimate the multiplying effect of each

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activity on the gross output of the rest of the economy. The study shows that the industrial activities are the major pace setter for services growth. Bathla (2003) on the other hand finds non-existence of short run relationship between primary and secondary sectors. However, strong evidence of long-run equilibrium relationship is found among the primary, secondary and the specialized services sectors. A study by Saikia (2011) shows that there is no significant interdependence between primary (agriculture) and tertiary (services) sectors but there do existed strong interdependence between secondary (manufacturing) and tertiary sectors which improved in the post-reform period. Further, there have been studies on identification of key sectors of the Indian, as Ashwani and Vashisht (2012) using the tables for the years 2003-04 and 2006-07 find that the classification of the sectors based on linkage indices value remains more or less changed. Uisng the econometric techniques and input output analysis, Singh and Kaur (2014) analyses inter-sectoral linkages in the Indian economy by utilising annual data from 1950-51 to 1999-2000 on GDP as well as input-output tables from CSO for the years 1968-69,1979-80,1989-90,1993-94,1998-99,2003-04. They observe from production linkages that input dependence of services sector are more aligned with industrial sector than with agriculture. Recently, Varke and Panda (2018) using annual panel data set for 15 general category states for the period 1980–1981 to 2012–2013, find long-run equilibrium relationship among three sectors of the economy in the Indian states. The study indicates that the industrial sector contributes positively in harmonizing the growth of agriculture, but the progression in services affects agricultural growth undesirably. Keeping in view the review the studies on inter-sectoral linkages, the present paper thus provide a re-look at the same with the help of more recent data available on sectors. Following the introduction, section II provides description of data sources followed by methodology in section III. Section IV elucidates the results and analysis respectively. The final section concludes the study.

Description of Data

The calculations for sectoral linkages are based on the World Input-Output Database (Timmer et al., 2016) that provides the values of input-output transactions among 56 industries for 28 EU countries and 15 other major countries including India in the world for the period from 2000 to 2014. It is based on ISIC Rev.4. The data is expressed in millions of dollars. National Input Output tables (NIOT) in current dollars at purchaser's prices for manufacturing industries for Indian economy for the year 2000 and 2014 has been obtained from WIOD.

Methodology

In this section, we discuss the methodology employed in order to examine the inter-sectoral linkages of manufacturing sector. The methodology adopted in this study is based on the input-output approach, which was originally developed by Wassily Leontief (1936). We have discussed two important linkage concepts namely, backward linkages and forward linkages that have been measured by using Leontief (1936) model following the methodology developed by Miller and Blaire (2009), and the supply driven model by Ghosh (1958) respectively. The said concepts lead us to the identification of high linked sectors (key sectors) of the economy.

An input-output framework with n industries for an economy can be expressed in linear form as:

$$X_i = \sum_{j=1}^{n} X_{ij} + Y_i \qquad i = 1, 2, 3 \dots n \qquad \dots (1)$$

where, X_{ij} is the output of sector i consumed by sector j, to all types of consumption and for final consumption denoted as Y_i. Further, the proportion of each input to the output of sector j is denoted by:

$$a_{Lij} = \frac{X_{ij}}{X_j} \qquad i, j = 1, 2 \dots n \qquad \dots (2)$$

a_{Lij} is called input or technical coefficient and gives the direct input requirement of the ith sector for producing one unit of output of jth sector excluding the indirect effects involved in production process. Thus, abovementioned equation (1) is formulated with equation (2) as Leontief production function equation (3):

$$X_i = \sum_{j=1}^{n} a_{Lij} X_j + Y_i \qquad i, j = 1, 2, 3 \dots \qquad \dots (3)$$

where, X is endogenous and the column final demand, Y is exogenous. In matrix notation equation (3) is being written as:

$$X = A_L X + Y \qquad \dots (4)$$

where, A_L is the n x n coefficient matrix consisting of standardized elements of a_{Lij}, obtained by dividing each element of the column of the flow matrix by the total input of the buying sector. This equation is

a fundamental equation of the Leontief model.

Further, equation (4) can be written as:

$$X = (I - A_L)^{-1} * Y = L_{ij} * Y \qquad \dots (5)$$

where, $(1-A_L)^{-1}$ known as Leontief Inverse or matrix multiplier, gives both direct and indirect requirements of inputs. While direct inputs are those purchased by the sector under consideration, indirect inputs are those purchased by all other sectors in which production has to adjust in order to supply inputs to specific sector.

An alternative analog to the Leontief input-output model is Ghosh model which was formulated by Avijit Ghosh in 1958. This is also called supply-driven model and relates sectoral output to primary inputs. The primary inputs consist of value added components. The core assumption of this model is that output distribution patterns of inter-industry flows are proportionally fixed by sectoral origin (Temurshoev, 2004). Thus, sectoral inputs are described by primary inputs used which consists of value added components. Let V_j represents the total value added payments of sector i.

Thus, Ghosh (1958) supply driven model is given by:

$$X_j = \sum a_{G_{ij}} X_i + V_j \qquad \dots (6)$$

where, X_j is total input for sector j, V_j is the primary input (or the value added) of the same sector, and $a_{G_{ij}}$ is the output or allocations coefficient of sector j to sector i which is calculated using Equation

$$a_{Gij} = \frac{X_{ij}}{X_i} \qquad \dots (7)$$

Thus, in matrix notation, Equation (2.7) is represented as:

$$X' = (I - A_G)^{-1} * V = G_{ij} * V \qquad \dots (8)$$

where $(I-A_G)^{-1}$ is called Ghosh inverse (Ghosh, 1958). Thus, the rows of a Ghosh inverse matrix represent by how much one unit of primary input in the sector i leads to supply from this sector i to its downstream sectors j.

The input-output methodology presented in the form of Leontief model and Ghosh model is useful as these models can incorporate inter-relationships between various sectors and allow us to compare inter-sectoral linkages in the Indian economy.

Measurement of Linkages

The basic parameters for inter-sectoral linkage are 'backward and forward linkages'. Here, the backward linkage of a sector measures the changes in output of all the sectors resulting from unit increase in its output. While the forward linkage of sector measures the change in its output resulting from unit increase in production of all the sectors taken together (Miller and Blaire, 2009). These linkages may be further differentiated into direct and total linkages, wherein total linkages include both direct and indirect linkages to the other sectors of the economy.Total linkages also represent the multiplier effects and therefore total backward linkages are equivalent to the output multiplier reflecting the cumulative revenues induced by one additional unit of final demand for a certain commodity (European Commission, 2008, Miller and Blair, 2009). On the other hand, total forward linkages on the other hand represent the input multiplier which reflects the effect on the total output for all sectors of the economy associated with an additional unit of primary inputs for a particular sector (Miller and Blaire, 2009). In order to undertake reliable comparison of sectoral linkages and to calculate the relative strength of the total linkages, backward and forward linkages are normalized according to Rasmussen (1956).

Table 1: Linkage measures

	Direct Linkages	Total linkages (multiplier effects)	Normalized linkages
Backward Linkages	$B.L. = \sum_{j=1}^{n} a_{Lij}$	$B.L. = \sum_{j=1}^{n} L_{ij}$	$U_j = \dfrac{\frac{\sum_j L_{ij}}{n}}{\frac{\sum_{j=1}^{n} L_{ij}}{n^2}}$

Forward Linkages	$F.L. = \sum_{j=1}^{n} a_{Gij}$	$B.L. = \sum_{j=1}^{n} G_{Lij}$	$U_i = \dfrac{\frac{\sum_i G_{ij}}{n}}{\frac{\sum_{i=1}^{n} G_{ij}}{n^2}}$

Source: Chenery and Watanabe (1958), Miller and Blaire (2009) and Rasmussen (1956).

Identification of Key Sectors: Further, according to Hirschman (1958), the priority sectors or the key sectors of the economy would be those having high values of backward and forward linkage effects (i.e. greater than one).

Results and Analysis

In this section, we have presented the linkage measures considering the input output tables for the years 2000 and 2014. Table 2 shows the direct backward and forward linkages of the manufacturing industries. Here the direct effects are the production changes required to produce the product. It may be seen from Table 2 that 'food products, beverages and tobacco products' has the highest direct backward linkage using the Chenery–Watnabe method (1958) while in case of direct forward linkage 'other non-metallic mineral products' has the highest position for both the years 2000 and 2014. Further, the direct forward linkages remained same over the period under consideration for the manufacturing industries namely, 'paper and paper products', 'printing and reproduction of recorded media', 'basic pharmaceuticals product and pharmaceutical preparations'. However, manufacturing industries namely, 'wood and products of wood and cork except furniture; manufacture of articles of straw and plaiting materials', 'printing and reproduction of recorded materials' and 'furniture and other manufacturing' have recorded moderate increase in the direct backward linkages. During the period under consideration, the direct forward linkages of 'coke and refined petroleum products', 'chemical and chemical products', 'basic pharmaceuticals products', 'electrical equipment', machinery and equipment', 'motor vehicles, trailers and semi-trailers' and 'other transport equipments witnessed fell from the period 2000 to 2014. Among these industries, other transport equipments witnessed the highest fall in its direct forward linkage coefficient from 2000 to 2014. Also the industries that witnessed fall in both direct and backward linkages are 'coke and refined petroleum products', 'chemicals and chemical products', 'basic pharmaceutical products', 'other non-metallic mineral products', 'electrical equipments', 'machinery and equipment', 'motor vehicles, trailers and semi trailers', and 'other transport equipment'.

Table 2: Direct Backward and Forward Linkages for the Manufacturing Industries for the years 2000 and 2014

S.No.	Industries	2000		2014	
		Direct (F.L.)	Direct (B.L.)	Direct (F.L.)	Direct (B.L.)
1	Food products, beverages and tobacco products	0.22	0.79	0.24	0.83
2	Textiles, wearing apparel and leather products	0.26	0.67	0.28	0.70
3	Wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	0.48	0.48	0.60	0.53
4	Paper and paper products	0.68	0.61	0.68	0.65
5	Printing and reproduction of recorded media	0.42	0.57	0.42	0.64
6	Coke and refined petroleum products	0.62	0.46	0.43	0.23
7	Chemicals and chemical products	0.74	0.63	0.68	0.59
8	Basic pharmaceutical products and pharmaceutical preparations	0.19	0.63	0.18	0.61
9	Rubber and plastic products	0.55	0.64	0.53	0.67
10	Other non-metallic mineral products	0.80	0.56	0.79	0.51
11	Basic metals	0.69	0.54	0.67	0.52
12	Fabricated metal products, except machinery and equipment	0.59	0.54	0.61	0.56
13	Computer, electronic and optical products	0.42	0.59	0.49	0.62

14	Electrical equipment	0.55	0.61	0.45	0.60
15	Machinery and equipment n.e.c.	0.44	0.54	0.41	0.57
16	Motor vehicles, trailers and semi-trailers	0.43	0.68	0.28	0.66
17	Other transport equipment	0.51	0.62	0.19	0.48
18	Furniture; other manufacturing	0.28	0.56	0.43	0.64
19	Repair and installation of machinery and equipment	0.01	0.02	0.01	0.02

Source: Authors calculation based on National Input Output Tables obtained from WIOD (Timmer et al. 2016)

Again, while we consider both direct and indirect effects using the Rasmussen method (1956), where the total (direct + indirect) backward linkages also represent the output multipliers and total (direct + indirect) forward linkages represent input multipliers, we find from Table 3 that 'chemicals and chemical products' have the highest total forward linkage. The total forward linkages of 'chemicals and chemical products' of 2.48 and 2.28 for the year 2000 and 2014 respectively implies and for a unit increase in the output of this industry, it will lead to increase in the output in the overall economy by 2.48 and 2.28 units. Further, the total backward linkages have been relatively higher than rest of the manufacturing industries for both the years for 'rubber and plastic products' and 'motor vehicles, trailers and semi trailers'. The total backward linkage coefficient of 2.38 for 'motor vehicles, trailers and semi trailers' for the year 2000 and 2.22 for the year 2014 implies that for a unit increase in the output of this sector, through direct and indirect effects, the additional demand created for output in other sectors would be 2.38 and 2.22 units.

It may also be observed from the Table 3 that more than 50 per cent (11) of the industries out of the total manufacturing industries, in the year 2000 and 2014, total backward linkages were higher than the total forward linkages. These industries include 'food products, beverages, and tobacco products', 'textiles, wearing apparel and leather products', 'wood and products of wood', 'paper and paper products', 'printing and reproduction of recorded media', 'computer, electronic and optical products', motor vehicles, trailers and semi-trailers', 'electrical equipment', 'machinery and equipment', and 'other manufacturing'.

Table 3: Total (Direct + Indirect) Backward and Forward Linkages for the Manufacturing Industries for the years 2000 and 2014

S.No.	Industries	2000		2014	
		Total F.L.	Total B.L.	Total F.L.	Total B.L.
1	Food products, beverages and tobacco products	1.35	2.26	1.38	2.29
2	Textiles, wearing apparel and leather products	1.38	2.20	1.42	2.21
3	Wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1.76	1.64	1.96	1.72
4	Paper and paper products	2.26	2.07	2.24	2.10
5	Printing and reproduction of recorded media	1.77	2.10	1.77	2.19
6	Coke and refined petroleum products	2.20	1.67	1.79	1.33
7	Chemicals and chemical products	2.48	2.26	2.28	2.08
8	Basic pharmaceutical products and pharmaceutical preparations	1.33	2.25	1.30	2.13
9	Rubber and plastic products	2.02	2.29	1.97	2.28
10	Other non-metallic mineral products	2.19	2.03	2.14	1.86
11	Basic metals	2.31	1.94	2.20	1.83
12	Fabricated metal products, except machinery and equipment	2.04	2.00	2.00	1.99

13	Computer, electronic and optical products	1.75	2.09	1.85	2.13
14	Electrical equipment	2.06	2.16	1.77	2.09
15	Machinery and equipment n.e.c.	1.82	2.04	1.69	2.03
16	Motor vehicles, trailers and semi-trailers	1.77	2.38	1.45	2.22
17	Other transport equipment	1.91	2.24	1.30	1.83
18	Furniture; other manufacturing	1.47	2.01	1.73	2.18
19	Repair and installation of machinery and equipment	1.00	1.00	1.00	1.00

Source: Authors calculation based on National Input Output Tables obtained from WIOD (Timmer *et al*. 2016)

According to Hirschman (1958) sectors with both high backward and high forward linkages can be classified as key sectors of the economy. In normalized form, this comprises sectors with both backward and forward linkages greater than one (Miller and Blair 2009). In this respect, Table 4 provides the results for the normalized backward and forward linkages for the manufacturing industries for the years 2000 and 2014. It may be seen from the table that there are 12 manufacturing industries namely, 'wood and products of wood', 'paper and paper products', ;printing and reproduction of recorded media', coke and refined petroleum products', 'chemicals and chemical products', 'rubber and plastic products', 'other non-metallic minerals', 'basic metals', 'fabricated metal products', 'computer, electronic and optical products', 'electrical equipments', and 'machinery and equipments' that have maintained both high normalized backward and forward linkages. Thus, these sectors are the key sectors for the economy.

Examining the normalized linkages vis-à-vis 25 focus sectors under Indian Government 'Make in India Programme', it has been observed from Table 4 that the 'textile, wearing apparel and leather products' and 'pharmaceuticals' have high have high normalized backward linkages and therefore, in order to make them the key sectors of the economy, their forward linkages with other sectors of the economy are required to be strengthened. Further, 'chemicals and chemical products' and 'paper and paper products' are the industries that have the relatively higher normalized backward and forward linkages than the rest of the manufacturing industries. Between the two, 'chemicals appear to be the focus sector under the 'Make in India' programme. Considering the overall pull and push effect of the 'paper and paper products, it is necessary that the industry may receive special focus by the policy makers.

Table 4: Normalized Backward and Forward Linkages for the Manufacturing Industries for the years 2000 and 2014

S.No.	Industries	2000		2014	
		Normalized F.L.	Normalized B.L.	Normalized F.L.	Normalized B.L.
1	Food products, beverages and tobacco products	0.84	1.44	0.89	1.51
2	Textiles, wearing apparel and leather products	0.86	1.40	0.91	1.46
3	Wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1.10	1.04	1.26	1.13
4	Paper and paper products	1.41	1.31	1.44	1.39
5	Printing and reproduction of recorded media	1.10	1.33	1.14	1.45
6	Coke and refined petroleum products	1.38	1.06	1.15	0.88

7	Chemicals and chemical products	1.55	1.44	1.46	1.37
8	Basic pharmaceutical products and pharmaceutical preparations	0.83	1.43	0.83	1.41
9	Rubber and plastic products	1.26	1.46	1.26	1.50
10	Other non-metallic mineral products	1.37	1.29	1.37	1.22
11	Basic metals	1.44	1.23	1.41	1.21
12	Fabricated metal products, except machinery and equipment	1.28	1.27	1.28	1.31
13	Computer, electronic and optical products	1.09	1.32	1.19	1.40
14	Electrical equipment	1.29	1.37	1.13	1.38
15	Machinery and equipment n.e.c.	1.13	1.29	1.08	1.34
16	Motor vehicles, trailers and semi-trailers	1.11	1.51	0.93	1.46
17	Other transport equipment	1.19	1.42	0.83	1.21
18	Furniture; other manufacturing	0.92	1.28	1.11	1.43
19	Repair and installation of machinery and equipment	0.62	0.64	0.64	0.66

Source: Authors calculation based on National Input Output Tables obtained from WIOD (Timmer et al. 2016)

Conclusion and limitations of the study

Using the National Input-Output Tables for India from World Input-Output Database (Timmer et al, 2016), the key sector analysis identify 12 manufacturing industries for the period 2000 and 2014 with both high backward and forward linkages. These include wood and products of wood', 'paper and paper products', 'printing and reproduction of recorded media', coke and refined petroleum products', 'chemicals and chemical products', 'rubber and plastic products', 'other non-metallic minerals', 'basic metals', 'fabricated metal products', 'computer, electronic and optical products', 'electrical equipments', and 'machinery and equipment. These key sectors are the strategically important sectors of Indian economy because of having large spillover effects on the overall production in the economy. The existence of linkages (both backward and forward) in majority of the sectors under manufacturing, implies that there is a need to lay additional focus on removing the constraint in achieving growth in the manufacturing sector. In this regard, however, the Indian Government has already taken step by launching 'Make in India' programme that aims at increasing investment in 25 focus sectors. But based on the findings of the study, 'textile, wearing apparel and leather products' have high backward linkages and also appears to be the two of the focus sectors, i.e. 'textiles and garments; and 'leather' under the 'Make in India'programme, therefore, it is important that the more emphasis now be laid on improving the forward linkages of these sectors.

The present investigation has been conducted adopting an adequate methodology, and accordingly the inferences have been made. But as every research has scope for further research, the present study can be extended in several ways including analysis the linkages of the manufacturing industries in augmented input output framework (analyzing the impact of household consumption and income on

the production structure of manufacturing industries). Further, by identifying the employment linkages of the manufacturing industries in order to assess the whether the sectors having high potential to generate output in rest of the industries simultaneously generates employment in other industries of the economy. Adding to this, using an environmental input output framework, it may be assessed whether the sectors with high output and employment linkages are environmentally sustainable.

As any standard methodology has its limitations, similarly in our study, the input-output tables have limitations that the intermediate inputs which are used in the production process and are provided in input-output model, assume to remain in fixed proportions regardless of scale of production, due to which changes in production technologies do not play any role in impact assessment.

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