

Research Article

THE ROLE OF ICT IN EXPANDING ECONOMIC GROWTH AND DEVELOPMENT IN THE INFORMAL SECTOR OF INDIA

Smt. NabanitaDe¹ and Smt. Paramita Chatterjee²

¹Department of Economics, Charu Chandra College, University of Calcutta, Kolkata, India

²Department of Computer Science, Charu Chandra College, University of Calcutta, Kolkata, India

ARTICLE INFO

Article History:

Received 15th July, 2017

Received in revised form 19th

August, 2017 Accepted 25th September, 2017

Published online 28th October, 2017

Key words:

ICT, Globalization, Informal sector, Economic opportunity, Human Capital, SMEs

ABSTRACT

The Information and Communication Technology (ICT) has been a pioneer and a powerful catalyst in addressing the needs and interest of the informal sector's income in developing countries like India. After Globalization it has a self conscious appreciation for the ICT sector's role in expanding Economic opportunities emerged. In the Informal Sector, a large section of people have poor livelihood choices-- in employment and entrepreneurship are constraint by a wide range of interdependent obstacles ranging from geographic isolation to market failures and political exclusion. Thus when we think about GDP growth, per capita income, reducing poverty, we should broadly about creating economic opportunities. Expanding opportunity would rightly be considered a responsibility of the Government towards their citizens. But in today's Global market environment various risk and opportunities provide reasons for business to engage. Network effect is a crucial for productive employment, expanding business or entrepreneurship development in the Informal Sector which enables the Indian Poor to manage their assets in the ways to generate incomes and options. In Indian formal companies often fail to reach the scale or leverage of which they might be capable--often due to market failures and Governance gaps. The SME's and Informal service sector plays a key role for bridging this gap. This paper illustrate the views how ICT help the Informal Sector to develop Human Capital i.e. improving education, skills of employees, business partners and members of the community. Secondly, building entrepreneurial capacity i.e. strengthening the small & medium scale industry association, market intermediaries, and Governments. Thirdly helping to optimize the "Rules of the Games" that is shaping the Regulatory and policy Framework and business norms that help to determine how well the economic opportunity system works and the extent to which it is inclusive of the poor.

Copyright©2017 Smt. NabanitaDe and Smt. Paramita Chatterjee. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Globalisation has had deep inroads in the India since post 1990s. It sets off, inter-alia, market liberalization and emergence of IT sector. IT industry enjoys natural comparative advantages of 12 hour time gap with most of the overseas countries. In India, a large part of the economy is informal sector or unorganised sector where low-tech tools are widely used. There is also a growing literature on the use of ICTs by informal workers, largely focused on the use of mobile phone applications to facility financial or payment services. Some informal workers are using digital platforms or mapping software in their work. Waste pickers in Bangalore, India are using a web-based platform and data base to connect with households and scrap dealers; and informal transport operators are using a digital mapping to identify improved routs and reach hotspot areas [1].

There is also growing interest in innovation within the informal economy[2], but most of the studies focus on the behaviour or resources of the individual informal worker (i.e., whether s/he is willing to take entrepreneurial risks and/or has cash to invest); the role of informal institutions (family, community, networks); and linkages with formal firms. Few of the studies focus on the impact of the formal policy and regulatory environment on the behaviour and activities of informal workers, especially as they relate to technology. Effective use of ICTs to expand economic opportunity for the poor people at the national, organizational and individual levels requires a certain set of skills. India is experiencing a *demographic dividend* as more than 50% of the population is in the working age group which can make 'India skill capital of the world'. It is estimated that by 2020, the average India will be 29 years of age compared to average age 37 years in China. However skilling this youth bulge constitutes a challenge particularly when there is prepondence of informal/unorganised sector. As par a survey carried out by

*Corresponding author: Smt. NabanitaDe

Department of Economics, Charu Chandra College,
University of Calcutta, Kolkata, India

the NSSO in 2009-2010, the total employment in the country was 46.5 crore comprising around 2.8 crore in organised and the remaining 43.7 workers in the unorganised sector. It is imperative to understand how ICT sectors location and utilisation improve or impede the competitive business environment under which the informal sector operates. Various authors (Cairncross, 1997; World Bank 2001.) have outlined the importance and impact of ICT on development. Better ICT services expand overall economic potential by allowing firms to be more accessible and hence more productive and also attracting more investment to a particular area. ICT may be required to meet basic business life support needs. The decision by business to locate in a particular area is greatly influenced by the availability of adequate information and appropriate communication networks and facilities.

LITERATURE REVIEW

India is well-known around the world for its rapid economic growth rates over the last fifteen years or so, fuelled in part by the spectacular growth in its export-oriented software and ICT based services sector. In terms of pro-poor growth and productivity, ICT and IT-enabled services have added a significant amount to growth and export revenues in the countries like India and Mauritius. Although it is true that the poor are unlikely to gain directly; there are significant indirect effects on poverty in the form of remittances, dynamics of employment incentives, taxes and indirect consumption. Although only a small step, any small externalities from IT-enabled services in terms of innovations are welcome (see Ndulo 2007). Many other countries like India as a model for global outsourcing try to initiate elements of this and in their own strategies (Carmel 2003; Heeks and Nicholson 2004). The X1 plan (2007-2012) observes that IT has marked a turning point in the history of global trade and services. India has found its niche in the IT world and is regarded as premier destination for global sourcing of IT & ITES. The vision of the X1 plan is to make India a knowledge super power among the developed nations (Planning Commission 2008). Pradhan (2002) finds an interesting paradox in the growth process of the Indian economy, namely, that there is not much change in income inequality even though there are large changes in the educational levels of the population over time. The trade effect on the relative demand for skilled labour has been shown to be very important for India by Wood & Calandrinio (2000) also in a SAM (social accounting Matrix) based comparative analysis of the impact of trade liberalization on human resources in India.

Concept of Informal Sector

Keith Hart, an anthropologist first introduced the term 'informal sector' (in a Third world context) in an article 'Informal income opportunities and urban employment in Ghana' in 1971. He used the term to describe a part of the urban labour force, which works outside the formal labour market. The 17th ICLS (International Conference of Labour Statisticians) defined informal employment as comprising the total no. of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises or households during a given reference period.

Individuals and Informality

Individuals find the informal sector an attractive source of income because *entry is easy*, it requires little capital and equipment, it can easily accommodate a small, one -percent operation, and the skills required are low (Charmes, 2000a) [3]. It is not generally desirable for an economy to rely on this type of informal labour for economic growth. These informal enterprises do not pay taxes and contribute little to capital or knowledge creation. These are mainly subsistence operations that keep those in the lowest strata of income levels alive. Individuals who work in the informal sector remain poor because the income that they generate from their efforts is *low* (Charmes, 2000b). This is in part because entities in the informal sector remain intentionally small, due to the fact that more capital-intensive firms can be more easily detected (Loayza, 1997). Labourers in the informal sector are poorly protected; they have no formal labor contracts and rarely have the opportunity to improve their skills through formal training (De Soto, 1989; Loayza, 1997; Orlando, 2001).

Factors that lead to informality

As Amuedo-Dorantes (2004) indicates employment in the informal sector can be supply -led i.e. individuals opt to work in the informal economy because the value of their marginal income in either the formal or the informal sector, which means they have determined that they can make slightly higher earnings working in the informal sector. An alternative reason why some individuals decide to work in the informal sector is because their specific personal characteristics or institutional barriers, make it difficult for them to find a job in the formal sector (Dobson & Ranlogan -Dobson, 2012) . The other explanation is that the demand -led rational by which individuals find it difficult to secure employment or to start a company [3]. The firms in the developed regions having better accessibility to loans are able to utilize their resources properly and perform better which ultimately helps to earn a higher rate of return on capital. But, firms in a developed region may be able to find a better market for their products throughout the year i.e., both in peak and lean seasons [16]. The informal firms face the problem of competition with larger units for capturing a market share. Further, firms producing their products within the household premises are more inefficient than the ones operating outside the household premises [4].

Formal-Informal Sectors' Linkages: The formal and informal sectors are linked through different ways such as, consumption linkages (i.e., one sector's products being consumed by the other), *technological linkages* (i.e., technology transfer from one sector to the other), informal marketing chain (i.e., a disorganized mass of street vendors and merchants being well coordinated by a group of middle men dependent on the formal firms), informal supply chain (i.e., informal workers serving as suppliers of inputs to the local buyers who, in turn, sell the products to the formal industry through wholesalers). Thus, we have measured the combined impact of the linkages between formal and informal sectors on economic growth (Feder (1982). Since in India a large proportion of surplus labor exists, the growth of labor force may not always have a positive impact on output. Further, with an increase in the marginal productivity differences between the formal and informal sectors, *the externality effect* of the formal sector decreases, while the

externality effect of the informal sector increases. Assuming that the formal sector always has a higher productivity, one can say that with an increase in marginal productivity differences between the two sectors the market share of informal sector decreases. This happens because an increase in the marginal productivity differences implies the movement of relative prices in favor of formal sector. If the informal sector is less productive, it still has a large externality effect besides making a significant contribution to economic growth [4].

Data Description & Analysis

The present paper is largely based on secondary data. Data related to concept of informal sector, informal employment, and also contribution of ICT for education, skill and employment generation. Data has collected from research articles, Journals and Magazines, authorized web sites etc.

Employment of the informal economy

Table I Employment in the informal economy in non-agricultural activities by component and sex of India

Sex	Persons in informal employment (% of non agricultural employment)	Persons employed in the informal sector (% of non agricultural employment)	Persons in informal employment outside the informal sector (% of non agricultural employment)
Female	84.7	59.4	26.2
Male	83.3	69.4	14.7

(Source: ILO 2010)

From this table it is observed that the rate of female informal employment and outside the informal sector is higher than male but in case of informal sector the percentage of male is higher. From table 1 the following figure (1) depicts this phenomenon.

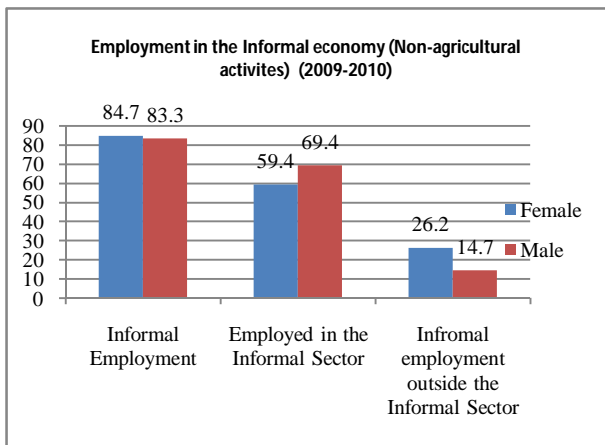


Fig 1

ICT for Human capital formation: One important part of human capital is to achieve basic formal education. In our society 'Education system' involves formal as well as non-formal forms. Usage of ICT is one of the way by which India's large population base can be effectively reached .ICT applications are becoming indispensable parts of contemporary culture, spreading across the globe through traditional and vocational education. In India, mainly education system has three tiers (primary, secondary, college or higher level)[17]. In all these levels of education ICT can be utilized for better teaching learning process and improving

quality of education. The following table shows the employment in ICT by educational status.

Table II Educational Status of ICT workers

Educational Qualification	Self Employed	Regular Worker	Casual worker
Up to Primary	2.75	9.03	18.73
Middle	3.78	8.97	12.18
Secondary	13.56	19.30	40.34
Higher Secondary	27.13	17.96	17.00
Graduation & above in engineering	15.81	9.21	4.07
Graduate & above in other subjects	36.98	35.53	7.68
Total	100.00	100.00	100.00

N.B. [11]

From this table the following figure(2) depicts the percentage of educational status of self employed, regular and casual workers .The educational status of self employed and regular employees are greater than the educational profile of the casual workers.

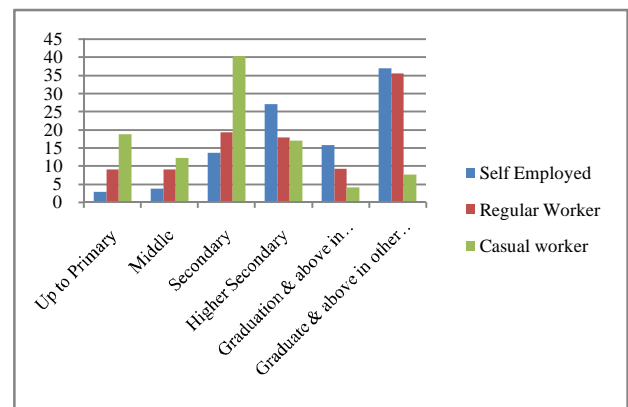


Fig 2

Role of ICT for Skill Development

ILO define ICT in their 'World employment report 2001'. ICT industry is divided into manufacturing industries and service industries: The manufacturing of telecommunications equipment, computers, semiconductors, and other electronic equipment and the provision of telecommunication services, computer services and software define the core ICT sector. ICT is encouraging the development of small and medium sized businesses (SMB) and the role that SMB sector can play in promoting economic and social development by creating opportunities for employment [8].

New business models and market configurations enabled by ICT, including business process outsourcing, provide SMBs with access to new market and new sources of competitive advantages.

Distribution of employment within ICT sector

The contribution of employment of ICT sector in total employment is very small of the total employment. Broadly there are two types of workers employed in the ICT sector, one organised and other unorganised employment. The rural areas have substantial employment in telecommunication segment only. However the other segments of ICT are completely dominant in the urban areas [11].

Table III Employment in ICT sector on the basis of household survey

Sector	% Share of Rural	% Share of Urban
Manufacturing	11.63	88.37
Trade	3.22	96.78
Telecommunication	37.29	62.71
IT and ITES	5.20	94.8
Total	17.29	82.71

Source: NSSO 55th round (1999-2000). Note: Employment includes that of Usual Principal Status Workers only

In contrast to the general perception a substantial part of employment in the manufacturing sector (following figure 4) of total ICT sector. Employment in IT captured in industrial classification but there is no distinct industrial code specified for IT enabled services. Therefore it might not have been properly captured.

Distribution of Employment within ICT

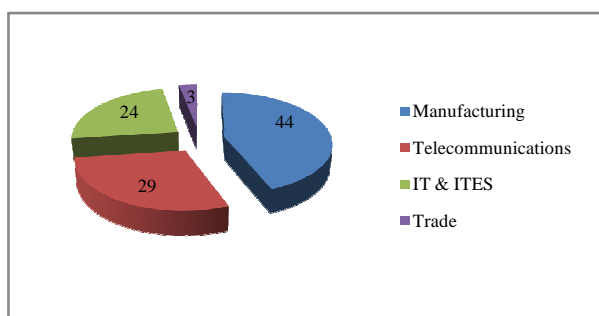


Fig 3

Entrepreneurial Capacity generation by ICTs

The ICT positively affected the creation of new businesses or enterprise. The rationale for this relationship was that ICT remove the barriers to entry, providing information, business skills formation and access to the collective wisdom of many users willing to share their experience and expertise in any given area. It is argued that the informal sector is a critical component of an economy because it provides jobs, small business and income to a portion of the population that would otherwise have no other options. Some of these informal enterprises exhibit great sophistication, enabling owners and the small group of informal employees that they work with to operate under better conditions for themselves (Amuedo-Dorantes, 2004).

There have been multiple efforts by governments to try to reduce the size of the informal sector. This is because these informal entities use government services, but do not fully contribute to their provision.

ICT will contribute positively to the reduction of the informal sector [6]. Some steps of Government are:

Institutional Support for Subaltern Entrepreneurship: This has been achieved through **MUDRA** bank, to provide microfinance to entrepreneurs in rural hinterland of India.

Green Business Scheme: This scheme has been started by NSFDC. Financial assistance would be provided for those economic activities that could address the challenges of climate change, e.g., E-rickshaw, solar pumps and other instruments working on solar energy etc,

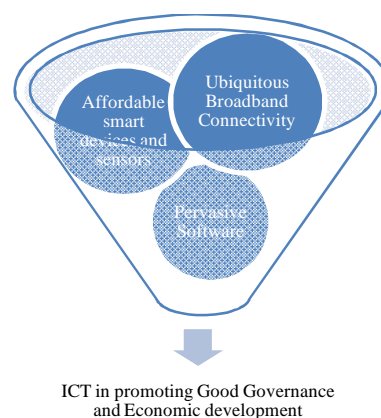
Stand up India: Under the umbrella of this scheme every single branch of a public sector bank is asked to support one entrepreneur each from women and SC/ST category [5].

IT Ecosystem provides barrier free avenue for women entrepreneurship [9].

ICT in promoting good Governance and Economic Development

World Bank suggests that firms using ICT produce faster sales growth, higher productivity and faster employment growth with the following....

1. **Affordable smart devices and sensors** : High mobile and internet penetration
2. **Ubiquitous Broadband Connectivity:** Fastest growing and most unique E-commerce market in Asia-Pac [7].
3. **Pervasive Software:** Thriving ecosystem for SMEs: Indian SMEs expected to spend over USD16Bn in 2017-18,2X of current spend.



ICT can, indeed, play a major role in supporting a culture of governance, democratic processes and civic values that uphold a good democratic system. Interventions on the so-called ‘digital governance’ usually involve processes on electronic interaction between Government and the citizens. Poor people have lack of digital knowledge of the wider socio-economic context of their poverty. This is where technical experts can help the poor [6]. Smart governance facilitates *pro-poor policies* as well as sound macroeconomic management. This not only promotes better administration and better business environment, but also saves *money incosts of transactions in government* operations (IICD 2001).It ensures the transparent use of public funds, encourages growth of the private, SMEs sector, promotes effective delivery of public services, and helps to establish *the rule of law*[15]. ICT interventions on governance need to be accompanied with legislative reforms. Some states in India have passed laws on right to information (RTI) while others have tried to enforce. Cyber legislation is also required to safeguard the privacy of citizens and to support paperless administration.

Community services provided by the Government with the help of ICT

E-enabling Citizen Services-Online by default, such as “MAINet” (Municipal Administrative Information Network) , IT-led modernization of postal services across 155k post offices etc.

Online processing and management of tax returns: Better controls on leakage, higher revenue efficiency like GST(Good & Service Tax) and using ERP(Enterprise Resource Planning) s/w like SPS , Oracle .

Aadhaar-India's Unique ID Biometric Platform scaled to 776 million-Technology driving social impact and inclusion

Socio-Economic empowerment and poverty alleviation through access to formal financial services:

- a. Leveraged in-house technologies such as Micro ATMs
- b. Remote hybrid infrastructure system for real time response
- c. On-site and On-call support at bank branches
- d. Training provided to approx. 2,500 business correspondents Across 4,300 villages [7]

Contactless prepaid wallet for masses to promote financial inclusion

Enabling remote healthcare (Tele-Medicine) and Empowering farmers (M-Learning &E-Learning)

CONCLUSION

This paper is organised to describe and analyze the economic performance (through human capital formation & employment generation) of the informal sector during the liberalization period by the help of ICT.[9] The IAMR, which maintains an information system for professional and technical manpower, could play a leading role in providing technical support at the local level, in coordination with employers and NGO's [18]. Given the constraint in the formal sector's employment, it has thus contributed to creating opportunities for groups of society which till now had limited employment opportunities [13], GDP growth, and expansion of small scale business opportunities and reduction of poverty. The ICT should not only address the needs of the organised sector, but the informal sector as well. Skills necessary to identify relevant labour market signals and interpret them meaningfully must be developed at the local level [18]. It can be also boost economic development partially not fully because in India where there are persisting and fundamental socio-economic inequalities, and lack of skilled professionals. Complementary social policies, regulatory government policy are required to prevent market failures and promote sustainable development.

References

1. Report on "An Analysis of the Informal Labour Market in India" Srija. A and V. ShirkeShrinivas, Committee on Unorganised Sector statistics, National Statistical Commission, Feb 2012, Confederation of Indian Industry
2. Naik Kumar ajaya, 2009 "Measuring the informal economy in Developing Countries" IARIW-SAIM Conference on Informal Sectors and Informal Workers in India .Kathmandu, Nepal, September 23-26,2009
3. Murillo-Garcia Martha,Ospina-Velez Andres Jorge "The impact of ICTs on the informal economy"
4. BairagyaIndrajit "Economic Performance of informal sector during liberalization period : An empirical study of India"
5. Prakash Guru "Social and Financial inclusion, Government initiatives over the past three years" Employment News, New Delhi, 27th May-2nd June
6. Viitanen-Kelles Anita "The Role of ICT in poverty reduction"
7. Report on "India Tomorrow transformed by Innovation and Technology" NASSCOM & BCG, 2015
8. BeleyD. Sanjay and BhatarkarS. Pravada, 2013," The Role of Information Technology in small and medium size business", *International Journal of Scientific and Research Publications*, Vol 3, Issue 2, ISSN 2250-3153
9. KumariSaroj, 2015," Role Of Information Technology In Women Empowerment ", *Lakshya: Journal of Science & Management (LJSM)* - ISSN :2395-0862(Print) , 2395-1060(Online)
10. OECD, Organisation for Economic Co-operation and Development, (2004). Understanding Economic
11. SarkarSandip and Mehta BalwantSingh ," Employment Profile Of ICT Sectorin India" , Institute for Human Development, New Delhi
12. Informal Sector and Conditions of Employment in India NSSO 55th, 66th, 68th ROUND
13. Dr. Patil.B.R., 2016, "Indian IT & ITeS Industry-Contribution To Economic & Social Development Of India ", *International Journal of Advanced Trends in Technology, Management & Applied Science*, Vol II,Issue VI,July 2016.ISSN No.:2454-5678
14. ILO report 2010
15. Kramer William J., Jenkins Beth, Katz Robert S.,2007 "The role of Information & Communication Technology Sector in expanding economic opportunity", Economic Opportunity Series, Harvard University
16. Kumar Pawan, Anita, February 2014, "ICT and development in India", *International Journal of IT, Engineering and Applied Sciences Research (IJIEASR)*, ISSN No.:2319-4413, Vol 3, no 2
17. Mohammed Mustapha, SadiqMuhdAbullahi, 2015 "The Role of Information and Communication Technology in providing job opportunities for Youth in the Developing World" *Journal of Emerging Trends in Enginerring and Applied Sciences (JETEAS)* , 6(7) : 174-179, (ISSN : 2141-7016)
18. Gupta S P "Globalisation , Economic Reforms and Employment Strategy in India"

How to cite this article:

Smt. NabanitaDe and Smt. Paramita Chatterjee (2017) 'The Role of Ict in Expanding Economic Growth and Development in the Informal Sector of India', *International Journal of Current Advanced Research*, 06(10), pp. 6617-6621.

DOI: <http://dx.doi.org/10.24327/ijcar.2017.6621.0979>
