

# Information And Communication Technologies (ICT) As Social Innovation And Public Governance Tool For A Developing Country

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## Abstract

Information and Communication Technology (ICTs) plays an indispensable role in the socio-economic development of a developing country such as Pakistan. The ICT is being extensively utilized in the major cities of the country; which is why the country is seeing a higher growth rate of ICTs incorporation since the last few decades. This study aims to address the vital question as to how ICT tools and technologies can and are contributing to vital development and growth process of Pakistan. Using the scholarly literature on ICT 4 Development (ICT4D), this secondary research performs an analysis of this topic by addressing different aspects and roles played by technology in country's economic and social development. The findings reveal that ICT is enabling pivotal transformation of the economy in Pakistan and is also improving the whole society by improving access of millions of people to many amenities and digital services. The study uses qualitative approach to conduct analysis and propose conclusions and recommendations. The study also forms a foundation for further researches in this field regarding ICT4D projects in Pakistan.

**Keywords:** Pakistan, ICTs, Socio-economic development.

## Background

Being a resource-poor, Pakistan faces many social problems and poverty in the most critical areas (Arif & Kanwal, 2016). Some 29.5% of Pakistan's population lives below national poverty line (Ministry of Finance, 2015-16). This is despite improving development indicators of the nation. For instance, on average, an individual Pakistani has US \$ 1,386 of per capita income (Ministry of Finance, 2014-15; The World Bank 2015). While seeking potential solutions to poor development conditions, it is often proposed by many that modern ICTs enable socio-economic development through enhancing civic engagement, providing access to information, and knowledge in the

development endeavors ((Boas et al., 2005; Heeks & Stanforth, 2014). Others maintain that marginalized people in the emerging south have limited access to information vital to improving their wellbeing. In such context, ICTs can improve access to basic information related to livelihoods. They can also assist people to make informed decisions which can reduce their probability of falling into poverty (Bowonder & Boddu, 2005). Alike, it is also widely argued that ICTs can help in boosting overall economic development by raising production and encouraging human capital development (Arif, 2018)

In Pakistan and worldwide, there has been a rapid change in the social sector. The

market as well as the consumers is demanding innovative and high-quality products and mechanisms to improve cost-effectiveness to become financially self-sustainable (Shareef, 2009). Leaders from many sectors are drawing more attention to social models which can have significant impact on societies in developing countries. This means that creating financially autonomous systems is a goal of ICT through social innovation to take this initiative to scale and transform lives. Amidst a tough regulatory environment, the sustainability and efficiency of many non-profits and government organizations is often challenged. John Hopkins University conducted a survey recently of non-profit leaders. The results show that in the past few years, more than two-thirds of organizations developed at least one innovation. However, these organizations failed to utilize their innovative goals due to lack of funding. These challenges in Pakistani context can be addressed using a robust and effective social innovation model to make organizations more profitable if not outright excellent. This implies that social innovation models in Pakistani context are crucial for building the future society to define concrete solutions to respond to economic challenges. The time is right for standing up for promoting the new era of social innovation and go beyond the status quo. This means that in many sectors such as educational, public, private, and social sectors, different types of innovations such as the ICT helps to solve a social and economic problem. This is vital for Pakistan to enable transformation of the current society where technology becomes a major weapon for finding new ways to coordinate and solve pressing problems.

There is a dire need in Pakistani context for the policy makers to understand the importance of social innovation as a driver and a tool for socio-economic development. ICT has been playing as a strategic enabler in the country since the 1970s by providing innovative mechanisms

and has placed Pakistani citizens at the forefront of improving their quality of life and wellbeing (Sharma, 2014). In the past three to four decades, ICT has improved the lives of more vulnerable and poor groups who remained at a risk of being marginalized or had no power to participate in social reforms. Their exclusion from the society shows that ICT-enabled social innovation is necessary in the country to promote social investment in the 21<sup>st</sup> century to propel the country towards an ever-lasting path of progress. This task is a huge challenge for the government and it is easier said than done. Learning the lesson from Europe in the last few decades, Pakistan can also enable ICT-oriented social innovation ecosystems. This will allow policy makers to enhance policy modeling through innovative approaches and also leverage innovative inter-sectoral governance schemes. Therefore, in this research, the focus is given more to the transformational aspect of the information and communication technology (ICT) to support social policy reforms and how it can help to reshape the future of this welfare state.

Besides, countries experiencing transition and complex social and economic development issues are fertile places for developing and trying or experimenting with new innovative ideas; these ideas can make countries like Pakistan thrive. This means that the country can use ICT and social innovation as a blend to eradicate social evils and become more progressing through slow but significant positive reforms. In Pakistan, there exists incredible potential and talent for social businesses to promote innovation. In the era of new emerging entrepreneurs and young leaders, Pakistani young women and men from remote areas are becoming social entrepreneurs (Kiringai, 2010). Moreover, the new public sector investment has also allowed leaders to form new ideas to handle challenges like clean water supply and energy issues. The poor communities in Lahore, Karachi, and other cities of Pakistan need state-of-the-art water purification

solutions in accordance with the standards of the World Health Organization (WHO) to offer significant relief. Moreover, in construction and finance sectors, low-cost engineering solutions developed and deployed in Ghonsla helped many people suffering the dire consequences of 2005's earthquake. This gave people a hope for link technological products to their homes to reduce fuel wood consumption ("Social enterprise is an emerging force in Pakistan", 2022). The bottom line is that Pakistan needs many of these ICT-based social innovation projects to beat the cycle of foreign aid to survive and thrive in the sub continent.

## 1. Introduction

Information and Communication Technologies (ICTs) is dominating and benefitting every single aspect of human beings' lives. Using and incorporating these tools and technologies is indispensable for modernization of social services and improving public governance. According to the OECD, social innovation is a crucial process that deals with implementing and designing new solutions to imply conceptual and organizational change that leads to overall improvement and wellbeing of communities and groups (Kiringai, 2010). Several initiatives are taken by the society which help in socio-economic and environmental issues and help to promote economic growth through social innovation. In order to fully support the general public or the civil society, it is vital to devise and deploy a useful social innovation framework that helps to fully tap into the potential of social innovation. This social innovationist crucial for addressing socioeconomic issues in the long run that helps people to build stronger resilience are anticipated to be panacea for many socio-economic problems in the developing countries. Therefore, ICT-enabled social innovation provides individuals and groups a sophisticated and more effective answer throughout their lives as a direct result of incorporation and utilization of information and

communication technologies (Qaisar, 2010).

Since ICTs are widely used in the development process by both public and private firms and SMEs (small and medium-sized organizations), it is a useful tool for supporting the much-need socio-economic growth in Pakistan. A comprehensive scholarly work in the domain of Information and Communication Technology 4 Development (ICT4D) and Information Systems states that ICTs are indispensable tools which effectively tackle many socioeconomic and development issues of the country as well as in the third world. (Smith et al., 2009; Walsham et al., 2007). Moreover, Furthermore, the work of (Zheng et al., 2010) clearly reveals not only the development potentials of ICTs but also, their current role in improving the well-being of the poor in the developing states like Pakistan.

Information and communications technologies (ICTs) help to promote socio-economic inclusion of actors in several contexts and also provide channels to foster social innovation. For instance, using ICT tools and technologies, societies are able to use useful tools to enhance effectiveness and efficiency of social service systems. Using of ICT in different processes and tasks allows automation of repetitive tasks to enhance the quality and efficiency of tasks (Theriou, 2014). This helps businesses to improve their external and internal tasks. This implies that incorporating ICT into services and tasks allows business managers and leaders to create new and innovative mechanisms to improve service delivery which are not possible to achieve otherwise. Based on the scholarly literature, social innovation does not comprise just one element, it has several elements such as divided into four components: Need-driven social innovation, collaborative innovation networks, fundamental change between stakeholders' relationships, and public value allocation. In Pakistan that is still in its developmental phases and going through tough economic

challenges social innovation can help policymakers to incorporate ICT-enabled social innovation which can help to improve welfare systems in the country to improve the state of poor. Moreover, it can provide more stronger and efficient social services in the country and will enhance the life-quality and wellbeing of people in the society.

As a part of social innovation in Pakistan, for the past few years, e-Government has emerged as a revolutionary tool or a strategy to enhance the management of public sector organizations on a global basis. According to the study of Sharma (2014), ICT-enabled social innovation is responsible for creating a positive impact on the society to help bringing a systematic change that comes from designing innovative and creatively new products and knowledge-sharing. This means that social innovation is responsible for per-to-peer collaboration that often leads to good organizational reforms that are shaped on the foundations of private-public partnerships.

Furthermore, there are several examples in the modern developed world related to social innovation as a tool to foster economic growth and development. For example, in Finland the project of the Ministry of Health and Social Affairs has started a project that is named as Shadow World. It aims to improve the lives of children of parents who often become victims of substance abuse by offering them the right information and facilitation/support to stand in the face of adversity. This organization is a crucial and the best example of social innovation that helps to support many families to deal with difficulties in their lives and also provide mentoring and education to people suffering from social and financial issues (Kettani, 2014). This helps them to get information through consultation services as well as message boards. Therefore, ICT-enabled social innovation incorporates high level services, accelerated processing, increased transparency, and low cost outputs to

improve e-Government and social development.

The other study by (Zakar & Zakar, 2009) does highlight the utility of info that information centers provided to farmers in Sialkot district. However, up to what extent that info influenced the agriculture production and access to market were not explored by the study. Thus, the literature on ICT-led prominent development initiatives is sparse in Pakistan. It is this gap that the present study intends to contribute to.

## 2. Problem Statement

Pakistan as a developing country needs social innovation through technology to make the most of its economic progress plans and endeavors. Infact, revamping the entire social landscape has been possible in some advanced European countries. For almost two decades, with the advent and widespread use of technology in the country, Pakistan has hailed the term “social innovation” that has been discussed by a few scholars in articles and conferences (Kettani, 2014). The fact remains that many programs by the government as well as from social entrepreneurs and other stakeholders have been launched which are nothing more than just a fashionable rebranding of conventional philanthropic tasks and are not sustainable on a large scale. This means that many entrepreneurs and social innovation advocates are deceiving themselves without developing a strong perspective on developing interventions which can help the government to reduce development and social challenges. Therefore, the problem exists in the country with not being everybody as a change-advocate to promote technology and embrace social innovation for humanitarian and development purpose.

The business sector has grown significantly over the years and it has become difficult for several established and new entrepreneurs to find a sustainable solution to solve society’s most perplexing issues. The question arises what can Pakistan do to capture the real essence of social

innovation by incorporating technology as a vital tool to progress towards prosperity? Not many people have yet to discover or understood the real meanings of social innovation through ICTs. People have been developing novel products, services, and frameworks. However, Pakistan still needs an effective and sustainable solution through social innovation and technology as a blend to work together. This problem needs a long-term and comprehensive solution for the society to create new relationships through social innovations and improve the capacity of citizens to act (Kiringai, 2010). Therefore, technology incorporation will help entrepreneurs, social actors, the government, and other organizations and individuals to become radical thinkers and doers to “convene”.

The reason for that is that in many developing countries, small and medium-sized organizations rarely think about social innovation through technology to enhance their effectiveness and efficiency. They often struggle to achieve the vital funds and compete against each other. Even though some entrepreneurs and government organizations are using powerful literary and technological solutions to promote breakthrough ideas, there is a significant lack

of widespread of these social innovation programs that incorporate and utilize ICT tools and technologies in Pakistan to offer the best hope of ever-lasting progress to the country. This means that new entrepreneurs can only hope to tackle challenges to reduce the dependence of the country on foreign aid. The term social enterprise or innovation is relatively an unknown or a new concept in Pakistan. They need better use of technology to engage in ventures which impact the society socially and change their fate.

In Pakistan, unfortunately, only a few large organizations have developed and implemented these models so far because they have a greater interest in improving and enhancing their social impact to align CSR goals. Social innovation ICT-based model is different from traditional CSR approaches. For instance, the characteristic of IT-enabled social innovation projects is the deployment of business models which provide social and economic value in addition to seeking a win-win relationship. Hence, these business models vary according to company’s goals and their understanding of aligning CSR with country’s economic growth to generate synergistic value (Shareef, 2009).

### 3. Conceptual Framework

#### 4. Literature Review

The literature related to ICT and social innovation mostly discusses the characteristics of several business frameworks and models to address and solve social issues in Pakistan and other developing countries. After the 2008's financial crisis globally, the European and world and developing countries focused on creating more sustainable and resilient societies. Scholars had to rethink the European Social Model that aimed to urge the EU states to improve and enhance their welfare systems (Sharma, 2014). This was aimed by focusing on re-engineering the social policy governance models. For instance, Social Investment Package (SPI) was launched by the European Commission with an objective of exploring the potential of social investment to drive economic development. Therefore, the reason why Pakistan needs ICT-enabled social innovation and governance is to fight and eradicate the evils of society such as poverty, inequality, and unemployment (Kettani, 2014).

According to the study published by Kettani (2014), social innovation is a

phenomenal thing that fosters social investment strategies and programs in a country to reform the lives of citizens. It is used as a powerful instrument or a tool by the advanced nations to improve welfare policies; which is why, social innovation is considered as citizen-focused which directly helps citizens to improve their capacities and create multi-sector partnerships. The goal of projects such as agricultural and e-governance programs in Pakistan has been regarded as a positive milestone and a good practice to strengthen the backbone of ICT-led initiatives in ICT4D research. Most of the work done in ICT4D also advocates that ICTs truly possesses the capacity to fundamentally change lives of millions of Pakistanis (Andre, 2008; Jakhar, 2018). At the same time, there is a lack of research to advance the proposal for developing a robust framework to improve the economic and social returns due to social innovation projects. Therefore, for a country that has seen many ups and downs politically and economically, the time is now to consider ICT-enabled social innovation that can address the vital human needs and also promote non-discriminatory policies and provide equal rights and opportunities to all

citizens (Kiringai, 2010).

Furthermore, companies and enterprises are integrating social innovation as an integral part of their system and models of management to enhance the impact of Corporate Social Responsibility (CSR) (Shareef, 2009). In the recent years, this integration has gained significant importance due to its focus on addressing directly or indirectly the problems faced by Pakistani people and entrepreneurs. These strategies will help to build better and stronger relationships between various stakeholders (Idemudia, 2008). Pakistani companies and organizations can significantly benefit from such efforts by using Social Purpose Business Models which help leaders and thinkers to address vital social issues and align them with new frameworks. Therefore, by keeping in mind the interest of the United Nations (UN), many transnational corporations in Pakistan can focus on Sustainable Development Goals (SDGs) to become a part of the big time development agenda in the future (Walsham, 2007). Therefore, in terms of bringing social value, these initiatives will allow organizations to improve their incomes and will also cover the costs of these interventions and projects.

The focus of much of this research is on discussing the socio-economic changes led by ICTs use in Pakistan's context. A key point that emerges from these studies is that ICTs have the power to transform the lives of millions of poor people irrespective of their geographical location. Thus, ICT4D research's key promises are surrounded by its incredible potential to improve social and economic conditions in emerging countries (Avgerou, 2008; Walsham et al., 2007). Likewise, other studies suggest that the potential contributions of ICTs in development process range from personal gains to communal benefits. For instance, while tracing the evidence for both of such benefits Jensen (2007) clearly revealed personal and social benefits of ICTs use and their welfare impacts on the selected fishery communities of South India. Most studies tracing ICTs impacts at the micro, macro,

and meso level also point to a mixed set of evidence. This implies that a huge body of scholars agrees that ICTs are fundamentally transforming societies in every aspect economically and socially (Kiringai & Fengler),

Some scholars also argue that ICTs provide answers to many questions to address developmental issues of South and West Asia (Kodakanchi et al., 2006). The fact remains that ICT-led socio-economic transformations is also taking place in some South Asian countries such as India that is well-documented (Gollakota et al., 2012; Huang & Umaphy, 2007). The social element of innovation through ICT focuses on the structuring of the society. The fact remains that innovation process developed impacts changes in the society which raises the importance of social dimensions. The concept of social innovation was discussed also by Weber and Marx because the introduction and incorporation of new technologies help to bring change in societies (). Taylor in 1970 gave the approach to social innovation by describing as a new tool for doing things differently to attend the issues of society such as crime and poverty (). The concept of social innovation grew in 1976 in the United States and Europe with the construction of new social constructs and relations. Therefore, the socio-economic settings of many European and African countries reveal a key contribution of ICTs in aiding the development process of a society. (Ariño et al., 2015; Bankole et al., 2015; Bollou & Ojelanki, 2008; Mugwisia, et al., 2015).

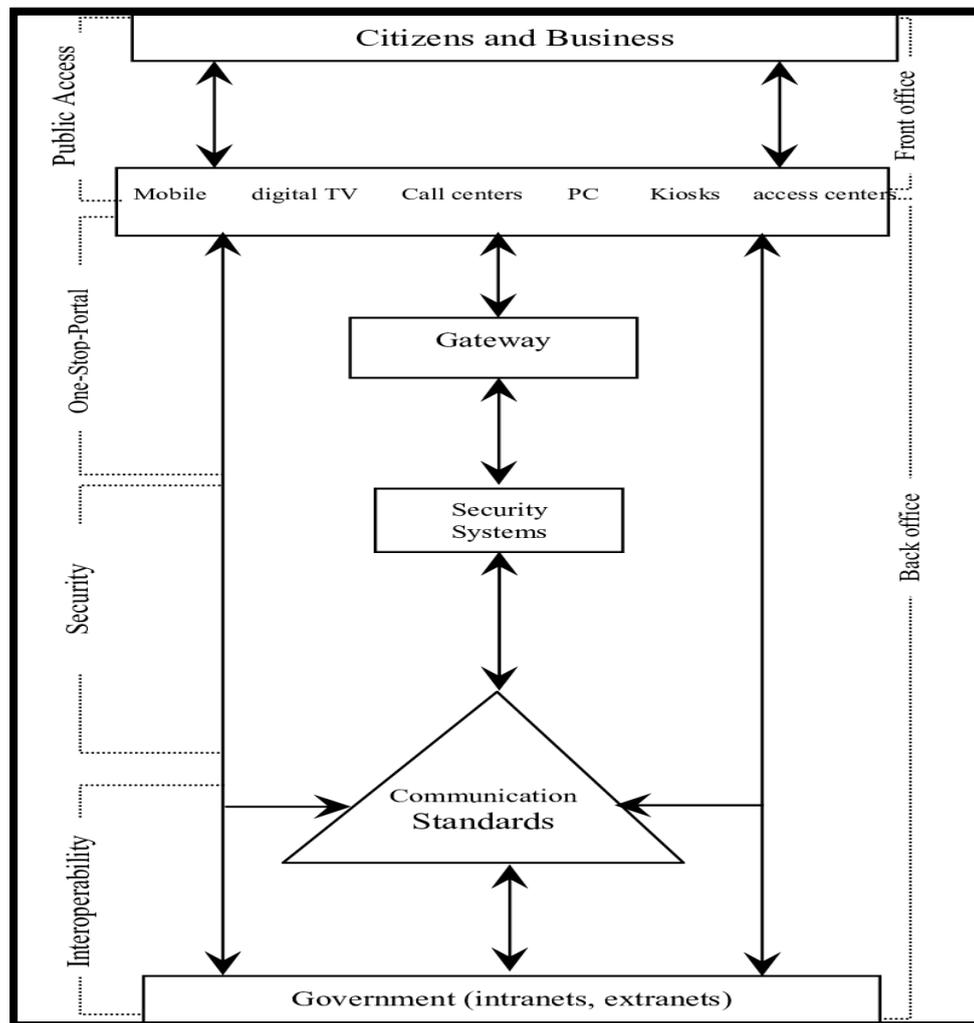
Moreover, Theriou (2014) describes the core elements of social innovation as new solutions, services, and products which help to focus on satisfying a social need and helps people to build new relationships and capacities. A key indication that emerges from these studies is that ICTs are positively contributing in the development process of emerging African countries. These elements expect to generate long and short-term

benefits for the citizens and promote the attention of governments towards social problems. This means that social innovation through ICT can be a development of something entirely new that is considered to be innovative in the current time. The major element of social element is the product or service or model which deals with moving forward with a unique idea and taking action to drive more social innovation. Moreover, the major element also relates to the efficiency of social innovation. The game of social innovation is helpful for the Pakistani society in this context because it can empower governments and organizations to use minimal resources and create a more significant impact. This impact can be cultural, social, comic, environmental, or institutional (Sharma, 2014).

Phills, Deiglmeier, & Miller, (2008) also discusses value creation from social innovation in a society. The study states that value creation is the process of increasing the value that currently exists using resources by using an innovative process. The objective uses like customers and organizations decide

the subjective quantity of the value. The value from a social perspective increases when societal members. In this sense, the enablement of ICT will definitely help Pakistan in the generation of value which can ultimately as a result enhance improvement of living conditions of people, provide them social justice, improve environmental conservation, social equity, and overall health of citizens. Therefore, in addition to improving education and awareness, ICT-enabled social innovation can remove barriers to social progress and will have a positive impact on the society as a whole instead of a particular social group (Gupta, 2006).

The following conceptual framework shows how Pakistani companies and government can adopt and implement the social innovation model to enhance the economic development of the country. The independent variables selected are Development and Aid Agencies, Local Government, Private Enterprises, and Social Entrepreneurs and their efforts to incorporate social innovation to promote the community.



**Figure 1:** E-governance structure Source: (Ahamdi et al., 2003)

The following model has been chosen for this study to embrace the role of ICT as an enabler of social innovation in Pakistan to enhance the lives of citizens. The framework shows that citizens and business both can play a huge part in promoting social innovation in the country. For example, private entrepreneurs and social organizations can play their role to foster and promote creation of mobile networks, television networks, call centers, Kiosks, and digital access centers to automate the economy. The public access to all these technologies and facilities through one-spot portal connected through Government intranets and extranets will allow room for social innovation and economic development (Sharma, 2014). These technologies and ICT tools will help to enhance the communication and

collaboration standards and processes in the country and will also provide secure services to communities and individuals to improve their lives as citizens. The eGovernment model is an excellent initiative and an example of Pakistan's progress in the next couple of years (Kettani, 2014).

A good example of IT-based social innovation is the Ghonsla pilot project initiated in the aftermath of 2005 earthquake was the best project to offer young entrepreneurs/engineers opportunities to improve the lives of citizens. It seeks to build relationships between the next generations of entrepreneurs in the country. The goal of such technological innovations and interventions is to ensure that the country is able to incentivizing the base economy and people can run the economy

based on “sustainable social enterprise models”. This can help Pakistan and its citizens to break the vicious circle of poverty and the endless cycle of foreign aid dependency (“Social enterprise is an emerging force in Pakistan”, 2022). This was also the time when the citizens of the country, for the first time, got access to the IT hardware. ICT development began in 1995 with the advent of the Internet which extended to 3 million homes within just a few years in the country. Realizing potential economic gains provided by a vibrant IT sector, the government of Pakistan established Pakistan Software Export Board in 1995 (Pakistan Software Export Board, 2015). The purpose of this institution is to facilitate IT industry and exports of the country and provide support to flourish the industry.

However, such institutions have not produced any profound results, as they are still underfunded. For instance, the national budget for Science and Technology is just Rs. 2.172 billion as compared to 2001 when the budget was six Billions (Sharma, 2014).

### **I. Research Methodology**

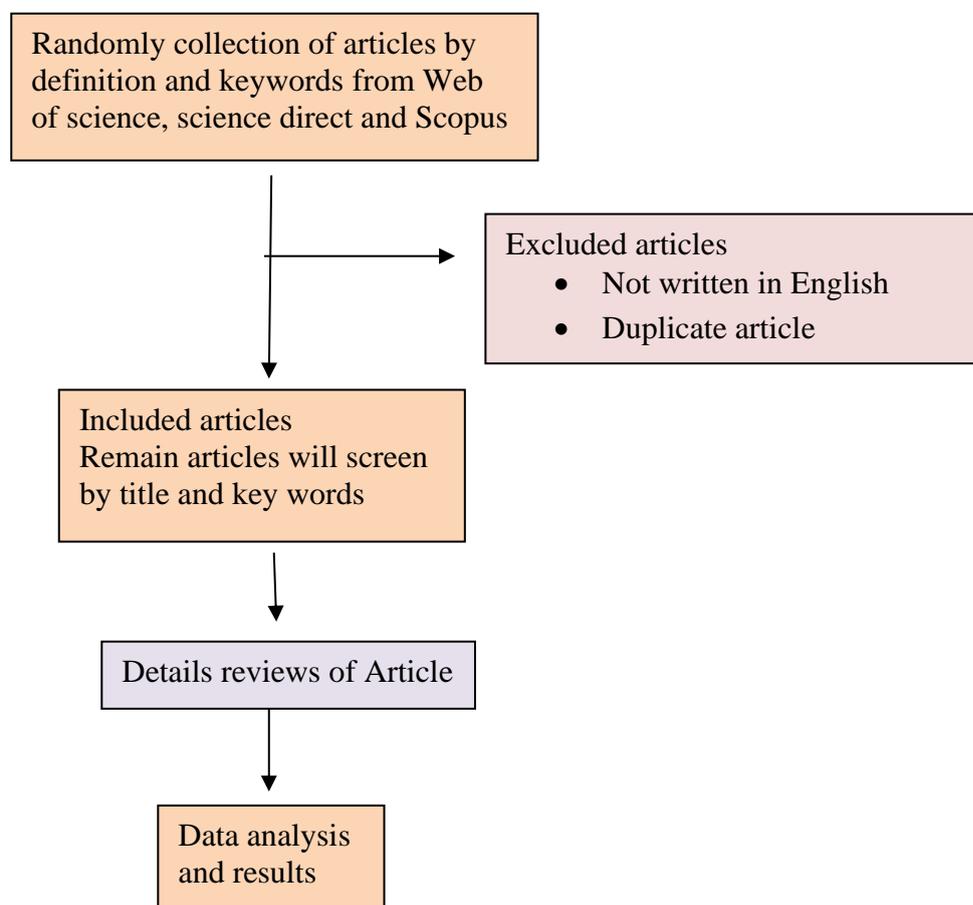
The current study is based on the quantitative research methodology. Quantitative research has four major types, including correlation, descriptive, experimental, and quasi-experimental. A descriptive design formulates a hypothesis after data collection, which requires observation (Theriou, 2014). The type of this particular research is ‘applied research’ which seeks to solve a specific problem related to social sciences. Two major types of research designs, such as qualitative research and quantitative, are

used in social science research. This research study uses quantitative design that involves numerical data and statistical information to form conclusions.

The instrument is developed using a quantitative survey questionnaire. The survey is developed by firstly choosing the type of quantitative research questions and putting them on a five-point Likert scale. The independent variables are used as predictors, whereas, the dependent variable is known as the outcome (Social Innovation). The instrument uses closed-ended questions from a set of chosen participants in the sample. The Sample size is 100 extracted from the population of managers and employees in Pakistani private organizations to discuss the data related to ICT-based social innovation.

Moreover, the research uses primary and secondary resources for selecting the appropriate and rich literature. The sample comprises 50 articles and surveys. The sampling technique used is convenient sampling because it helps to get the most conveniently available professionals to provide their honest views about this topic (Zheng, 2010). Therefore, the primary data is different from secondary data that shows the information from the sample of 100 Pakistani managers, officers, and administrators in the private sector organizations. Moreover, regarding data analysis, The SPSS software (Statistical Package for Social Science) is used for data interpretation and analysis of the collected data from these participants.

The following diagram explains the procedure of secondary data collection and analysis:



**Figure 2:** Data collection pathway (Source: Developed by author)

The following table shows that structure of the independent and dependent variables.

**Table 1 Research Variables in the Instrument**

Independent Variables	Dependent Variable	No. of Questions Per Variable
Development and Aid Agencies	Social Innovation and Economic Development of Pakistan	2-5 questions for each independent and dependent variable from each participant
Local Government		
Private Enterprises		
Social Entrepreneurs		

## 2. Discussion and Findings

The findings section can help to accept or reject the hypotheses underpinning this research related to the ICT-enabled technologies to foster social innovation in Pakistan. The research findings help to articulate the results derived from the obtained data to solve the research problem or answer the research questions (Walsham, 2007). The primary data was collected from

the people with that have specific demographics. The data shows that 79.73% of the participants belonged to the “male” category, whereas, 29.27% of participants belonged to the female category of gender.

The Pearson Correlation Analysis identify the significant relationships among all variables (Theriou, 2014). We are assuming that correlation is significant at  $p < 0.05$  in a 2-tailed test for  $N=100$ .

**Table 2: Interpretation of Correlation Values**

Variables	Correlation Values	Interpretation
Development and Aid Agencies	.053	Weak Positive Correlation
Local Government	.264	Weak Positive Correlation
Private Enterprises	.569	Moderate Positive Correlation
Social Entrepreneurs	.622	Strong Positive Correlation
	.	

The Pearson correlation table shows that there is a weak positive correlation between Development and Aid Agencies and Social Innovation and Development (in Pakistan). Similarly, there is a weak positive correlation between local Government and Social Innovation and Development. There is moderate positive correlation between Private Enterprises and Social Innovation and Economic Development, and there is strong positive correlation between Social

Enterprises (IV) and Social Innovation and Development (DV).

### Regression Analysis

The following table aims to provide the regression analysis results for the data collected and SPSS results that show the value of 'p' and R-square to show the relationship between independent and dependent variables.

**Table 3: Regression Analysis Results**

Independent Variable	Relationship with the Dependent Variable	Regression Values
Development and Aid Agencies	Negative weak relationship	p=.752 / Adjusted R-Square - 2.0%
Local Government	Weak positive relationship	p=0.094 / Adjusted R-Square 4.5%
Private Enterprises	Moderate positive relationship	p= 0.000 / Adjusted R-Square 29.6%
Social Entrepreneurs	Strong positive relationship	p= 0.000 / Adjusted R-Square 35.9 %

The Modal summary was calculated as well as the value of ANOVA for all the independent variables in the regression analysis. The results in the Table 3 show that The Modal Summary of linear regression shows the R-squared a 35.9 % variance. Since p= 0.000 which is 0.1, it is significant. These regression results show the viability of the model to provide a strong measure to explain the relationship of social innovation with Social Entrepreneurs (DV).

Similarly, for Private Enterprises, the values of regression analysis are p= 0.000 / Adjusted R-Square 29.6% which shows a moderate positive relationship between the independent and the dependent variable. The regression analysis values for the Local Government are p=0.094 / Adjusted R-Square 4.5% which also show a weak positive relationship between the local government and social innovation. Finally, the regression analysis also shows the values

$p=.752$  / Adjusted R-Square  $-2.0\%$  for the Development and Aid Agencies (IV) and Social Innovation and Development (DV) which highlights a weak relationship between the two variables.

### Instrument's Reliability

The reliability of a research instrument is ensured by selecting a proper test to measure the reliability of an instrument. We used the

Statistical Package for social sciences (SPSS) feature such as Chronbach Alpha to measure the consistency of the survey instrument. This is also known as the "coefficient of reliability" which often shows a value between 0 (the lowest reliability) and 1 (the highest reliability) (Smith, 2009). The following table shows the value of Chronbach Alpha as being a reliable one for this study.

**Table 3: Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.731	.731	100

The table shows that the instrument is reliable with a higher value than 0.06 from the scale of zero to one.

### Secondary Sources Analysis

As a result of this study, core directions of systemic innovation were identified based on international experience, as well as specific mechanisms for their implementation. The authors propose that, in addition to well-established mechanisms such as developing ICT solutions, the use of innovation mediation would be highly effective. Effective use of such mechanisms leads to the enhancement of the capabilities of social innovators, enabling small-scale social innovators to engage in solving social problems at a higher level, as well as accelerating, replicating and scaling up social innovations. Thus, despite rising interest within the academic community in the effectiveness of social innovation developments, social innovation remains poorly understood. The mechanisms for social innovation require more thorough investigation.

To improve the efficiency of social innovation, we believe, based on the study of international experience (Arslan-Ayaydin et al., 2014; Sharma & Parasar, 2014; Theriou

et al., 2014)

Urgent attention should be paid to combining economic and social innovation, the development of optimal innovative solutions in terms of both economic growth and development, and to ensuring the social stability and prosperity of society. The use of innovative mediation in the field of social innovation also requires further development: in particular, issues such as the economic feasibility of creating of such structures, and accessibility for small-scale forms of social entrepreneurship, require attention (Sharma, 2014). There is a need for an effective evaluation system focused on the results of social innovation processes. Moreover, due to recent events leading to mass migrations, the international community faces the challenge of diversity management from an intercultural aspect, which can be solved using new types of social innovation in this field.

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### **Quantitative Data Discussion**

The results from the quantitative as well as secondary sources data analysis show that urgent attention should be paid to combining economic and social innovation, the development of optimal innovative solutions in terms of both economic growth and development, and to ensuring the social stability and prosperity of society. Many scholars also advocate that the use of technology by development aid agencies, the local government, private enterprises, and social entrepreneurs will help to improve the speed of social innovation in Pakistan to compete with other Asian countries (Shareef, 2009). It will also help in promoting economic feasibility of creating new mechanisms and structures through an effective evaluation system that relies on results of social innovation. Also, the study by ( ) argues that match with our results by stating that diversity management from an intercultural perspective is a difficult challenge for Pakistan and the international community that requires technology use by private and government enterprises to boost social

innovation. This implies that the use of ICT solutions plus the innovation mediation would be highly effective. The effective use of such mechanisms leads to the enhancement of the capabilities of social innovators and will allow small-scale innovators to engage in solving more problems. This will allow boosting stakeholders' interest within the academic community to promote the effectiveness of social innovation growth in Pakistan that is still not understood comprehensively. Therefore, urgent attention should be given to combining economic and social innovation. This will surely result in the development of optimal innovative solutions in terms of both economic growth to guarantee the social stability and prosperity of this developing country (Kiringai, 2010).

Moreover, another study by Qaisar(2010) also suggests that mediation in the field of social innovation also requires further

development in the context of developing countries. Particularly, for improving the capability of entrepreneurship needs more attention of social entrepreneurs that is strongly associated with social innovation and economic growth of Pakistan according to our results. The local government and development aid agencies can also play their vital part in developing an effective evaluation system that is focused on the results of social innovation processes. This will reduce the challenges faced by Pakistani entrepreneurs and the government to promote social development and diversity management to enhance the intercultural relations by using technology as a tool (Kettani, 2014).

### **3. Conclusion and Recommendations**

The study's results in the light of scholarly literature and previous studies clearly help us to infer that wider and more effective the use of ICT in Pakistan to promote social innovation, stronger the link will become

between ICT and social and economic and cultural development. The use of ICT is paramount for local government to move towards electronic service provision (Beynon-Davies and Martin, 2010). Literature indicates that ICT has altered different aspects of life; how people live, how businesses run, and specifically how LGs interact with their citizens (Janssen et al., 2012; Reddick, 2009; Weerakkody and Dhillon, 2008). Recently, however, the adoption and development of these technologies in private domain has put a massive pressure on public domain to keep up with the same pace (Kamal et al., 2009). Therefore, it is extremely urgent and vital for Pakistan to focus on the innovation of development agencies, private enterprises, social entrepreneurs, and the local government in terms of ICT utilization and adoption to transform their administrative processes and improve the efficiency and effectiveness of interacting with citizens. This can help the country to transition successfully towards adopting e-Government practices as a norm like developed countries in Europe and Asia. Hence, the quantitative study recommends that Pakistan should:

- 1) Formulate (with stakeholders and citizens) a Russian social innovation strategy.
- 2) Implement a reasonable specialization strategy encompassing social innovation.
- 3) Support the development of social innovation networks and platforms tenable greater focus and co-ordination of socially innovative activities in Russia.
- 4) Plan and implement the creation of dedicated social innovation intermediaries in Pakistan – in particular, Living Labs.

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