

ICT-enabled innovation, enterprise value creation and the rise of electronic social enterprise

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Abstract

Purpose – The purpose of this paper is to develop a model of “electronic social entrepreneurship” by integrating social entrepreneurship and information and communication technology to enhance social enterprise effectiveness. Social enterprise has recently emerged as a contemporary form of enterprise to achieve sustainable social order. Thus, besides building economic value, a primary goal of these enterprises is to create superior social value. Although, a considerable number of studies exist on social enterprise, the literature is still lacking in the discussion on electronic social entrepreneurship.

Design/methodology/approach – This study adopted inductive qualitative approach in which in-depth, semistructured interviews were conducted from 32 owners/managers/CEOs of registered social enterprises.

Findings – The analysis of interviews by qualified researchers resulted in the identification of four key themes. These themes included information and communication technology, information and communication technology-based innovation, environmental complexity and social value creation. Frequencies of all the identified themes were calculated, and based on these themes, literature review was conducted to find out the relationships between these themes and to introduce a model of electronic social entrepreneurship.

Practical implications – The model developed could be used by social enterprises for achieving higher social and economic returns.

Originality/value – Based on interviews and literature review, a unique model for electronic social entrepreneurship is developed.

Keywords Information and communication technology, Electronic social enterprise, Environment complexity, Information and communication technology-enabled innovation

Paper type Research paper

1. Introduction

In the last couple of decades, the concept of social entrepreneurship has been greatly emphasized by governments, practitioners and academicians (Chell *et al.*, 2016; Javed *et al.*, 2019). This interest is based on the role of social entrepreneurs as they are addressing unsolved social problems on international scale while enhancing human development around the world and improving the quality of life (Javed and Yasir, 2019). Social enterprises are hybrid organizations that work to achieve social value creation along financial value creation. However, social enterprises (SEs) prioritize social returns over financial returns (Dees, 1998) and result in social change (Haugh and Talwar, 2016), which helps in catering basic human needs (Seelos and Mair, 2005). It is a powerful tool to reduce poverty (Nicholls, 2008), address ecological issues (Jay, 2013) and empower women (Datta and Gailey, 2012). The concept of SE is rooted in entrepreneurship (Dees, 1998), organizational studies and civil society research. However, it is viewed differently in developed and developing countries. According to researchers and practitioner, in developing countries, SE is viewed as agent for providing basic needs such as water and sanitation and health care. Whereas in developed economies, social entrepreneurship is perceived as agent for providing innovative business models for creating job opportunities and fighting for ecological concerns (Hlady-Rispal, and Servantie, 2018). SEs such as Grameen Bank, Ashoka Foundation and Schwab Foundation are actively promoting the bright face of social entrepreneurship. The mission of social entrepreneurship is to create social wealth along with economic wealth by addressing social needs. To achieve



their motive, social entrepreneurs strive to create more effective and efficient mechanism to reduce cost, enhance quality, respond more rapidly to customers and business partners (Raymond *et al.*, 2005) and to create more powerful social impact. One way to achieve all these goals is using information and communication technologies (ICTs) and their applications such as information systems (ISs) in the enterprise activities. The adoption of these technologies could potentially enhance the performance of SEs. The use of these techniques can result in creation of a new type of organizations called “Electronic Social Enterprises (E-SEs)”. This integration of ICTs and social entrepreneurship will enhance the competitiveness of the SEs as suggested by Bordonaba-Juste *et al.* (2012).

In the era of emerging knowledge economies, ICT could be used as knowledge resource by SEs to enhance their performance. According to resource-based view (RBV) (Barney, 1991), successful enterprises gather and manage their resources effectively to achieve their objectives. RBV focuses on resources and performance, and it is appropriate for explaining evaluation of social entrepreneurship (Meyskens *et al.*, 2010). RBV is more concerned with management and flow of resources within the organization to result in more effective process, and for this reason, this study used the RBV to analyze the effect of ICTs on social entrepreneurship. The other theory that is used in this study is diffusion of innovation theory (DOI) (Rogers, 1995). This paper explains the pattern of ICTs’ diffusion and adaptation by SEs and explains the process of ICT’s use within SEs to enhance their processes. This theory has been used to study diffusion of IT in a number of fields (Kautz and Larsen, 2000) including health care (Kaminski, 2011), mobile technology (Al-Jabri and Sohail, 2012), education (Dingfelde and Mandell, 2011), online games (Cheng *et al.*, 2004), energy conservation interventions (Völlink *et al.*, 2002). DOI explains characteristics of any innovation that diffuses from one sector to another (Simpson, 2005). ICT and its application have diffused and integrated with social entrepreneurship resulting in the creation of E-SE.

In literature, a great deal of data is available on applications of ICTs in business (Collins *et al.*, 2003; Sørnes *et al.*, 2004), impact of ICTs on business (Chew *et al.*, 2011), impact of IT on different sectors (Lopez-Nicolas and Soto-Acosta, 2010) and on different functional business areas (Leenders and Wierenga, 2002). However, there is limited research on role of ICTs and their applications on SEs and especially there is no work on E-SE. Therefore, inductive qualitative approach is adopted and semistructured interviews were conducted to identify themes and build model for E-SE.

Based on DOI theory as a specific theoretical foundation and RBV as a fundamental theory, this paper proposes a model for E-SE, using thematic analysis of interviews data, collected from social entrepreneurs in Pakistan. In current literature, no model for E-SE exists, which makes this study a unique contributor to currently documented literature. This paper explains the formation of E-SE as an emerging form of social entrepreneurship that would use ICT-enabled e-system to facilitate the formation and functioning of SEs. This paper also discusses the role of ICTs and ICT-based innovation in the creation of E-SE and how complex environment affects the relationship. The resulting model of the study can be utilized by social entrepreneurs for enhancing the overall effectiveness of SE as well as for expending their social networks and markets.

The paper begins with description of theories, that is, RBV and DOI theory. This is followed by method used to conduct the study, literature review of identified themes, discussion and ends with conclusion.

2. Theoretical foundations

In order to understand E-SE fully, it is important to understand its theoretical foundations. RBV and DOI theory explain E-SE.

2.1 Resource-based view

According to RBV, a firm can create and sustain competitive advantage based on exploring and developing resources. However, those resources should be valuable, rare, inimitable and nonsubstitutable (VRIN) (Barney, 1995; Caldeira and Ward, 2003; Rivard *et al.*, 2006). Furthermore, it was concluded that if VRIN resources are mismanaged and underutilized, they will not provide any benefit to the firm. Barney (1995) upgraded the VRIN model to VRIO, which suggested that resources should be valuable, rare, difficult to imitate and organization should be ready to capture value from resources (VRIO). According to Caldeira and Ward (2003), firm resources can be conceptualized as number of small factors such as employees' and managers' characteristics. According to RBV, the term "resources" has got broader definition. According to Melville *et al.* (2004), inputs, assets, competencies and capabilities are included in resources. According to Ray and Ray (2006), those resources can be internal (firms already have that resources) or external resources (accessing new resources from environment) and tangible or intangible resources (Meyskens *et al.*, 2010). Firm capabilities represent the firm's behavioral orientation toward constant integration, reconfiguration, renewal and recreation of its resources and capabilities and continuous upgrading and reconstruction of its core capabilities in response to the changing environment and to remain competitive (Cardeal and Antonio, 2012, p. 10159). Capabilities provide the basis of sustainable competitive advantage by configuring the resources.

Similarly, according to Sharir and Lerner (2006), social entrepreneurs operate in resource-scarce environment. They face a challenge to acquire and utilize resources. To overcome this barrier, SEs use creative resource strategies (Alvord *et al.*, 2004). Recent research has shown that it is important for SEs to effectively communicate with stakeholders (Renko, 2013), get government support (Santos, 2012) and develop good relationships with revenue generating customers (Di Zhang and Swanson, 2013) to overcome the resource scarcity. Hence, RBV is well suited to study social entrepreneurship.

RBV has been developed to understand how enterprises create and sustain competitive advantage. According to Mata *et al.* (1995), IT can be a source of sustainable competitive advantage. According to Keen (1993), use of IT can be viewed as differentiating capability of an enterprise. IT affects the operational processing of an enterprise and thus creates sustainable competitive advantage (Ray *et al.*, 2004). According to Nevo and Wade (2010), business value is derived from capabilities that are generated through the combination of organizational resources and IT resources. Hence, IT techniques and technologies can be conceptualized as resources, which can be used to build sustainable competitive advantage by SEs. Rivard *et al.* (2006) suggested that if the resources of IT-enabled businesses are used in effective manner, it enhances the firm performance. IT-enabled enterprises tend to outperform other firms on performance (Bharadwaj, 2000). Therefore, RBV can be used to explain IT-enabled social business.

2.2 Diffusion of innovation theory

Another theory explaining E-SE is DOI. Innovation is defined by Rogers (2004) as an idea, object or practice that is new for an individual or group and diffusion is defined as the process in which innovation moves from one member to another. According to Rogers (1995), this theory helps in understanding how a new technology would be diffused. This theory explains the way in which new technology creates its way from creator to user. This theory explains mechanism of diffusion, patterns of adoption and helps in predicting about the success of innovation (Tair and Abu-Shanab, 2014). According to Rogers (1995), organizational characteristics and innovative characteristics of firm influence the firm's adoption of innovation. Innovation characteristics either promote adoption of innovation such as promoting relative advantage or prevent it. Rogers (1995) proposed five attributes of any

innovation. They are relative advantage, compatibility, complexity, trialability and observability.

This theory (DOI) is one of the most widely used theories for understanding the adaptation of IT (Zhang *et al.*, 2015). DOI provides insight for understanding innovation of IT and its applications for various businesses (Wu and Chiu, 2015). Lyytinen and Damsgaard (2001) studied the DOI with IT solutions for organization. Hashim (2015) used the DOI leans to study adoption of IT for SMEs. Martins *et al.* (2014) and Baptista and Oliveira (2015) used DOI to study IT diffusion in banking sector. Based on learning from these studies, DOI can be used in this study, which encompasses IT and its application for social enterprises.

3. Method

As the literature on E-SE is not so rich, even there is no literature that particularly explains this concept, so for developing sound foundation, inductive qualitative approach has been adopted. Inductive analysis is used when nothing or little is known about the phenomenon (Burnard *et al.*, 2008). In-depth, semistructured interviews were conducted from social entrepreneurs. It is an interview technique that enables a researcher to get inside of complex phenomena (Burnard *et al.*, 2008). As this study focused on finding out the role of different factors affecting the emergence of E-SE and such data is not available in literature, so in-depth interviews were conducted. The information obtained from interviews was analyzed to develop a comprehensive framework for E-SE.

3.1 Selection of sample

In-depth, semistructured interviews were conducted from 32 Pakistani social entrepreneurs. For interviews, all the individuals who were identified as registered owners/managers/CEOs of SEs by the Centre for Social Entrepreneurship (working under Planning Commission of Pakistan) were contacted via e-mail and official contact number. Out of 186 social entrepreneurs, 64 gave their consent for interview. Later, when they were contacted for prescribing a suitable time for interview, 19 refused due to various reasons, for example, lack of information about ICTs or their application for SEs; no use of ICTs in their respective SEs; or unavailability on the day of interview while 45 persons agreed to give time for an interview. However, on the stipulated date and time of interview, only 32 persons were available in their offices who were interviewed, while the others could not make it due to their job commitments even after recontacting. Among the total of 32 respondents, 11 participants were from SEs working to eradicate poverty, seven were from SEs working to promote education and literacy, six from health, four from microdonations and two each from training females for starting their own business (women entrepreneurs) and environment protection. All the interviews were conducted between May 03, 2018 and August 09, 2018.

3.2 Interview structure and analysis

Semistructured interviews were conducted from 32 social entrepreneurs. Interviews were revolving around the concepts of “use of ICTs in social enterprise,” “reason for using ICTs” and “drivers of E-SE.” For getting maximum understanding and minimizing the impact of language barrier, all the interviews were conducted in mix language (English and Urdu) and interviews were recorded. Later, all the interviews were translated into English language.

Interviews data was analyzed using thematic analysis. Thematic analysis is one of most widely used interview analysis approaches (Judger, 2016). According to Braun and Clarke (2006), thematic analysis is a tool that identifies, analyzes and reports patterns in a data set. From in-depth interviews, identified themes were analyzed by a team of researchers. Interviews were initially conducted in local language (Urdu) and English for respondents’

convenience and later on all the responses were translated into English language. Interviews were analyzed and reanalyzed by team of researchers to individually identify themes. Later, all the data from the analysis of interviews was collected and the identified themes were summarized to find drivers of E-SE. The respondents were found reasonably familiar with use of ICTs and the importance of ICTs for SEs and the responses provided insight into how ICTs affect SEs and the reason for emergence of E-SE. The categories identified as a result of analysis included ICTs, ICTs-based innovation, environment complexity and social value creation. According to [Thomas \(2003\)](#), most inductive studies have 3–8 categories for reporting a model. Details are shown in [Figure 1](#).

3.3 Presentation of themes

As explained earlier, four themes were identified from data that contributed to understanding of E-SE. [Table 1](#) shows the identified themes and expressions of interviewees.

Frequencies of all the identified themes were calculated. 24 out of 32 social entrepreneurs used the theme of ICTs during the interview, 26 used the theme of ICTs-based innovation, complexity in environment was referred by 19 interviewees, whereas social value creation was quoted by 16 social entrepreneurs in their interviews. Details are given in [Table 2](#).

4. Literature review of identified themes

Based on identified themes, literature review was conducted to find out the relationships between identified themes and to come up with a model and propositions.

4.1 Social entrepreneurship and social value creation

Currently the world is facing many problems including poverty, inequality, creating sustainable livelihood and addressing environmental issues. The world is viewing sustainable development as a solution for these problems. Entrepreneurship is viewed by many (like [Alvarez and Barney, 2014](#); [Markman et al., 2016](#)) as tool for solving social, economic and environment issues and creating sustainable development. However, enterprises created as a result of the process of entrepreneurship also pay dividend and return on investment to shareholders and hence pay less attention to social and environment issues. On the other hand, nonprofit organizations (NPOs) are more focused on solving social and environment issues. However, the problem with NPOs is limited availability of funds. According to [Defourny and Nyssens \(2010\)](#), governments all around the world have reduced the direct funding of NPOs. To fill this gap, SEs appeared on the organizational list. SEs carry the same genes as other enterprises ([Dees, 1998](#)). According to [Mason et al. \(2007\)](#), “Social enterprises are invaluable in the daily lives of the communities they serve and support” (p. 285). Social-conscious individuals are turning increasingly toward the development of SEs to solve the social, environment and economic problems ([Bornstein and Davis, 2010](#)).

In last two decades, the field of social entrepreneurship has got tremendous attention of scholars and practitioners ([Choi and Majumdar, 2014](#)). The concept of SE is rooted in entrepreneurship ([Dees, 1998](#)), civil society research and organizational studies. The development of social entrepreneurship has resulted in growth of some important issues that make social entrepreneurship a unique study area ([Busenitz et al., 2016](#)). However, much of the currently existing literature on social entrepreneurship focuses on defining the social entrepreneurship concept and elaborating its dimensions and neglecting the process of delivering value ([Mair and Marti, 2006](#)) or finding ways to optimize cost, using state-of-the-art technology such as ICTs.

Social entrepreneurship is conceptualized differently by different researchers ([Bull, 2008](#)). [Haugh \(2005\)](#) defines social entrepreneurship as a process that results in creation of SE, and it

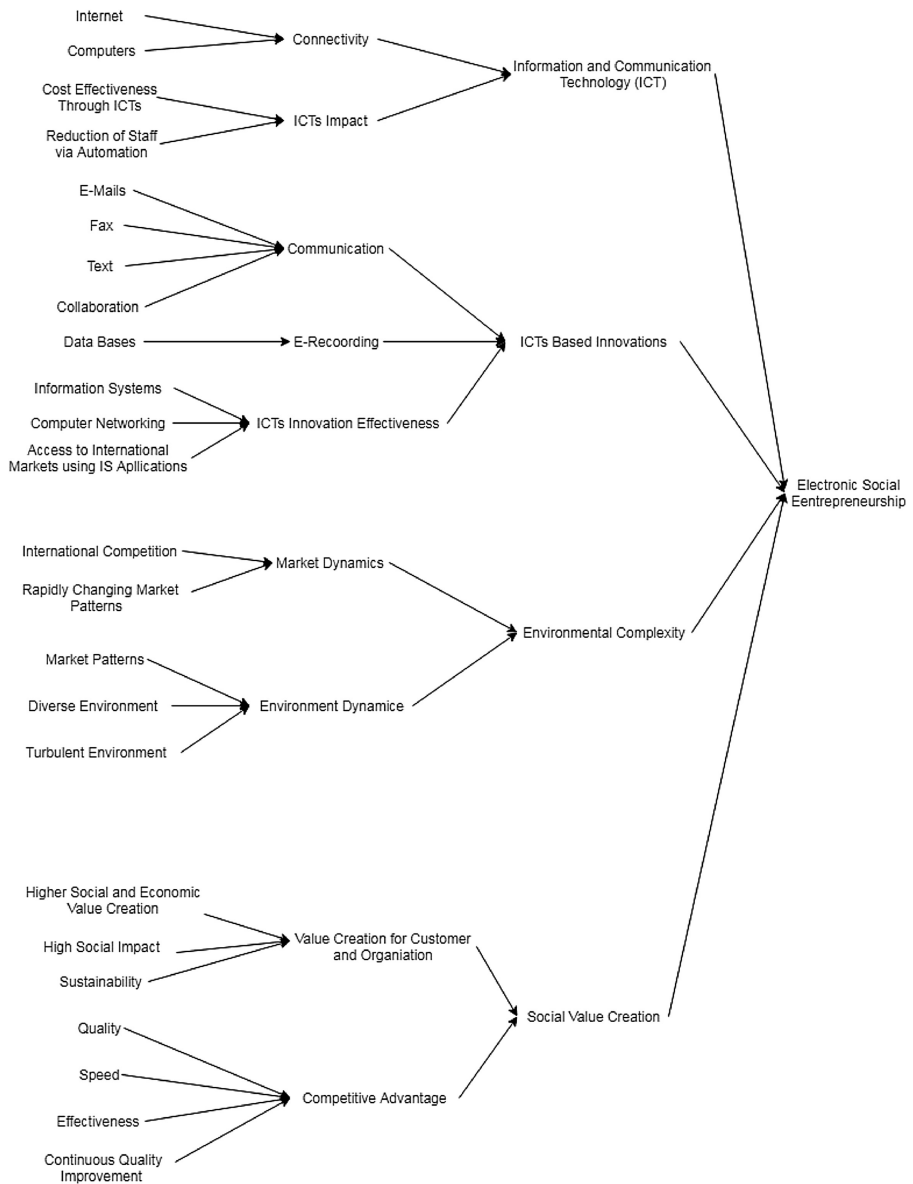


Figure 1.
Summarized identified
themes

involves all the necessary steps required for identifying opportunity and maximizing value for society. According to [Weerawardena and Mort \(2006\)](#), social entrepreneurship is a multidimensional construct with social mission at the heart. According to [Ziegler \(2010\)](#), it is a combination of ethics and innovative capabilities. SE can be viewed as an organization that creates social and economic wealth ([Thompson, 2008](#)). Another definition proposed by [Bull \(2008\)](#) views social entrepreneurship as a venture with embedded social mission, which can

Table 1.
Identified themes

Themes	Example of raw data in which emergent themes were grounded
Information and communication technologies (ICTs)	"Indeed social enterprises need Internet, computers and integration of these ICT tools have made social entrepreneur's life easier. With Internet and intranets we can find solutions to different unexpected problems more effectively and we are enjoying the benefits of ICTs"
ICTs-based innovations	"Different applications of ICTs are working very well for us. ICT based innovations are enhancing the competitiveness level of our social enterprise while making our enterprise more sustainable in terms of creating value and establishing our organizational sustainability. ICT and ICT-based innovations are making difference for us and they can be important for our social enterprise performance in future. ICT-based innovation helps in creating value for the social enterprise and other stakeholders such as our customers, suppliers, partner organizations, governments, and more importantly for society and humanity"
Complex environment	"Our organization is operating in complex and un-settled environment. This complex environment is due to the presence of many global, national, regional and also more importantly industry specific factors. These forces are affecting our way of doing business. Our organization is using online applications to cope with these kinds of problems"
Pressure to perform well (higher social value creation)	"Whole world is undergoing transformation and social organizations have to perform well to remain competitive. We have to create sustainable advantage and by providing continuous superior value, we can achieve it"
Source(s): Interviews data	

be achieved through entrepreneurship. [Brouard et al. \(2010\)](#) argued that social entrepreneurship is a process of having innovative idea for addressing social change and entrepreneurial approach is used to treat the social illness ([Achleitner et al., 2013](#)). According to [Yunus \(2011\)](#), social entrepreneurship is a process in which individuals and team work on specific social issue and develop an economically feasible organization.

Social entrepreneurship plays an important role in addressing social problems ([Stecker, 2014](#)) as these organizations offer sustainable solutions to complex social problems ([Martin and Osberg, 2007](#); [Zahra et al., 2009](#)) and create social value ([Austin et al., 2006](#); [Perrini and Vurro, 2006](#)). Social value is some time called as social wealth ([Zahra et al., 2009](#)), social mission ([Nicholls, 2008](#)), addressing social problems ([Light, 2006](#)) or social purpose ([Murphy and Coombes, 2009](#)). Social value creation is considered as the most important attribute of social entrepreneurship. SEs create social value by improving the well-being of disadvantage individuals. In modern world, individuals such as Dr. Muhammad Yunus, founder of Grameen bank in Bangladesh, Scot Frank, who designed solar pressure cooker, Hugh Evans, cofounder of Global Poverty Project, Kerstin Forsberg's Planeta Oceano, which is working to preserve coastal environments, Marina Kim and Erin Krampetz, who established Ashoka-U, which works with different universities to embed social innovation as an educational focus and core value of the university culture are the examples of social entrepreneurs who are creating social value. Such examples can also be trace back in history like John Durand, who worked with mentally retarded people ([Alter, 2007](#)), and Florence Nightingale ([Bornstein, 2007](#)) are two of the many examples from history.

According to [Di Domenico et al. \(2010\)](#), SEs exist to create social value. The pressure of creating higher social value directs SEs to adopt more cost-effective, reliable and efficient mechanism to cope with hypercompetition they are facing. So, they are adopting ICTs and

Table 2.
Frequency of themes
used by different
interviewees

Interviewees	Identified themes		Environmental complexity	Social value creation
	ICTs	ICTs-based innovation		
E-1	x	x	x	—
E-2	x	x	—	x
E-3	x	x	—	—
E-4	x	x	x	x
E-5	x	x	x	—
E-6	x	x	—	—
E-7	x	x	x	x
E-8	—	—	—	x
E-9	x	x	x	x
E-10	x	x	—	—
E-11	—	x	x	—
E-12	x	—	x	—
E-13	—	—	x	—
E-14	x	x	—	—
E-15	—	x	x	x
E-16	x	—	—	—
E-17	x	x	x	x
E-18	—	x	x	—
E-19	x	x	x	x
E-20	x	x	x	x
E-21	x	x	—	—
E-22	x	x	—	x
E-23	x	x	x	—
E-24	—	x	x	x
E-25	x	x	x	x
E-26	x	x	x	—
E-27	x	x	—	—
E-28	x	—	—	x
E-29	—	x	x	x
E-30	x	—	—	x
E-31	x	x	x	x
E-32	x	x	—	—
Total counts	24	26	19	16
Source(s): Interviews data				

integrating their applications and turning to be E-SE. On the basis of these arguments, our proposition is:

- P1.* Pressure to create superior social value would force SEs to turn toward becoming E-SE.

4.2 Information and communication technology (ICT) and emergence of e-business

The world has already witnessed the importance of ICTs in 21st century. ICTs have enabled the enterprises to survive and gain sustainable competitive advantage (Wu *et al.*, 2015). ICTs usage results in effective information and knowledge flow. According to Kogut and Zander (1992), ICTs positively influence the organizational learning, knowledge development, knowledge sharing and integration. ICTs also help in establishing coordination and control mechanism (Tushman and Nadler, 1978). Bharadwaj (2000) used the leans of RBV and concluded that ICTs are important source of differentiation. ICT ultimately improves the firm performance (Luo and Bu, 2016).

With integration of ICTs and business, a new form of business has emerged. This new form of business has been named as electronic business (e-business). There are increasing numbers of businesses, which are adopting the technologies of e-business in which Internet-based computing is used to complete front- and back-end business processes (Lee and Whang, 2001). Use of ICTs in business has brought dramatic positives for those enterprises in terms of inventory management, customer relationship, searching and penetrating new markets, sales enhancement and ultimately improvement in financial returns (Amit and Zott, 2001; Lederer *et al.*, 2001; Zhu, 2004). ICTs-enabled businesses are characterized by fast growth, highly competitive, low cost, and it results in creation of wealth. (Amit and Zott, 2001). However, different firms use ICTs differently. Some firms are dot.com firms, which use ICTs in providing front-end services to customers, such as information about product, placement of order. Others can be click-and-mortar companies, which use ICTs for sales as well as for improving supply chain (Hsu *et al.*, 2006). With integration of ICTs and business, information about the goods is easily and quickly available to customers (Shapiro and Varian, 1999). This introduction of ICTs has eliminated traditional intermediaries and opened a window of opportunity for creating more value by directly connecting sellers and buyers (Amit and Zott, 2001). ICTs have reduced the information asymmetry among different economic agents. At the same time this new technology has resulted in creating new form of collaboration among the firms. It also helps in redefining value chain as industry boundaries are crossed (Sampler, 1998). According to Devaraj *et al.* (2007), e-business technologies have reduced the lead time resulting in more customer satisfaction. It also facilitated the access to external resources and improved the efficiency of internal resources (Parida and Örtqvist, 2015).

SEs are increasingly turning toward the use of ICTs to generate social and economic wealth. As use of ICTs creates competitive advantage for existing firms (Ireland *et al.*, 2002), SEs are also reaping the advantage of ICTs by integrating ICTs with enterprise. SEs can use ICTs to create virtual markets and network-based infrastructure to create sustainable competitive advantage. Use of ICTs helps SEs to achieve sustainable competitive advantage and hence focus on turning to be E-SE. Based on these arguments, proposition is:

P2. ICTs have facilitated the emergence of electronic social entrepreneurship.

4.3 ICTs-based innovations

Innovation is the human creation to fulfill any need (Lee *et al.*, 2012). It is one of the widely studied subjects in organizational studies (Rogers, 2003). Innovation is considered as source of value creation (Visnjic *et al.*, 2016), and it results in creation of sustainable competitive advantage (Herrera, 2015). At the same time, innovation is considered as a key mechanism to cope with uncertain environment (Parida and Örtqvist, 2015). Innovative firms are more successful as compared to the firms without innovativeness (Wang and Ahmed, 2004). Different types of innovations exist such as technological, organizational and administrative innovations. One of the technology-based innovations is ICTs-based innovation. According to Hameed *et al.* (2012), ICT-based innovation has been extensively studied in recent past. According to Soto-Acosta *et al.* (2011), ICTs-based innovation results in higher organizational performance. Organizations are more and more shifting to use ICTs for execution of innovative processes as use of ICTs plays important role in firm's innovation (Merono-Cerdan *et al.*, 2007). According to Kleis *et al.* (2012), ICT-based innovations can be in three areas of a firm. It can be used to improve the knowledge used for innovation, external networking, as well as direct contribution to innovation process. According to Kleis *et al.* (2012), ICTs can help innovation process in three ways; idea generation, effective new product designing and

integrating design and production system. Based on these arguments, the study proposition is:

P3. Effective utilization of ICTs would bring knowledge, networking and process innovation.

ICT also affects the enterprise and market and driving innovation (Gatautis and Vitkauskaite, 2009). According to Virvalaite *et al.* (2009), ICT-based innovations are already evident in manufacturing and service industry. These innovations also play important role in socioeconomic development (Jahangir and Shah, 2016) and social entrepreneurship is the application of entrepreneurship to create social value (Roberts and Woods, 2005) by developing innovative solutions for social problems (Alvord *et al.*, 2004). These innovations can be ICTs-based innovations. Hence, ICTs-based innovations are also taking place and/or utilized in SEs. SEs can use ICT-based innovation for internal networking, external networking and for innovation as suggested by Kleis *et al.* (2012) for contemporary organizations. Based on these arguments, proposition to be tested is developed as:

P4. ICT-based innovation has paved the way for SEs to be transformed into E-SEs.

4.4 Environment complexity

Environment complexity is defined as the heterogeneity of highly relevant strategic activities (Child, 1972). According to Thompson (1967), it is the environment diversity. Friedman and Förster (2005) called current environment as “complex and turbulent.” Researchers have identified environmental complexity as an important environment characteristic (Cannon and John, 2007). According to Justin-Tan and Litschert (1994), environmental complexity exists when organization perceives a great range of factors and issues are present in environment (Zittrain, 2008). With the introduction of ICTs, the environment is getting more and more complex. Environmental complexity influences the firm and firm strategy to survive (Rueda-Manzanares *et al.*, 2008). Environmental complexity moderates the relationship between firm and firm performance (Azadegan *et al.*, 2013), ICTs and e-businesses (Gatautis and Vitkauskaite, 2009) and ICTs and E-firm (Chandra and Lloyd 2008). Therefore, it can be concluded that business environment complexity is shaping the relationship between ICTs and social entrepreneurship also and ultimately affecting the emergence of E-SE. Based on these arguments, proposition is:

P5. Environmental complexity affects the relationship between ICT and electronic social entrepreneurship.

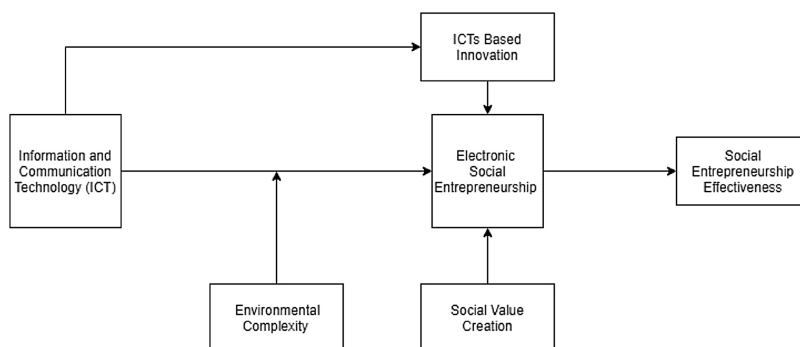
Similarly, the emerging of E-SE has enhanced the overall effectiveness of social enterprise. E-SE has been characterized by fast communication and knowledge sharing, developed ICT-based innovation ecosystem, creating and maintaining virtual teams and ultimately enhancing the effectiveness of SE.

P6. Emergence of E-SE has enhanced the level of effectiveness of SE.

Based on identified themes from interviews and relationship from literature, the proposed model for E-SE is shown in Figure 2.

5. Discussion

Introduction of ICTs in business has brought a revolution in business. ICTs help businesses to access markets around the globe, communicate with them, and it also helps in reducing cost. ICTs also created new business opportunities. It has all together changed the overall

Figure 2.
Model of E-SE

environment of the businesses. Being a part of same complex environment, SEs are also affected by the emergence of ICTs. SEs want to achieve effectiveness in operations to maximize the social impact. So, SEs are increasingly adopting the ICTs and their applications such as ISs and e-mail. The pressure of achieving superior performance and availability of resources such as ICTs have enabled the establishment of E-SE. Therefore, the first and second propositions of the study are justified.

ICTs also resulted in enhancing the pace of innovation in the organization and also resulted in emergence of ICT-based innovations. To survive, compete and gain competitive advantage, SEs must get engaged in the process of innovation. With the introduction of ICTs, innovations are diffusing rapidly and it being used beyond the boundaries of a single enterprise. SEs are using ICTs for monitoring environment, innovation and creating sustainable competitive advantages. SEs emerged in response to complex social needs, which require innovative solutions to get solved. That is the reason that social entrepreneurs always comes up with new and innovative ways to fulfill customers' demands and ICTs are providing innovative support to SEs. For this reason, SEs are increasingly turning into E-SEs. The earlier discussion supports the third and proposition of study, and therefore, it could safely be concluded that effective utilization of ICTs would bring knowledge, networking and process innovation.

E-SEs are using IT and its applications such as IS for creating more social impact as well as creating efficiency in its operations. Social networking websites and Internet provide a good platform for collaboration of social entrepreneurs. Internet has become a useful tool for disseminating information in short period of time. E-SEs are using Internet to start business with little or no capitals. At the same time, ICTs also changed the overall environment for SEs and created a new era of cutthroat completion where organizations are unable to gain sustainable competitive advantage. Rather advantage is created, eroded, destroyed and re-created (Lichtenthaler and Muethel, 2012). To cope with such environment, more and more SEs are increasingly turning toward E-SEs. So the proposition 4, stating "ICT-based innovation has paved the way for social enterprises to be transformed into E-SEs" is supported.

The relationship between ICTs and E-SE is not so simple; it is been affected by complex environment. As the environment is getting more and more complex, it is difficult to monitor it, and it is also affecting the management decisions and needs greater degree of heterogeneity and variety within an SE's activities. This complex environment needs advanced resources and capabilities to cope with. SEs are using ICTs for monitoring environment, it is also being used in making decisions in SEs and it creates a range of activities in SEs. To develop capabilities to cope with changing environment, social enterprises are redefining their

boundaries. Social enterprises are creating collaborative networks to concentrate resources on key activities and to navigate the complex environment. Hence, ICTs are driving the emergence of E-SE and this relationship is moderated by environmental complexity. Hence the [proposition 5](#) of current study is supported.

There are many commonalities between commercial and SEs; however, one of the key differences between these two types of organizations is value creation. A primary focus of SE is to create social value, whereas commercial enterprises focus on creating economic and financial value. With the pressure to perform better and to create more value for the customers, SEs are increasingly turning toward adopting the concept of E-SE. With emergence of E-SE, SEs can create higher social value by spotting unsatisfied need, developing an ICT-based mechanism to satisfy the spotted need and to create a win-win situation where organization created social value for neglected people and also economic value for sustaining the organization. E-SE is not motivated by profit but by the social goal.

E-SE is an umbrella term used for innovation, social value creation, and ICTs merged with SE. Aim of E-SE is to deliver sustainable solutions for societal problems using ICTs. If capital theory is applied to the concept of E-SE, it is using man-made capital (ICTs), natural capital, social capital, relational capital and human capital in creating social value. E-SE strives to achieve organizational effectiveness. According to [Selden and Sowa \(2004\)](#), organizational effectiveness is the ability of organization to achieve its goals and objectives. [Gandy \(2012\)](#) proved in its study that social entrepreneurship and organizational effectiveness are related to each other. E-SEs are ICT-based enterprises that perform dual functions: social and economic value creation. Effectiveness of E-SE is a construct of multiple variables as E-SE is not only profit-seeking organization. In social entrepreneurship literature, two factors are discussed for measuring organizational effectiveness: achieving organizational mission and financial effectiveness ([Zainol et al., 2015](#)). These two constructs can also be used for E-SE effectiveness. E-SE also achieves effectiveness by showing proactive behavior based on ICTs. Due to ICTs, E-SEs are able to perform different jobs more effectively, faster and better than competitors. So, E-SE results in higher social entrepreneurship effectiveness, which is ultimately the goal of any SE. This proves [proposition 6](#) stating “emergence of E-SE has enhanced the level of effectiveness of social enterprise.”

5.1 Implications

The study has various theoretical and practical contributions. Details are given as follows:

5.1.1 Theoretical contribution. The *first* theoretical implication of current research is that it explains the emergence of E-SE. There is no current study that describes the establishment of E-SE. Based on interview data and literature review, current study develops a comprehensive model for E-SE. [Javed and Yasir \(2019\)](#) and [Pettersen \(2016\)](#) proposed models for virtual SEs by digital intervention. This study can be utilized in collaboration with those models. Secondly, the study explains the importance of ICTs for SEs and how SEs can use ICTs for enhancing their effectiveness. Different authors such as [Hu and Kapucu \(2016\)](#), [Subashini et al. \(2011\)](#), [SamGnanakkan \(2010\)](#) also reported that ICTs are essential for organizational effectiveness. *Third* theoretical contribution of current study is that it is the first study that combined the ICTs, ICTs-enabled innovation, environmental complexity and social entrepreneurship for developing a compressive model for enhancing the SE effectiveness. No other study proposed model for the SEs using these variables. *Lastly*, current study extended the RBV and DOI to E-SE. The study proposed that ICTs and ICTs-based innovation can be a vital resource for enhancing the effectiveness of SEs, thus useful for achieving sustainable competitive advantage. [Bacq and Eddleston \(2018\)](#), [Tate and Bals \(2018\)](#) and [Perrini et al. \(2010\)](#) also used the RBV to study SEs. [Almeida, De Mello and Etzkowitz \(2012\)](#) and [Weerakkody et al. \(2014\)](#) used DOI to study SEs.

5.1.2 Managerial implications. The study also has some important practical contribution. *First* practical contribution of this study is that it developed a model that can be used by social entrepreneurs for improving the effectiveness of their enterprises as well as for enhancing the area of operations of SE. [Diochon and Anderson \(2009\)](#) also proposed a model for effectiveness of SEs. However, that model has different component as compared to the model of the current study. The *second* practical contribution of the study is that it highlighted the importance of ICTs-based innovation. Social entrepreneurs and managers of SEs can utilize ICTs-based innovation for enhancing the overall effectiveness of SEs. [Martin \(2004\)](#) and [Surajudeen \(2018\)](#) also proposed that ICTs-based innovations results in enhancing the overall effectiveness of enterprises.

5.2 Limitations and future research directions

Besides numerous advantages, this study also possesses some limitations. These limitations can be addressed in future studies. The *first* limitation of current study is that it is based on perceptions of social entrepreneurs from Pakistan only. Those social entrepreneurs may be having limited international exposure and hence they could have missed any variable(s) important in international scenario. Therefore, cross-cultural studies can be conducted for identifying all the variables and essential for E-SE. *Secondly*, the study proposed a model but does not empirically test the model. *Lastly*, the proposed model is based on data gathered from social entrepreneurs only. Interviewing other stakeholders such as customers, competitors, law-enforcing agencies and government can make this model more comprehensive and authentic.

5.3 Conclusion

This research is an attempt to contribute to social entrepreneurship literature by providing a new form of social entrepreneurship, that is, E-SE using inductive qualitative method. Traditional resources are continuously reducing and competition for those resources is continuously increasing. It is important for social entrepreneurship to become more effective and efficient in terms of resources, operations and marketing so that they can serve the community better and to do so, SEs have incorporated ICTs in their operations, which enhances their effectiveness by achieving positive social impact, positive environmental impact and positive economic gains. This paper has gone beyond the current literature of social entrepreneurship and proposed a model for E-SE based on themes identified from semistructured interviews of social entrepreneurs and by digging deeper into the currently existing knowledge and theories of social entrepreneurship and ICTs.

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