Antecedents of Sustainable Social Entrepreneurship Initiatives in Pakistan and Outcomes: Collaboration between Quadruple Helix Sectors

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Abstract: The concept of social entrepreneurship has not reached full understanding in almost all developing countries, specifically in Pakistan. Social entrepreneurship is an outstanding social vehicle that, if adopted, can transform a society by resolving its social, economic, and environmental issues with the help of homemade solutions for social problems. The phenomena of social entrepreneurship rarely exist in Pakistan, due to a lack of research in and awareness of the field. So far, no quantitative or qualitative research has been conducted on the subject area of social entrepreneurship. Thus, the prime objective of this study is to investigate the effect of personal factors (human capital, social capital, motivational factors) on the development of social entrepreneurial ventures in Pakistan. This research study has investigated the interaction effect of the collaboration of quadruple helix sectors on the factors that affect the development of social entrepreneurial ventures in Pakistan. Quadruple Helix Innovation Theory (QHIT) explains that the economic development of a country stands on four pillars: university, industry, government, and civil society. In this research, a quantitative research approach has been adopted by using a survey questionnaire. This research study has used convenience sampling to select a sample from the target population for collecting answers from respondents who were conveniently available. The population of this study includes all of the social entrepreneurs operating in two important cities (Bahawalpur, Multan) of southern Punjab, Pakistan. SmartPLS 3 was utilized to analyze the data. Moderation has been tested using the bootstrapping technique in SmartPLS software. It is found that human capital, social capital, and motivational factors have a significant positive relationship with social entrepreneurship. Moreover, quadruple helix sectors moderate the relationship between personal factors (human capital, social capital, motivational factors) and social entrepreneurship. The study provides a road map for the development of social entrepreneurship in Pakistan as a solution to social problems.

Keywords: social entrepreneurship; human capital; social capital; motivational factors; quadruple helix sectors

1. Introduction

In the last few decades, social entrepreneurship, as a sub-discipline within the field of entrepreneurship, has garnered increasing attention from scholars, practitioners, policy makers, and the general public [1]. Although the field has been emerging in both the academic and business spheres, it has still no exact definition [2]. Social entrepreneurship theory is still in its early development and conceptualization stage, as in different countries, the concept has different orientations, attitudes, and coverage specifics toward social entrepreneurial initiatives [1].
Entrepreneurship is about the decisions of people to undertake a process, and the attributes of people affect the decisions that they make about the entrepreneurial process [3]. In the same context, this study will address the factors that drive individuals toward the creation of social entrepreneurial ventures. Thus, three types of factors were focused on to conduct this study. These factors are human capital, social capital, and motivational factors as antecedents of the creation of social entrepreneurial ventures.

An individual’s status in society, his or her interactions, and social networking are very important in order to ensure the conditions of influence that are related to personal characteristics such as knowledge, experience, and cognitive abilities [4]. The choice for starting one’s own business depends not only on individual skills and abilities, but also on the access to social capital that supports an individual’s access to information and resources to take on initiatives [5]. In particular, the access to social networks facilitates the adoption of information and technology in the process of product creation [6], and provides access to production resources such as finance and labor in the initial phase of business ventures [7]. Moreover, it may provide psychological support in the business creation process; social structure and geography have a significant influence on the incentive to innovate. Previous studies support that human capital [8] and social capital [9] are less explored areas that need further investigation. A large number of research studies have emphasized that entrepreneurs with greater human capital are more inclined to search for opportunities and take initiatives to create their own business as they have more self-confidence and risk-taking ability [10]. According to Adler [11], social capital is related to the effective bonds and relationships with external parties that result in positive effects in increasing resources and trust-building in an organization.

Additionally, it is very often said that “a person cannot win a game that they do not play”, which refers to the context of entrepreneurship that the success of people strongly depends on their willingness [3]. The entrepreneurial opportunity is the result of an evolutionary process in which people go through the process of different steps i.e., the identification of opportunities, evaluation, perusing resources, and designing the mechanism of exploitation, which all depend on people’s willingness to play the game [3]. Along with human and social capital, motivational factors are also important for the creation of entrepreneurial ventures. The sociologists who have strongly opposed the usefulness of trait-based research in the area of entrepreneurship have implicitly accepted that motivation has a strong effect on the entrepreneurial process [3]. As argued by Baumol [12], ignoring the entrepreneur in the study of entrepreneurship is same as the analysis of Shakespeare in which “the Prince of Denmark has been expunged from the discussion of Hamlet”. Previous studies have ignored the role of human agency; however, it is believed that for the development of entrepreneurship theory, factors that affect motivation of people for making entrepreneurial decisions must be considered [3]. This research study will address the different human motivational factors that lead toward the creation of social entrepreneurial ventures.

The social issues that are faced by developing countries require the development of innovative solutions to overcome those shortcomings. Organizations and universities can work in collaboration for the development of solutions for such social problems through the creation and adoption of social innovations. It is also observed that the knowledge that is required for the development of innovative solutions came in different forms i.e., customers, production, and marketing, as well as from the technical centers of universities and industries. However, how to integrate all of these contributions into a single concept of an innovation process was one of the major challenges [13].

One important issue was concerned with an innovation system, regarding the identification of several players about the analysis of their roles in such system. Basically, three players have been identified i.e., the university, industry, and government at their several jurisdictions. Several models have been analyzed to study the relationship of these three players. These models are Sabato’s Triangle, triple helix, the national innovative capacity, and the chain connections [13]. Triple Helix is used as a model for interaction between the industry, university, and government, as defined by Etzkowitz [14]: “Triple helix is a platform for the formation of institutions and the creation of new
organizational formats that promote innovation. The three players in the relationship—industry, university, and governments—establish partnerships and elaborate policies and projects to provide the innovative solutions that resolve social problems [13].

The next step from the triple helix model is a “quadruple helix” model that involves a “fourth helix”: the “media-based and culture-based public” or civil society [15,16]. The triple helix model is not a sufficient condition for long-term growth; this fourth helix combines the knowledge production and knowledge use with media public discourses, creative industries, culture, values, lifestyles, and art [16]. Civil society has gained importance due to the social aspect of knowledge in the field of science and technology, and its evaluation is now getting increased importance. Therefore, the civil society helix is important, because it highlights the significance of innovations that have been produced to provide benefits to the society. It develops linkages between scientists, science, and strategies for education [17].

Social entrepreneurship is the fastest-growing field in the world. The concept of social entrepreneurship has not yet arrived at its full understanding in most of developing countries, especially in Pakistan. In a developing country such as Pakistan, where social, economic, and environmental problems are increasing year after year, social entrepreneurship can offer the right inspiration to government, the private sector, non-governmental organizations (NGOs), academia, and young people to build home-grown solutions to various social problems of the society; however, there is a lack of collaboration between these sectors. This research study has been conducted in order to identify the factors that affect the development of social entrepreneurial ventures in Pakistan and their outcomes with the interaction effect of collaboration between quadruple helix sectors (government, university, industry, and civil society).

Nevertheless, in developing countries such as Pakistan, there is lack of research in the field of social entreprenurships. Based on the prior studies, this research study has identified and addressed various important research gaps, such as for instance, a lack of research on the important antecedents and outcomes of social entrepreneurship [2]. Moreover, according to various studies [2,18], research is required in this area to provide the theoretical grounds and needed evidence to educate and advise the social entrepreneurs. [2] Other mentioned directions for future research include education for social entrepreneurs, an analysis of their characteristics as well as social networks, the importance of venture capital considerations, and the value creation of social entrepreneurship. Each country has different social entrepreneurship coverage specifics [1] and different economic as well as cultural setups [19] that influence the social entrepreneurship phenomena. Therefore, it is important to conduct research in each country separately to identify those factors that affect the development of social entrepreneurial ventures. Nonetheless, it is important to understand that social entrepreneurship is not only concerned with earning income; it is also about change and impact [20].

However, a full understanding of the concept of social entrepreneurship does not yet exist in Pakistan. In developing countries such as Pakistan, where social, economic, and environmental problems are increasing day by day, social entrepreneurship can be an effective tool for the government, private sector, NGOs, academia, and the younger generation to form homemade solutions to resolve the various problems faced by the society.

Social entrepreneurship as a practice always existed in Pakistan; since its independence in 1947, there have always been problems and problem solvers. However, it is very interesting that the founders of most of social enterprises are unfamiliar with the term ‘social entrepreneurship’; therefore, there is a very small number of self-identified social entrepreneurs that belong to the elite class [20]. The country is seriously fighting for the basic needs of its people due to public failure in areas such as education, health, and the environment. These problems can be solved by adopting the phenomena of social entrepreneurship. There is lot of talent in the country that is still unrealized due to the socio-economic environment of the country, which hinders the development of social entrepreneurship.

There is a lack of collaboration between universities, the government, the private sector, and civil society to promote the trend of social entrepreneurship. There is lack of institutional factors, research, and trained manpower. A wrong perception among people is that the purpose of social enterprises is
only to earn income, which immediately needs to be corrected. There is a dire need to raise interest in the field of social entrepreneurship at all of the educational spheres through research and advancement. Therefore, it is important to promote social entrepreneurship awareness in the country at each level in order to motivate people to take social initiatives for the ultimate economic and social development of the country by creating a positive social impact. Based on the above, this research study has addressed the following research problem: what are the antecedents of the social entrepreneurial initiatives in Pakistan, and what are their outcomes? What is the interaction effect of collaboration among the quadruple helix sectors (university, government, private sector, and civil society), which are the factors that lead toward the creation of entrepreneurial initiatives?

Based on the above-mentioned research problems, the objectives of the current study are the following:

To investigate the relationship between human capital and the development of sustainable social entrepreneurial initiatives.

To investigate the relationship between social capital and the development of sustainable social entrepreneurial initiatives.

To investigate the relationship between motivational factors and the development of sustainable social entrepreneurial initiatives.

To investigate the moderating role of collaboration among the quadruple helix sectors.

2. Review of Literature and Hypothesis Development

2.1. Development of Social Entrepreneurial Ventures

There is increasing global attention on the area of social entrepreneurship [1]. It is very new and complex phenomena, having different definitions from different authors. The components of these definitions cover a wide variety of concepts, including social justice, social value, viable socio-economic structures, forging a new equilibrium, employing innovation, entrepreneurial skills, market gaps, solving social problems, and social entrepreneurs as change agents [21].

According to Korosec and Berman [22], social entrepreneurs are “individuals or private organizations that take the initiative to identify and address important social problems in their communities”. As defined by Greblikaite [23], “social entrepreneurship encompasses the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organizations in an innovative manner”. The focus of traditional entrepreneurship is the economic results of activity, while social entrepreneurship comprises economic, social success, and the creation of equilibrium in society [23]. Boschee and McClurg [24] have explained two main differences between traditional and social entrepreneurs: (1) traditional entrepreneurs may donate their money to nonprofit organizations, but their efforts are indirectly attached to social problems, while social entrepreneurs differ in their income-earning strategies, which are directly connected with their social mission; (2) traditional entrepreneurs measure their efforts clearly in financial terms, but social entrepreneurs measure them as a blend of social and economic results.

Social entrepreneurship theory is still in the early development stage; although a lot of research has been done, still, the concept has not reached full development [23]. Before the analysis of the concept of social entrepreneurship, it is necessary to see the overall evolution of the research of social entrepreneurship. As a first step, scientific research has introduced the results of entrepreneurship; at the next stage, psychological and sociological approaches about entrepreneurs have developed the entrepreneurship concept. In 1950s, after World War II, scientists started aggressively exploring the managerial viewpoint of entrepreneurship. Later, in the 1990s, concepts such as sustainable development and a knowledge-based economy became the focus of studies of entrepreneurial research, with a greater emphasis on its social dimension. Lastly, research on social entrepreneurship started in
Social entrepreneurship is the most rapidly growing sector in the world. For each country at whatever stage of economic and social development, its most important success factor is the stability of society; therefore, it is necessary to adopt social innovation as a method of social entrepreneurship [25]. Internationally, the emergence of social entrepreneurship is influenced by three main factors: the demand (public desire for social services/products, as customer or user), the supply (social entrepreneurs), and finally, the environment and institutional factors that influence the previous two factors [26]. Nowadays, the phenomena of social entrepreneurship is gaining momentum worldwide, and its promotion and expansion in different organizations and foundations is being established i.e., the Schwab Foundation for Social Entrepreneurship in Switzerland or the Ashoka Foundation in India. However, social entrepreneurship is still a growing area for scientific research, and the social entrepreneurship theory is still in the stage of conceptualization [25].

A large number of countries have taken concrete steps to establish an enabling environment for the development of the field of social entrepreneurship. A few of these countries are the United Kingdom (which created a separate legal entity i.e., the community interest company), Italy (social cooperative), Portugal (social solidarity cooperative), Spain (social initiative cooperative), Greece (social cooperative with limited liability), the United States of America (the low profit limited liability company), and India (section 25 company). However, most developing countries such Pakistan are still lagging behind the desired level of development in social entrepreneurship. The country needs active contribution from each sector to deal with social issues and challenges in areas such as education, employment, skill building, health, emergency responses, drug use, crime, and care for the elderly and disabled [20].

The role of social entrepreneurs in the development of social entrepreneurial ventures was highlighted by Zahra, Gedajlovic, Neubaum and Shulman [21], who argued that social entrepreneurs have a significant impact on their communities through the use of the different business models that they provide as a solution to difficult and complex social issues, which results in shared value creation regarding both social and economic values. While analyzing the factors or motives behind the creation of social entrepreneurial initiatives, it is necessary to study the behavior of the social entrepreneur, as well as the importance of personality, social problems, activities, and the ability to solve problems in a sustainable manner through using different sources of information and under certain environmental conditions in order to start social entrepreneurship initiative. It is also important to highlight the
combination of social value and a sustainable economic model, and that all stages of the process are taking place in a certain context. In summary, it can be stated that the social entrepreneurship initiatives development process starts with the operation of proactive relationships with various stakeholders, and is led by the vision that the social entrepreneur sees clearly and works purposefully to achieve social value creation and a successful transfer of initiatives to other markets [1].

Therefore, this research study focuses on the contribution of social, human, and motivational factors toward the creation of social entrepreneurial initiatives in Pakistan and their social impact. The interaction effect of collaboration between the quadruple helix sectors (government, university, private sector, civil society) are also studied with regard to its effect on the factors that cause the creation of entrepreneurial ventures. The social impact of these initiatives has also been investigated.

2.2. Human Capital

The theory of human capital states that knowledge enhances the individual’s cognitive abilities, which results in more productive and efficient potential activity [27]. Due to this, an individual with a higher level of human capital will be more able to perceive the profitable opportunities (if any exist) for new economic activity, and once engaged in an entrepreneurial process, the individual will be more able to successfully exploit more opportunities [28]. A person’s status in society, social relationships, and social networking ability are very important to ensure his influence conditions, which are closely related with his personal characteristics i.e., knowledge, professional experience, and cognitive abilities [4]. A large number of research studies have found that human capital and social capital have a positive correlation with organizational performance [29]. Human capital explores the discovery of innovative ideas that lead toward the creation of entrepreneurial ventures and progress in operational processes, and when these qualities applied to the context of relevant social structures, they become helpful in achieving successful results [28]. The characteristics that come under human capital are education, experience, and knowledge that allow for a wider range of opportunities [28]. An individual’s work experience, management experience, and prior entrepreneurial experience are connected with a firm’s activity [29]. Although knowledge obtained from previous experience in new businesses is more effective for new entrepreneurs, human capital alone is not sufficient [28]. The dispersion of knowledge among different individuals is the unique characteristic of entrepreneurs that is linked with their previously learned knowledge and skills through education and previous work experience [4].

Generic human capital comprises the general knowledge acquired by entrepreneurs through both formal education and professional experience, while specific human capital is based on the capabilities that are directly applied by entrepreneurs on their newly appointed entrepreneurial ventures [8]. This includes the knowledge of the industry in which new firms operate, as well as the industry-specific human capital acquired by the founders through prior work experience in the same industry, and how to manage a new firm, which is learnt by the founders through their leadership experience [30]. Firms that are established by people that have greater human capital enjoy more superior growth due to their unique capabilities [8]. The characteristics that are related to human capital are education, experience, and knowledge [31], which give access to a large number of opportunities [28]. A higher level of education leads toward higher performance [4,30]. According to the theory of human capital, knowledge brings greater cognitive skills to people, and as a result, enhances their productivity and efficiency regarding developing initiatives [27]. An individual’s ability to gain new knowledge influences his risk perception and opportunities, which is based on the stocks of explicit knowledge acquired in educational institutions and implicit gain by experience in a certain field [4,32]. This research study has used knowledge, experience, skills, and cognitive abilities as the elements of human capital, and formulates the following hypothesis:

**Hypothesis 1.** Human capital has a significant positive effect on the development of sustainable social entrepreneurial ventures.
2.3. Social Capital

The concept of social entrepreneurship is gaining increasing popularity in almost all of the social disciplines [11]. The logic behind social capital is that a person’s social networking with his family, friends, and associates forms an important asset that can be used in his crisis period, utilized for personal enjoyment, and also pursued for some material benefits [33]. The communities that have stronger bonds of social networks and civic relationships will be in better standing to deal with poverty and vulnerability [33,34], dispute resolution [35], and obtaining the benefits of new opportunities [33]. We can say that a lack of social networking will have an equally important impact i.e., professionals with higher aspirations understand that in order to move forward in an entrepreneurial initiative, strong social networking is most important [33]. Social capital is the goodwill that is available to people. The source of social capital exists in the structure where the individual is located; this structure includes three types of relations, including: (1) market relations, which is based on the exchange of goods and money; (2) hierarchal relations, for material and spiritual security, where obedience to authority is exchanged; and (3) social relations, which are based on the exchange of favors and gifts [11].

It is evident from previous studies that the importance of social capital is increasing with the passage of time [36]. The focus on the concept is increasing due to its influence on performance as a result of social exchange, taking into account business as a social game [4]. The phenomena of social capital include the stock of relationships, interpersonal trust, and norms that allow certain behaviors and relationships among people that ensure the conditions for organizational development and knowledge sharing [37]. In order to grow a competitive organization, repeated social interaction is needed [4].

This research study used the status, family support, complicity, personal relations, and social relations as elements of social capital, and checked the effect of social capital on the development of social entrepreneurial ventures. Consequently, the following hypothesis was formulated:

**Hypothesis 2.** Social capital has a significant positive effect on the development of sustainable social entrepreneurial ventures.

2.4. Motivational Factors

Since the 1950s, research in the area of organizational psychology has focused on work-related motivation, which has moved from static content models to dynamic process models [38]. In the same way, entrepreneurship has evolved following the same pattern of development, adapting organizational psychology to better understand the entrepreneurial motivations. As stated by Herron and Sapienza [39], “because motivation plays an important part in the creation of new organizations, theories of organizational creation that fail to address this notion are incomplete”. It is also reported by Kuratko, Hornsby and Naffziger [40] that there is a lack of research on entrepreneurial motivation. Content theories are about specific characteristics within individuals that initiate, direct, sustain, and stop the behavior, while process theories, on the other hand, tell how behavior is initiated, directed, sustained, and stopped [38]. Organizational psychology research focuses on developing the motivational theories from 1950 to the 1960s [38]. The processes developed by the mid-1960s gain more preference; these started with the [41] expectancy theory, which was then supported by [42] the goal-setting theory, and later by [43] the self-efficacy theory [44]. Entrepreneurial motivations research studies have followed a similar path of development, which started from identifying the traits and characteristics that differentiate entrepreneurs from the general public rather than developing process-based models [38]. A large amount of research has focused on the traits of entrepreneurs starting from McClelland and Judd [44], who stated that a high need for achievement is the personality characteristic that is common among entrepreneurs.
Two of the most closely related explanations of entrepreneurial motivation are “push” theory and “pull” theory [45]. According to push theory, external negative forces i.e., job dissatisfaction, problems with finding a better job, insufficient salary, or inflexible work schedule push individuals toward entrepreneurial initiatives. Pull theory, on the other hand, states that individuals are inclined to entrepreneurial initiatives due to internal factors i.e., seeking independence, self-fulfillment, wealth, and other desirable outcomes [38]. According to Keeble, Bryson and Wood [46], individuals become entrepreneurs as a result of “pull” factors rather than “push” factors. Some environmental and situational factors were also the focus of entrepreneurial research that has led toward the creation of entrepreneurial ventures, for example job displacement, previous work experience, the availability of various resources, and governmental influences [38].

Another important motivational trait that has gained research attention is the locus of control, which is an individual’s belief that their personal characteristics influence outcomes. Individuals with an external locus of control believe that the outcomes are not in their control, while those with an internal locus of control believe that they have control over the situation [47]. The same researcher further suggests that individuals with an internal locus of control are more likely to seek entrepreneurial initiatives, because they want positions where their actions can have a direct impact on their outcomes.

Self-efficacy is a task related to self-confidence, which is a strong predictor of a specific task performance that explains why people with equal ability can perform differently. In other words, self-efficacy can be seen as task-specific self-confidence. A person with self-efficacy puts more effort in for a longer time period, accepts higher goals, develops better plans and strategies for a given task, and turns negative feedback into positive by using the feedback to improve their performance. All of these characteristics of self-efficacy are also important entrepreneurial processes [3]. Moreover, the quantitative goals of entrepreneurs for each outcome significantly affect their related outcomes both concurrently and longitudinally [3]. Independence is the use of one’s own judgement, which also includes taking responsibility for one’s own life. A large number of research studies have emphasized that entrepreneurial roles need independence. The term drive is the willingness to put in effort, which includes both the effort of thinking and the effort involved in bringing one’s ideas into reality. When an entrepreneur pursues any opportunity, they must take action to make it real. Passion is the passionate love of the work; some researchers believe that a businessman’s core motive is to serve their employees and society. There is no or very little research on passion in the entrepreneurship field [3].

This research study has used the need for achievement, vision, desire for independence, passion, drive, self-efficacy, and goal setting as motivational factors to check their effect on the development of entrepreneurial initiatives, and established the following hypothesis:

**Hypothesis 3.** Motivational factors have a significant positive effect on the development of sustainable social entrepreneurial ventures.

### 2.5. Quadruple Helix Model

For the long-term health of an economy, innovation—whether organizational, technological, or social—is very important. Therefore, social innovation is particularly important for two reasons. Firstly, there is a need to find an innovative solution to most of the social problems that the state is unable to tackle. Secondly, there is an economic reason, as developed welfare societies are slowly moving toward cutting the costs of welfare [48]. Social progress is only possible through restoring social cohesion, and a society in today’s world can only cohere if it prepares to be innovative in new ways of delivering social well-being. It is widely recognized in political and intellectual spheres that states need to look outside the traditional welfare and voluntary sector for solutions to social problems. This idea can only be successful alongside innovation and entrepreneurship to create new forms of welfare states; some of that innovation comes from new ideas and policies, but ideas can only work when translated into practice through organizational and institutional innovations. The social entrepreneurs who carry these new ideas into practice come from three main sources. (1) The first is the public sector,
which includes public sector managers and workers to find new ways of delivering welfare services. (2) The second is the private sector. (3) The third source for developing innovative solutions is the voluntary sector, which is the most fertile source of social entrepreneurs [48]. Leadbeater [48] has presented in below Figure 2, that It is the collaboration among the below three sectors which causes the emergence of social entrepreneurship.

![Figure 2. Sources of Social Entrepreneurship. Leadbeater: [48].](image)

The concept of entrepreneurship is not new among academics. The best-known case studies, for example, include the development of Route 128; the Silicon Valley and Waterloo regions are evidence that academic clusters play an important role in promoting and fostering innovation. Entrepreneurs in the academic sector play a collaborative role between science and business, and facilitate the alignment between both communities [16].

Different models are developed to explain and analyze the relationship between the players that are involved in the development of an innovation system. Three important players have been identified—industry, university, and governments—that develop collaboration and formulate policies as well as projects; among these models are Sabato’s Triangle and the triple helix model [13].

The triple helix model emphasizes organizational development and explains the dynamics of cooperation among different organizational spheres, namely industry, government, and academia. The main notion behind the triple helix model as presented by Arnkil, Järvensivu, Koski and Piirainen in Figure 3, is to develop collaboration among three major players of the knowledge economy: the industry, the government, and academia. This collaboration encourages research that creates innovation, and the advantage obtained will be capitalized [14].

![Figure 3. Triple Helix Model. Arnkil et.al.: [49].](image)

An extension to the triple helix model is the development of the quadruple helix innovation theory, which has introduced a “fourth helix”: the “media-based and culture-based public”, or civil society [15,16]. It argues that the triple helix model is not a sufficient condition for long-term growth; this fourth helix linked knowledge production and knowledge use with media, public discourses,
creative industries, culture, values, lifestyles, and art. It can be said that creative industries, arts, and art universities represent crucial assets for the evolution and advancement of knowledge economies [16].

The quadruple helix innovation theory explains that the economic development of a country stands on four pillars: university, industry, the government, and public/civil society. The individual role of each sector in the quadruple helix innovation model is given by Lindgren and Packendorff in the below Figure 4 for better understanding of this innovation model.

The theory explains that the economic development of a country is the result of collaboration between the players of these four helices. The growth and development of the economy is the result of the grouping and absorption of talented and productive people. So, the innovative cities and knowledge-based regions are the true engines of economic growth. In such cities and regions, universities and industry along with the technological infrastructure of innovation offer a cohesive innovation ecosystem where innovation in its all forms can be generated. Here, the government gives easy access to financial support and a regulatory system for introducing and implementing innovation-related activities, while the fourth pillar, civil society, creates a never-ending demand for the innovative goods and services [15,51].

This research study has used the quadruple helix model to check the interaction effect of collaboration among universities, the private sector, the government, and the voluntary sector on the relationship among the factors that lead toward the development of social entrepreneurial ventures in Pakistan. The following hypotheses are formulated:

**Hypothesis 4.** Collaboration among the quadruple helix sectors moderates the positive relationship between human capital and the development of sustainable social entrepreneurial ventures.

**Hypothesis 5.** Collaboration among the quadruple helix sectors moderates the positive relationship between social capital and the development of sustainable social entrepreneurial ventures.

**Hypothesis 6.** Collaboration among the quadruple helix sectors moderates the positive relationship between motivational factors and the development of sustainable social entrepreneurial ventures.

Based on the above review of previous literature, the study is going to address the research model presented in the below Figure 5:
3. Method

In this research, a quantitative research technique was adopted with cross-sectional research design. A survey questionnaire was used to collect the data from respondents. For survey methodology, the population of this study is all of the social entrepreneurship firms operating in two important cities of Southern Punjab, Bahawalpur, and Multan, Pakistan, which were involved in any type of social welfare activities.

This research study has used convenience sampling to select the sample from the target population for collecting the responses from respondents who were conveniently available. Convenience sampling is a non-probability sampling technique that was defined by Sekaran and Bougie [52] as “the collection of information from members of the population who are conveniently available to provide it”. The justification for using this technique is that as there is no clear definition of a social entrepreneur, nor the scope of its activities. Therefore, the study included all those entrepreneurs who were involved in any type of social welfare venture who were conveniently available and willing to provide the required information. Moreover, Comrey and Lee [53] provided a series of sample sizes for inferential statistics. A sample size less than 50 is observed to be a weaker sample; 100 is weak; 200 is adequate;
300 is good; and 500 is very good, while 1000 is excellent. Therefore, a sample size of 300 was used in this study.

Data collection through survey is a distinctive methodology to “determine the opinions, attitudes, preferences, and perceptions of persons of interest to the researchers” [54]. The instrument has been developed based on a five-point Likert scale, as it is considered to be the most highly accepted scale in the studies of social sciences [52,55]. The instrument that was used for this study was adapted from previous studies.

Human capital is measured using eight dimensions based on four major constructs: knowledge, experience, professional proficiency, and cognitive ability, which were taken from the study of Felicio, Couto and Caiado [4]. Social capital is measured using five dimensions: status, interlinking and family support, complicity, personal relations, and social relations; this was extracted from the same study.

Motivational factors are measured using eight dimensions extracted from the study of Braga, Proença and Ferreira [56]. The development of social entrepreneurial initiatives is measured using three self-developed dimensions. Meanwhile, collaboration of the quadruple helix is measured using the questionnaire from the study of Iqbal [19].

4. Data Analysis and Results

4.1. Measurement Model Assessment

This segment shows the results of measurement model assessment through SmartPLS 3. Internal consistency was examined through factor loading, which confirms the convergent validity. Discriminant validity was examined through external consistency. Moreover, Cronbach’s alpha and composite reliability were examined.

According to Hair, Sarstedt, Hopkins and Kuppelwieser [57], the convergent validity can be attained when the factor loading of all of the items is higher than 0.5. Regarding this study, the below Table 1 and Figure 6 show that the factor loadings are above 0.5. They are also presenting the Cronbach’s alpha, composite reliability, and average variance extracted (AVE) values from their threshold values 0.7, 0.7, and 0.5, respectively. These given results are showing that there is high reliability in the measurement model, and good consistency among all of the variables of the study.

| Constructs                                   | Items | Loadings | Cronbach's Alpha | Composite Reliability | Average Variance Extracted (AVE) |
|----------------------------------------------|-------|----------|------------------|-----------------------|----------------------------------|
| Development of Social Entrepreneurial Initiatives | DVSE1 | 0.928    | 0.870            | 0.921                 | 0.796                            |
|                                              | DVSE2 | 0.940    |                  |                       |                                  |
|                                              | DVSE3 | 0.802    |                  |                       |                                  |
| Human Capital                                | HC1   | 0.742    | 0.919            | 0.934                 | 0.637                            |
|                                              | HC2   | 0.782    |                  |                       |                                  |
|                                              | HC3   | 0.779    |                  |                       |                                  |
|                                              | HC4   | 0.801    |                  |                       |                                  |
|                                              | HC5   | 0.836    |                  |                       |                                  |
|                                              | HC6   | 0.818    |                  |                       |                                  |
|                                              | HC7   | 0.836    |                  |                       |                                  |
|                                              | HC8   | 0.789    |                  |                       |                                  |
| Social Capital                               | SC1   | 0.910    | 0.941            | 0.955                 | 0.810                            |
|                                              | SC2   | 0.857    |                  |                       |                                  |
|                                              | SC3   | 0.848    |                  |                       |                                  |
|                                              | SC4   | 0.954    |                  |                       |                                  |
|                                              | SC5   | 0.925    |                  |                       |                                  |
Table 1. Cont.

| Constructs            | Items     | Loadings | Cronbach's Alpha | Composite Reliability | Average Variance Extracted (AVE) |
|-----------------------|-----------|----------|------------------|-----------------------|----------------------------------|
| **Motivational Factors** | MF1       | 0.892    | 0.932            | 0.944                 | 0.681                            |
| MF2                   | 0.893     |          |                  |                       |                                  |
| MF3                   | 0.762     |          |                  |                       |                                  |
| MF4                   | 0.829     |          |                  |                       |                                  |
| MF5                   | 0.616     |          |                  |                       |                                  |
| MF6                   | 0.865     |          |                  |                       |                                  |
| MF7                   | 0.872     |          |                  |                       |                                  |
| MF8                   | 0.836     |          |                  |                       |                                  |
| **Quadruple Helix Sectors** | QH1     | 0.768    | 0.958            | 0.964                 | 0.727                            |
| QH2                   | 0.789     |          |                  |                       |                                  |
| QH3                   | 0.881     |          |                  |                       |                                  |
| QH4                   | 0.891     |          |                  |                       |                                  |
| QH5                   | 0.888     |          |                  |                       |                                  |
| QH6                   | 0.878     |          |                  |                       |                                  |
| QH7                   | 0.835     |          |                  |                       |                                  |
| QH8                   | 0.878     |          |                  |                       |                                  |
| QH9                   | 0.860     |          |                  |                       |                                  |
| QH10                  | 0.850     |          |                  |                       |                                  |

To guarantee the external consistency of the model, discriminant validity analysis was performed. Based on the comparison between the values of latent variables, the average of the following variables are presented in Table 2: Development of Social Entrepreneurial initiatives (DVSE) = 0.908, Human Capital (HC) = 0.905, Motivational Factors (MF) = 0.892, Quadruple Helix Sectors (QH) = 0.853, and Social Capital (SC) = 0.900.

Figure 6. Measurement Model Assessment.
Table 2. Discriminant Validity Matrix. DVSE: Development of Social Entrepreneurial initiatives, HC: Human Capital, MF: Motivational Factors, QH: Quadruple Helix Sectors, SC: Social Capital.

|        | DVSE | HC   | MF   | QH   | SC   |
|--------|------|------|------|------|------|
| DVSE   | 0.908|      |      |      |      |
| HC     | 0.796| 0.905|      |      |      |
| MF     | 0.822| 0.882| 0.892|      |      |
| QH     | 0.892| 0.853| 0.800| 0.853|      |
| SC     | 0.833| 0.798| 0.807| 0.850| 0.900|

Note: All of the values shown in diagonal and bolded represent the square route of average, whilst those of the diagonal represent latent variable correlations.

4.2. Structural Model Assessment

The results of structural model assessment are presented in Table 3. The t-value 1.64 was considered as the threshold level of acceptance or rejection of hypothesis. In this study, three hypotheses were tested for direct relationships; their values were found to be greater than 1.64. Thus, all three hypotheses are accepted.

Table 3. Hypotheses Testing.

| Sr No | Hypothesized Path | Path Coefficient | Standard Deviation (STDEV) | T Value | p Value | Decision |
|-------|-------------------|------------------|-----------------------------|---------|---------|----------|
| 1     | HC → DVSE         | 0.361            | 0.076                       | 4.768   | 0.000   | Supported |
| 2     | SC → DVSE         | 0.213            | 0.061                       | 3.478   | 0.001   | Supported |
| 3     | MF → DVSE         | 0.269            | 0.091                       | 2.963   | 0.001   | Supported |
| 4     | MF → DVSE         | 0.122            | 0.071                       | 1.762   | 0.001   | Supported |

4.3. Moderation Effect

The study has also performed the moderation test through SmartPLS to examine the moderation effect of quadruple helix sectors (university, government, private sector, civil society) on the relationship between the latent variables and dependent variables. Three hypotheses are tested and accepted, as the t-value of the interaction term of all three hypotheses is greater than 1.64, which is the cut-off value. The results of moderation analysis are presented in Table 4.

Table 4. Moderation Analysis.

| Hypotheses | Hypothesized Path | Standard Deviation (STDEV) | T Value | p Value | Results    |
|------------|-------------------|-----------------------------|---------|---------|------------|
| H4         | DVSE → Human Capital | 0.086                       | 4.471   | 0.000   | Supported  |
|            | DVSE → HC*QH      | 0.089                       | 4.843   | 0.000   |            |
| H5         | DVSE → Social Capital | 0.081                       | 4.268   | 0.000   | Supported  |
|            | DVSE → SC*QH      | 0.083                       | 4.301   | 0.000   |            |
| H6         | DVSE → Motivational Factors | 0.090                       | 3.969   | 0.001   | Supported  |
|            | DVSE → MF*QH      | 0.088                       | 4.554   | 0.000   |            |
|            | DVSE → Quadruple Helix | 0.071                       | 1.762   | 0.001   |            |

Moreover, the R-Square value 0.836 is shown in Table 5. It indicates that all of the variables—human capital, social capital, motivational factors, and quadruple helix sectors—are expected to explain 83.6% of the variance in the development of social entrepreneurial ventures.
Table 5. Variance Explained ($R^2$).

| Latent Variable                             | Variance Explained ($R^2$) |
|---------------------------------------------|-----------------------------|
| Development of sustainable social entrepreneurial ventures | 83.6%                       |

According to Cohen [58], an $f$-squared value of 0.02 is small, 0.15 is moderate, and 0.35 is considered strong. In the current study, all of the variables have a small effect size ($f^2$); however, quadruple helix sectors have a strong effect size ($f^2$), as shown in Table 6.

Table 6. Effect Size ($f^2$).

| R-Squared | $f$-Squared | Effect Size ($f^2$) |
|-----------|-------------|---------------------|
| Human Capital | 0.090       | Small               |
| Social Capital  | 0.125       | Small               |
| Motivational Factors  | 0.034       | Small               |
| Quadruple Helix Sectors  | 0.817       | Strong              |

Finally, predictive relevance ($Q^2$) is shown in Table 7 Predictive relevance ($Q^2$) examines the quality of the model. According to Chin [59], it should not be less than zero. As shown in Table 7, it is more than zero.

Table 7. Construct Cross-Validated Redundancy.

| Total                      | SSO * | SSE ** | $Q^2 = (1 - SSE/SSO)$ |
|----------------------------|-------|--------|----------------------|
| Development of sustainable social entrepreneurial ventures | 216.000  | 80.912  | 0.625                |

* (SSO: Sum of squared Observations); ** (Squared Prediction Errors).

5. Research Findings and Discussion

This study has used the SmartPLS software to analyze the results of quantitative analysis. The quantitative analysis has used the t-values and significance level as a basis to accept or reject the hypotheses. All of the hypotheses that have t-values greater than 1.64 and $p$-values less than 0.01 are accepted.

The first objective of the current study was to investigate the relationship between human capital and the development of sustainable social entrepreneurial initiatives. According to the results of quantitative analysis, Hypothesis 1 has been accepted, because the $t$-value is 4.768, and $p < 0.01$. Therefore, the results have supported that a person’s human capital (profile of education, experience, previously acquired skills and cognitive abilities) positively affects his ability to develop a sustainable social entrepreneurial venture. The results of this study are supported by previous studies; an individual with a higher level of human capital will be more able to perceive the profitable opportunities [28]. According to another study, the theory of human capital states that knowledge enhances the individual’s cognitive abilities, which results in more productive and efficient potential activity [27]. Some other studies have confirmed the current findings; human capital explores the discovery that innovative ideas, individual knowledge, perception of risk, cognitive abilities, prior professional/work/management/entrepreneurial experience, and unique capabilities are linked with a firm's activity, and gives access to greater opportunities [4,5,8,28–32,60]. A large number of research studies have emphasized that entrepreneurs with greater human capital are more inclined to search for opportunities and take initiatives to create their own business, as they have more self-confidence and risk-taking ability [10]. Hence, the findings are consistent with the previous literature.

The second objective of the current study was to check the effects of social capital on the development of social entrepreneurial ventures. The results of quantitative analysis have also supported Hypothesis 2; this had a $t$-value of 3.478, which is greater than the threshold value (1.64),
and a $p$-value of 0.01. Thus, it proved that the social capital of an entrepreneur (status, family support, participation in social events, personal relation with financial institutions/government/business and cultural associations, and his informal linking with these institutions) has a significant positive effect on the development of social entrepreneurial ventures. These results are also supported by the previous literature. According to one study, a person’s social networking with his family, friends, and associates form an important asset that he can use in a crisis period, utilize for personal enjoyment, and also pursue for some material benefits [33]. Moreover, the communities that have stronger social network bonds and civic relationships will be in better standing to deal with poverty, vulnerability, and dispute resolution, and obtain the benefits of new opportunities [33–35]. Another study has confirmed the current findings, saying that social capital came from three types of relations, including: (1) market relations, which is based on the exchange of goods and money, (2) hierarchal relations for material and spiritual security, where obedience to authority is exchanged, and (3) social relations based on the exchange of favors and gifts. Social capital is the goodwill that is available to people [11].

Social capital allows certain behaviors and relationships among people that ensure the conditions for organizational development; for accomplishing a competitive organization, repeated social interaction is needed [4,37]. Some other studies have stated that starting one’s own business not only depends on human capital, but also on the access to social capital [5], and access to social networks facilitates the adoption of information and technology in the process of product creation [6]. It also provides access to production resources such as finance and labor at the initial phase of business ventures [7]. So, the results of testing Hypothesis 2 are also supported by previous research studies.

The third objective of the current study was to check the relationship between motivational factors and the development of social entrepreneurial ventures. The results of quantitative analysis have supported Hypothesis 3, which had a $t$-value of 2.963 and a $p$-value of 0.01; these are in the acceptable range. The survey results have proved that there is a significant positive relationship between the motivational factors (need for achievement, locus of control, vision, desire for independence, passion, drive, self-efficacy, and goal setting) of an entrepreneur and the development of sustainable social entrepreneurial ventures. The results are also supported by the previous literature. The sociologists who opposed the trait-based research accepted that motivation has a strong effect on entrepreneurial process; a businessman’s core motive is to serve their employees and society [3]. Moreover, the quantitative goals of entrepreneurs—his self-efficacy or self-confidence, defined through the internal locus of control for each outcome—significantly affect the related outcomes both concurrently and longitudinally, and are also important for entrepreneurial processes [3,47]. Another research stated that according to the pull theory of motivation, individuals are inclined to entrepreneurial initiatives due to internal factors i.e., seeking independence, self-fulfillment, wealth, and other desirable outcomes [38]. One more study supported the current findings in the following words: “a high need for achievement is the personality characteristic that is common to the entrepreneurs [44]. All of these previous studies provide reasonable grounds to support the results of Hypothesis 3, which addresses the third objective of the current study.

The next objective of this study was to examine the interaction effect among the quadruple helix sectors to check their contribution toward the relationship of personal factors (human capital, social capital, motivational factors) and the development of social entrepreneurial ventures. A moderation test was performed using the bootstrapping technique in SmartPLS. The results of the study have accepted Hypothesis 4 ($t$-value 4.843 and $p < 0.01$), Hypothesis 5 ($t$-value 4.301 and $p < 0.01$), and Hypothesis 6 ($t$-value 4.554 and $p < 0.01$). It has proved that quadruple helix collaboration has a significant positive moderation effect between the relationship of personal factors (human capital, social capital, motivational factors) of the entrepreneur and the development of sustainable social entrepreneurial ventures. These findings are also supported through previous studies, as according to previous studies, the development of social entrepreneurial initiatives can only be possible with joint efforts of all of the stakeholders who create synergies to seek long-term benefits [1,61].
The findings of the current study are not only consistent with the previous studies; they also extend the literature on social entrepreneurship theory. It adds to the literature by confirming the important roles of the individual factors of an entrepreneur (human capital, social capital, and motivational factors) toward the development of sustainable social initiatives for creating homemade solutions to resolve socio-economic issues. To provide these innovative solutions, the current study has for the first time highlighted the significant contribution of innovative players (university, government, industry, and civil society) and quadruple helix collaboration toward the development of factors related to an entrepreneur (human capital, social capital, and motivational factors) and for the ultimate development of sustainable social initiatives. The study will also add to the existing literature of human capital theory, social capital theory, motivational pull factor theories, and the Quadruple Helix Innovation Theory (QHIT) regarding their contribution toward the development of sustainable social initiatives.

6. Conclusions

This research study has uncovered some important aspects that have a significant effect on the development, growth, and success of social entrepreneurial initiatives in Pakistan. It is revealed that various personal factors, including human capital and social capital, and motivational factors have a major role in expediting social entrepreneurship practices. An increase or decrease in human capital, social capital, and motivational factors has a significant influence on social entrepreneurship. The current study has also investigated the role of the quadruple helix sectors (university, government, the private sector, and civil society), which are the main contributors toward the development of the phenomena of social entrepreneurship in Pakistan to offer homemade solutions for addressing various social issues.

According to the findings of the current research, the human capital of an entrepreneur (profile of education, experience, previously acquired skills and cognitive abilities) has a strong effect on the development of social ventures in Pakistan. One’s profile of education is the basic factor that gives a person awareness, exposure, motivation, and ability to grab the opportunities for becoming a social entrepreneur. A person’s previous professional experience provides them with the acceptance of their social welfare ideas. Previously acquired skills, especially communication skills, help him in effectively convincing others for the well-being of society. His risk taking, innovative ability, and all of his cognitive abilities motivate him to take risks and bring about innovation. So, the individuals who have all or any one of these characteristics are more inclined to become a successful social entrepreneur.

The findings of the study have highlighted the importance of the social capital of an entrepreneur (status, family support, participation in social events, personal relation with financial institutions/government/business and cultural associations, and his informal linking with these institutions) for the development of social ventures. A person’s status in society is a very important factor that helps him in the acceptance of his social welfare ideas, as well as their long-term growth and development. Family support is also a crucial factor; without that, an entrepreneur will be demoralized, and will be unable to sustain his/her business. An individual’s participation in social events enhances his social acceptance as well as provides him with better understanding about the problems faced by people in society. A person’s association and informal linking with various financial institutions/government/business and cultural institutions can help him obtain financial support, awareness, legal support, and better understanding of the problems of their community or society. All of these abilities of an entrepreneur will help him toward building more long-term social ventures.

The research has also investigated the effects of the motivational factors related to an entrepreneur that lead toward the development of social entrepreneurial ventures. If a person has all of the resources, but is lacks personal motivation, then he will be unable to do anything for the betterment of the society.

Respondents were of the opinion that motivational factors such as an individual’s passion, drive, vision, desire for independence, goal setting, self-independence, self-efficacy, and personal goals are important contributing factors for the development of social entrepreneurship in Pakistan. People
with higher motivational factors will be positively inclined toward the establishment of a social welfare business.

From the results of this study, it can be concluded that in order to bring social entrepreneurship orientation in our society, the collaboration between quadruple helix sectors can play an important role for the development of human capital, social capital, and motivational factors that will positively affect the development of social ventures. Our universities can play a significant role. They can help in the transformation of youth by developing their human capital, social capital, and motivation to serve their society. Moreover, the government is another major player whose involvement can enhance public trust and the credibility of social ventures. The findings of the study have suggested that the government should provide funding to youth for their encouragement, and should extend help regarding the development of social entrepreneurship initiatives. The findings of the study have also indicated that the private sector is another important player for growth in the field of social entrepreneurship. As a part of their corporate social responsibility, the private sector should provide the funds for the development of social entrepreneurship in order to play their role in the well-being of society. Private sectors, with the collaboration of universities and the government, can also arrange awareness workshops, where experts or entrepreneurs from private industries can share their experiences about their entrepreneurial ventures in order to help the volunteers learn about how to identify and exploit the opportunities that relate to social well-being. Furthermore, the role of civil society or the social sector is very crucial for the sustainable development and success of a social entrepreneurship.

7. Limitations

This research study has used a cross-sectional research design under which data is collected only at one point of time, and cannot be collected across the life span of the variables of interest. Secondly, the findings of the study can be only partially generalized, because data is taken from only the two big cities of a single province of Pakistan. Specific limitations also exist regarding the distribution of respondents across age groups, education, and gender. Only a quantitative study was conducted on a smaller sample, so a larger sample size for both types of studies can give more useful results. Moreover, for quantitative study, a convenience sampling design was used, which may affect the generalizability of the findings to a larger population. Finally, the moderator variable relationship was studied, and according to McClelland and Judd [44], it is very difficult to detect moderator effects in non-experimental fields, as in the case of the current study. Hence, statistical difficulties can also be a limitation regarding detecting interactions and moderator effects. The scope of the study was limited to the investigation of the personal factors of an entrepreneur and the collaboration of quadruple helix sectors that lead him toward the development of sustainable social initiatives. Future research may be conducted taking into account the effects of legal contexts of Pakistan on the development of sustainable social entrepreneurship, and providing a better classification of social entrepreneurship organizations for an enhanced understanding of this useful phenomena of social change.

Author Contributions: J.I. and S.K. have worked on the original idea. J.I. has performed the detailed conceptualization and investigation of this research. J.I. has finalized the methodology of this research and supervised and review the entire research project. S.K. has performed the write up of this project including the writing of original draft. S.K. has performed the data collection and data analysis. S.K. has written the final draft and done the review, proof reading and editing for final submission. W.H. has coordinated the methodology and data analysis stage of this research project.

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