Social Entrepreneurship Learning Model in Higher Education using Social Network Analysis

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Abstract. Social Entrepreneurship aims to solve social problems and focus more on giving social impact on society. The academic programs of most universities tend to teach students to be employees instead of developing skills and competencies to try something new, particularly being involved in any entrepreneurship endeavours. Social entrepreneurship courses have been introduced in many universities to ensure the employability rate of fresh graduates while equipping the students with entrepreneurial capabilities that are essential for the graduates when they are immersed in the society. In order to decrease the unemployment rate, the government suggested that graduates should be involved in entrepreneurship activities. This paper contributes to the development of social entrepreneurship learning model in higher education. The constructs of this model are acquired from the extant literature reviews of the existing models in social entrepreneurship, analysis of the relationships of data and patterns in social entrepreneurship through Social Network Analysis (SNA) are discussed using the narrative approach. This approach is chosen to fully understand the concept of social entrepreneurship from enormous social media data. This social entrepreneurship learning model will help in creating, developing and sustaining a rising generation of social entrepreneurs whilst reducing fresh graduate’s unemployment rate and nurturing more skills to the students.

1. Introduction

There are different terms of understanding the concept of entrepreneurship and social entrepreneurship (SE). Entrepreneurship typically aims at creating a profitable business as the opportunities unfold [6] and in parallel, it also contributes to economic development [2]. Interestingly, social entrepreneurship has many possible similarities with entrepreneurship, yet, social entrepreneurship pays extra attention to solving social problems because of its commitment in helping other less fortunate people while building a profitable venture [2],[6]. The social entrepreneur will help by identifying the problems and use the ability of the entrepreneur’s skills to organize and solve the problems to achieve the wider social impact [7]. Furthermore, the development of entrepreneurial intentions is increasingly being encouraged
from the onset of higher education admittance all-through to graduation [7]. Entrepreneurial education creates a change in expectation, market structure, available resources, and the new knowledge emerges to the next generation [2]. Educators can focus on making SE an attractive career choice by promoting the field in order to enhance the societal norms [8]. According to Higher Education Statistics 2017, Graduates Tracer Study shows that there is a high percentage of unemployment rate (around 21.6%), for public universities and 25.1% for private higher education institutions. By promoting careers in social entrepreneurship, it is expected to help decrease the unemployment rate in Malaysia.

Malaysia Education Blueprint 2015-2025 (Higher Education)’s first shift focuses in creating holistic, entrepreneurial and balanced graduates, according to the Ministry of Education Malaysia (MoE) [9]. We can have programs that will help to equip students with relevant knowledge, skills, and personal well-being, and build their abilities to explore more opportunities as well as develop innovative solutions to solve social problems, particularly poverty. The higher education institutions can help the graduates by promoting Social Entrepreneurship as a compulsory course. It can refer to a model to help in promoting more about social entrepreneurship. This model can help by having a specific standard for social entrepreneurship skills and mindset among graduates [5].

This paper is structured as follows. The next section explains the concept of social entrepreneurship and its application in higher education and social network analysis. The third section will explain the methods that have been used in conducting this research. This will be followed by the result and discussion of the findings, the implications, and future research.

2. Related Works

2.1 Social Entrepreneurship in Higher Education

Social Entrepreneurship in higher education can help the students to have more networks with many social entrepreneurs by using the ticket of a university platform [16]. It can as well help to provide a potential and great business sustenance [17] by engaging in collaborations to give more practical skills, experiences, and insight of social entrepreneurship itself [18]. Furthermore, the increasing number of the cohorts for every session in higher education can further the interest of the students in the field of social entrepreneurship education. It can also lead to more promotion with a rising number of social entrepreneurship clubs and internships that involves awards and educational backgrounds of social entrepreneurship [17].

However, it will be a great challenge for the educators involved in entrepreneurship education. They need to develop and implement programs that are focused on addressing and teaching social entrepreneurship and its relevance, to be able to place emphasis related to the handing of economic issues as well as social perspectives. They also need to have insight into the curriculum to help most of the students in giving more attention to innovation change and most importantly to give back to their communities [18]. There is also a need to create more awareness about the social entrepreneurship curriculum and combine the innovative solutions to solve the social problems [16]. This can help to give more inspiration to educators to have more programs that are related to social entrepreneurship [3]. Moreover, the demand for universities to get more external stakeholders to have more engagement with the local government and business is increasing rapidly. Another vital significance of the model is that it with foster the relationship between the universities and outside communities, by giving those outer resources and communities [4] by giving them the chance to share more about their experience and knowledge with students.

Higher education institutions can also assist by acquiring the resources needed to create the environment that can strengthen the relationships between students and social entrepreneurs. The learning process is important so that the students can practice their experience, knowledge and skills even after their post-graduation. The role of the institution is needed in preparing the future social entrepreneur with high motivational support; hence acting as a link between the public and private sectors. Besides, the awareness is hinged on the fact that there is a slight difference between entrepreneurship and social entrepreneurship and that the end goal would be more on the social value, thus universities will produce graduates who are laden with humanistic values [6]. Social entrepreneurship in education can be one of the potential incentives for changes in socio-economic situations, which can lead to a sustainable system by starting the initiatives as a catalyst to bring and
give more social impacts. Also, students need to be informed that social entrepreneurship education design has its emphasis on the following facts: (1) The main priorities for a social entrepreneurial is social value-creation or social impact, (2) The resources to help regulate the social enterprise can be acquired from social mission organizations, government subsidies, private donations and any legitimate way to generate income, (3) those that impact the most are the stakeholders and other institutions that are associated with the social entrepreneur [30].

2.2 Social Network Analysis
Social Network Analysis (SNA) provides the maps that shows the relationship between individuals in a social network [23]. SNA in terms of the network theory, views the social relationships that consist of nodes (actor) and ties (relationship). It also displays the maps of the specified relationship and pattern in the form of complementary visual and statistical components [23]. Furthermore, it helps to seek and understand personal and support networks and act as the fundamental of the relationship between two actors and nodes. SNA also have an outstanding understanding of network ties and their activity and aids to show the complex structure of the network [14]. From the perspectives of transfer knowledge effect, SNA highly suggests the highlighting of the problem and hence investigate the source of discussion. It also helps in maintaining the contribution of qualitative methodologies [23].

The use of social networks can play an important role in order to promote motivation and collaboration, as well as information exchange in social entrepreneurship [22]. This will aid in sharing social entrepreneurship’s new knowledge and experience, as well as facilitate the learning about social entrepreneurship with others. Besides, the use of social media and social networking tools in the university have increased with a high acceptance rate among the students involved [22]. Hence, social entrepreneurship can strongly benefit from the wider use of social media, social network, and networking [24]. Social entrepreneurship can be delivered through social media for the purpose of having more engagements in a high level of social interaction via social media platforms (e.g. Twitter). Through social media, aspects of social entrepreneurship can be delivered to target people in a meaningful way for the purpose of raising awareness about the significance of social entrepreneurship. Additionally, social media can help the social entrepreneur to have more interaction with other people, so as to gain comments or criticism, create opportunities to get more new partners, new material resources; and share the development of new goals in this field [22].

With the rise in the use of social networking, entrepreneurs can now target their markets using online social networks. Social networking web sites allow businesses to introduce their products to specific market segments, with low expense, and with a low chance of failure. This rapid phenomenon of web-based social interaction can change the way businesses operate in the future [20]. It also can aid the creation of a social enterprise by balancing the theory and practice from the characteristics of social entrepreneurship, which are: management, business ethics and economics. This phenomena will help to increase the awareness of more spectators about social entrepreneurship itself and establish it as a compulsory course that universities need to consider [22].

3. Methodology
This research employed a mixed method approach. The approach combines the synthesis of a literature review about the existing models of social entrepreneurship and Social Network Analysis (SNA), to form the learning model. Both methods are used to discover the constructs for the proposed social entrepreneurship learning model. Related work of the existing models in the literature review, highlights the potentials and the limitations in past studies. Five different existing models from different papers were also identified and analyzed by the researcher.

The next step deals with the implementation of the SNA. SNA can be used for modeling, visualizing and analyzing the interactions between individuals within groups and organizations [1]. Using SNA in this study is imperative, as it helps in finding the relevant constructs from social media platforms to be part of the learning model. The tool that the researchers choose is tagged as: Network Overview Discovery Exploration for Excel (NodeXL). NodeXL helps in analysing the network data and is used to identify, represent, analyse, visualize or stimulate nodes and edges from various types of input data [23]. It is an open-source tool and can extract data from social media and has the ability to
provide the output in form of Microsoft Excel that represent, explore and visualize the graph. Moreover, it is presented in an Excel spreadsheet that contains the element of a graph such as vertices and edges (Table 1). It also have an additional column that can help the researcher to do the analysing and visualizing of the data which contains tweet and hashtags (Table 1), date and time of extracted data and can perform calculation of the metrics for the overall graph [23]. From Figure 1, it shows how the data is being visualized. Each vertex have their own unique identity in the network, while the edge is connected to both vertices, which shows the relationship between them [31].

![Figure 1. Illustration of Edges and Vertices](image)

By using Social Network Analysis (SNA), we worked with the extracted data from a Twitter search that matched the keywords. This study selected Twitter as the social media platform for experiment, because most of the twitter accounts are public and have the ability to use hashtags that can share more on the platform itself [20]. There are a number of existing software applications that researchers can use to retrieve data from Twitter such as NodeXL [25]. The issue affecting the use of Facebook for such experiment, is that the data access will be stricter than before. This is because the user does not have or is not given a valid consent, access and control of personal information [28].

Twitter allows users to implement Applications (API) that can be used to extract information such as tweets, replies or mentions automatically (Table 1) [29]. Therefore this effectively enables anyone with an Internet connection to have the ability to obtain Twitter data [26]. Besides, Twitter also indicates a brief information in text-based information sharing, which is limited to a 280-character tweet. The focus of each discussion can be simple rather than long posting, so as to share knowledge or have discussion with other people in a social media platform. People can obtain news and other important details without having them to be in complex words or sentences. It also helps to reduce more in-depth discussion about any topic.

### Table 1. Features in Twitter

| FEATURES  | EXPLANATIONS |
|-----------|---------------|
| Tweet     | A Tweet may contain photos, GIFs, videos, links, and text. |
| Reply     | A reply is a response to another person’s Tweet. |
| Mention   | A Tweet containing another account’s Twitter username, preceded by the "@" symbol. |
| Hashtag   | Written with a # symbol—is used to index keywords or topics on and allows people to easily follow topics they are interested in. |

### 4. Result & Discussion

From the existing and related work which were gotten via the literature review, there are four different existing models of social entrepreneurship that were identified. We can see that different models emphasize different benefits and have their own limitations. Each models from different literatures have distinct constructs to show the clarifications amongst social entrepreneurship and other relevant
components that works together to produce great impacts in this domain. Besides this synthesis, it can help and be used to develop our learning model.

Table 2. Related Existing Social Entrepreneurship Literature

| No. | Scholar Name & Year | Construct | Advantages | Disadvantages |
|-----|---------------------|-----------|------------|---------------|
| 1   | Pache (2012) [3]    | • General Management Knowledge  
    • Entrepreneurial Skills  
    • Multiple Logics Bridging Skills | It links social entrepreneurship education to advances in entrepreneurship education and social entrepreneurship education. | The relationship between education and entrepreneurial success is at times tenuous. |
| 2   | Birch (2017) [10]   | • Social, Personal & Situational Drivers  
    • Enterprise Pipeline Potential Intention  
    • Potential Intention New Established | Higher education providers contribute to more talented and educated entrepreneurs. | The impact that current higher education philosophy may exert on entrepreneurial intentions. |
| 3   | Musa (2017) [5]     | • Personality  
    • Motivation  
    • Social Network  
    • Interest | To be potential entrepreneur four factors need to be consider which is personality, motivation, social network and interest. | Roles of an educational institution become crucial tools to guide the next generation who have an intention and get motivations to be potential social entrepreneur. |
| 4   | De Villiers Scheepers (2018) [11] | • Pro-active  
    • Adapt  
    • Collaborate  
    • Experiment  
    • Customer focus  
    • Use resources at hand | An experiential approach and enables students to view problems as opportunities, drawing on their own skills and solutions design. | Developed and tested in risk areas with a low entrepreneurial activity, difficulties to communicate with community or students less interest to innovate. |

4.1 Constructs in Social Entrepreneurship Education (Related Works from Literature)

Based on information gotten from literature [3], there are three constructs and they shall be discussed briefly. The first construct is the general management knowledge, and it suggests that the social entrepreneur needs to have a combination of skills to help them understand necessary requirements before setting up an organization. Next is, the entrepreneurial skills, this refers to the knowledge which emphasizes that it is important for the students to learn social opportunities. The third construct is the Multiple Logics Bridging Skills, and this prepares various pedagogical strategies that can be explored. However, there are limits to the weakness links of social entrepreneurship education and entrepreneurship education. Additionally as obtained from literature [12], there are three different constructs which are the social, personal and situational entrepreneurial drivers; they lead to the creation of opportunities such as self-employment or employment. This construct is formed by using the enterprise pipeline and it leads to an entrepreneurial intention, with the influence of education by providing skills to support them in the learning environment. The drivers that are being mentioned in Table 2, will contribute to more production of talented and educated social entrepreneurs.
The research by [10], reflects that there is need for the higher education institutions to be good playmakers, in order to enable the graduates to be more educated and acquire the skills, however, the impact will force the intentions in education. Next, paper [11] mentions about five constructs; and their work represents a pedagogy experiential entrepreneurship. It is important to note that there are proactive, adapted, collaborative, experimental, customer focus and use resources at hand. The need to adapt and be proactive is important, as they need to learn as fast as they can to redesign the solution from the customer feedback. It also aids in reflecting the available resources and enhance the learning progress step to act quickly for problem solving as well as learning preferences.

With regards to reference [5], it was stated that factors of a potential entrepreneur need to be considered and focused on. Otherwise, the future generation that has the same interest to further involve in social entrepreneur, will experience great limitations. The factors from the construct are: personality, social network, interest in learning to be a great social entrepreneur and the motivation to help in contributing to the effectiveness and successful rate of being a social entrepreneur with the economy state. However there is need for an organization or social entrepreneur to work together, hence ensuring the delivering of the content for social entrepreneurship education. Furthermore, lot of importance abounds as the content that we put into the curriculum or courses at the university will create the future for students. It is also essential for the educators to help students to build their future.

4.2 Flow of SNA
4.2.1 Twitter Search using Keyword
Figure 2 shows the flow on how to get data from Twitter and how it is being analyzed. Firstly, we choose suitable keywords that is being used in this domain. The focus will be the domain of the research or technique that is being used. The keyword can also be used with hashtag (i.e. #socialentrepreneurship) or without hashtag (i.e. social entrepreneurship). The search function can import the Tweet with the exact keyword if the user puts quotation marks. For this paper, the search keywords that were chosen are “social entrepreneurship”, “#socialentrepreneurship #model” and “social entrepreneurship”. These keywords shows the most featured discussion about social entrepreneurship and has connection with the findings of the relevant construct for the learning model.

4.2.2 Extract Data using NodeXL
NodeXL extracted and imported data according to the earlier keyword, which is “social entrepreneurship”. From the features in this tool (NodeXL), the researchers choose to import data from the Twitter Search Network. Data obtained based on this tool and based on the matched keyword are: 2596 lines including 673 Tweets (status), 1897 Mentions and 67 Replies. The Tweets were extracted from March 5 until February 11, 2019 as NodeXL can get up to one-week data. From Table 1, most of the Tweets shows the relationship with others nodes as to whether they were replying or mentioning the other nodes. From the data extraction, 1828 vertice s (nodes) were identified. After intensive cleaning process by removing the duplicates, 495 number of rows were determined.
4.2.3 Analyzing by Context

The output of the data after being imported from Twitter search were displayed in a Microsoft Excel table and columns. After that, it was sorted into the range of largest to smallest In-Degree (it is a count for the number of “arrows” that links to the node or person), that is applicable to show the relationships between the nodes. The highest tweets shows 45 in-degree, which means that more than 40 people or Twitter users, use this to re-share with others. To explain this complex relative structure of the network, qualitative analysis was adopted to handle it and to show the understanding of the communication between the nodes (actor).

After the process of cleaning the data by eliminating the duplications, the identity of each Twitter account and their geographical materials were reviewed in order to make sure the tweets are anonymous. Its function is to protect the data that are extracted from the social media platform such as Twitter. The duplicates which are known as retweets were removed, because it only re-shares the original tweets, hence the same contents is being shared with others. All of the Tweets were read and then re-read for purpose of applying a relevant code (theme) to each of them, and ensuring suitability to each tweet. Social media platform helps in giving more feedback and acts as a bridge between the user and the system. As for Twitter, it indirectly enlights the important and significant aspect in each discussion of several topics that focused on social entrepreneurship. This theme mainly focuses the discussion on each content of the Tweets. Also, the theme went through some analysis and several considerations were integrated as constructs of the social entrepreneurship learning model.

4.3 Proposed Initial Learning Model

The model in Figure 3, is derived from the combination of existing literature review and social network analysis (SNA). The contribution of both have led to the construct of this initial social entrepreneurship learning model.

4.3.1 Actors in the Social Entrepreneurship Proposed Initial Learning Model

Social entrepreneurship needs the cooperation of three actors inside the university as well as from outside resources. These three actors are students with the passion and interest to pursue their career or start-up a social enterprise. Students can get the idea of social entrepreneurship, social mission or social impact from their experiences from guest speakers from social enterprises, internship at social enterprise sectors or engaging in activities outside the classroom that are related to giving more to the society [11]. From the tweet below, we can see that students are being encouraged to give their ideas that can help solve a social problem through competition.

“The Social Entrepreneurship Competition is underway! Students are pitching their social enterprise ideas to the panel of experts and the winning business will secure funding for their start-up #socialimpact #socialenterprise.”

Next, the second actor is the university and its resources. Its function is to provide help and guidance, whether in the class or from outside class activities, such as training and workshop that gives more output about the social entrepreneur and the related target program. The connection between the university and the community can lead social entrepreneurship education to another level of teaching and learning. Universities hence need to support student’s idea and product; while organizations and
professionals can look for their product and help in other ways such as giving incentives and social support [11]. This tweet below shows that more universities are now driving their focus into having Social Entrepreneurship programs.

“Did you know that these 23 universities have thriving #SocialEntrepreneurship programs? Check them out, and if you see your #university on the list…”

The professional community is the third actor. This community can come from a social entrepreneur expert, non-government sector and community engagement. Students can get direct experience with existing social entrepreneurs and can look up for them to become their role model [11]. Other factors that can be enhanced directly from the three actors are motivations and interest in social entrepreneurship, where they can learn as many skills as possible during pre-graduation events and apply after that. However, the most important is not the organization that anyone joins but the social impact after giving to the society that can been seen through the example of the tweet below.

“Yes, teamSEBAB is on tour now, working hard to meet and greet local small business owners and entrepreneurs. SEBAB Programme is a jointly supervised social entrepreneurship programme between Enactus UNM and GECB aimed towards accelerating small businesses and to be investment ready within 3-months!...”

4.3.2 Constructs in Social Entrepreneurship Proposed Initial Learning Model

From Table 3, the first construct is engagement. Engagement is important in social entrepreneurship with the community. One of the engagement is to help students use the knowledge learned in class to be applied in real life situations and solve social problems [33], [12]. It will encourage students to be of good personality, motivation and social network as well as preparing them to be potential social entrepreneurs [5].

Another construct is to have more training in social entrepreneurship. It is necessary to have management training, program evaluation and other social works among the students and the community. This effort is to help them manage their social entrepreneurship activities and try to further their passion in their future professional career [6]. Moreover, this effort will be one of the best practices needed to carry out preparations on how to implement the social enterprise strategies through markets that are based on their effort on social works [36]. It will also help them recognize social entrepreneurship opportunities whether in the university or the engagement with the community.

Next, the motivation about social entrepreneurship is also another construct. Motivation can prepare students with the social entrepreneur challenge; and hence transforms them from students to become social entrepreneurs [18]. There is need to motivate them in social entrepreneurship by providing them with skills that can boost up the social spirit to solve social problems. It can as well enable social enterprising graduates to implement their innovative solutions from lot of opportunities. Interestingly, the institutions already assists with the connection to the organizations and perspectives on how to understand the contexts that facilitate social entrepreneurship [47].

| Scholar | [21] | [25] | [32] | [33] | [38] | [39] | [40] | [41] | [42] | [43] | [45] | [44] | [47] | [36] | [36] | [12] | [34] | [5] | [18] | [4] |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Engagement | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Training | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Motivation | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |

4.4 Social Entrepreneurship Education and Social Network Analysis

Social entrepreneurship have managed to create the attention of many people that use social media platform as a place to share their thoughts and discuss the importance of this topic. Essentially the topic that is discussed from the imported data were about engagement, motivation and training. This suitable theme can be part of the outcome of this research, which is the learning model. To apply this construct, it needs actors to show their relationship and how they are related to each other. The focus of social entrepreneurship education are students, university resources and the professional community. With
these three actors, all other constructs can reflect to each other and show how the whole process worked. Both the actors and constructs that were derived from the syntheses of the literature review and social network analysis, needs to be validated by the expert in this field, which is a social entrepreneur that focuses on education.

Furthermore, there is need to apply social entrepreneurship in education and the focus is on the provision of teaching and giving more enlightenment about social impact to the society rather than focusing on profit as the end output. Hence, using social media platforms to gain the information and insight of people about this topic, gives an interesting product. The discussion about social entrepreneurship can be used to give more information to students by creating modules of the teaching and learning process. Besides, the validation process is a must to make sure that this topic is relevant to be taught in the university. It can also create awareness about social entrepreneurship which have some slight difference in the end terms. A lot of students can have more interest in joining the activities that have been arranged by the university or other organizations. The idea of giving more to the society will encourage more activities that the students and universities can undergo. Also, the entirety of the social mission can be done to get more social impact.

5. Conclusion
The growth of social entrepreneurship in higher education will give more impact to the society. The combination of students or graduates with universities authorities and community, will make social entrepreneurship a compulsory class or university course for them to learn and apply in real life. With help from the learning model, the standard learning process will ease the teaching and learning process for both the educators and students. It can change their perspective and encourage them to start focusing on social entrepreneurship, and it can also give more idea to support the evolution of entrepreneurship. This paper sees the insight of the model from the related work of literature review for the existing model and from the social media platform using Social Network Analysis (SNA). Three actors that this research emphasized were the students, university and professional community. These three have to work together in contributing to a successful social entrepreneurship in education. Furthermore, the theme that was identified from the literature review and SNA can be completed in the learning model. However, this model need to be validated by the expert. This will be one of the efforts to bring more exciting programmes and activities towards social entrepreneurship in higher education. More students or post-graduates will continue their passion in this field without being compelled to do so. The limitation of this research is with regards to the lack in the relationship between entrepreneurship and social entrepreneurship. For future enhancement, this research can be expanded towards the combination of entrepreneurship and social entrepreneurship in not only giving impact to the society but also providing profitability to the organizations. More so, other organizations either government or non-government, can get involved in this initiative to bring social entrepreneurship into the learning centres, high institutions or university.

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