

## The impact of Online Social Networks on the Generation of Entrepreneurial Ideas – The Case of Egypt

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### Abstract

The aim of this research is to evaluate the impact of online social networks on the generation of entrepreneurial ideas and to determine whether the use of “online” social networks affects the idea generation process differently than traditional “offline” social networks in Egypt. A structured questionnaire was used to collect data from two separate nascent entrepreneurial populations via email.

Two separate populations will be surveyed for this research. The first population is the target of much of the nascent entrepreneurial research, undergraduate students in Business departments in four private universities, which are (American University in Cairo (AUC), Modern Science and Art University (MSA), German University in Cairo (GUC) and Misr University for Science & Technology (MUST). The second population studied is intended to capture a broader age range of adults with a variety of interests and backgrounds, those taking continuing education classes at business studies division in School of Continuing Education- American University in Cairo (AUC) , and MBA Program studies in Arab Academy for Science, Tech.& Maritime Transport .The reasons behind choosing these populations are that the business studies division tends to attract individuals seeking skills and knowledge associated with starting a business, and the current position of

the researchers provided the opportunity to obtain good response rate from the sample populations.

The researchers used systematic sample. Descriptive statistics, test of means, t-test, regression, and correlation were used for data analysis. The findings showed that commencing nascent entrepreneurs using online social network websites identify more entrepreneurial ideas than others who do not use online social network websites. The practical and theoretical implications are discussed and future research directions are presented.

## **Introduction**

Online social networks are internet sites that host and support a network of entrepreneurs' profile, where ideas can be exchanged, created and consumed between registered users (Taylor, C, 2010). They are web-based services that allow entrepreneurs to construct a public or semi-public profile within a specific system, build a list of other users with whom they share a connection, and view their list of connections and those made by others within the system (Boyd and Ellison, 2008). Nascent entrepreneurs could achieve the maximum use of the information related to the growing trends, common user complaints/needs, and ultimately, identify opportunities which exchanged through these online social networks (Sayed & Murph, 2010).

In addition, nascent entrepreneurs will be able to obtain and generate business ideas and to get advice and resources to launch a business (Greve and Salaff, 2003). Davidson and Honig (2003) argued that entrepreneurs will have the ability to develop faster and promote their network capabilities if they have more advanced communication technologies.

The current research is structured as follows: The next section provides a brief historical background of online social networks. A brief literature review of opportunity recognition, idea identification, traditional social relations and communication methods, and the relation between online social networks and social capital theory will be included in section 2. Our data and empirical analysis are explained in section 3. The results of the research provided in section 4. Section 5 finally provides a further discussion of our results giving some

managerial implications, along with limitation and some suggestions for future research directions.

### **Historical Background of Online Social Networks**

In 1994, the first social networking site was created, Geocities. Geocities allowed the users to create and customize their own web sites, grouping them into different 'cities' based on the site's content. The following year, TheGlobe.com was launched to public, giving users the ability to interact with people who have the same hobbies and interests, and to publish their own content (Shepherd, C. 2011). A few years later, AOL Instant Messenger and SixDegrees.com were following in 1997. Instant messaging was born, giving users the freedom to create a profile and chat with friends. AOL was probably the true precursor to today's social networking sites.

The profiles were searchable so people could look your profile up. It was the most innovative feature at that time. The first modern social networking site that we define today is Friendster.com, which was launched in 2003 followed by linkedin.com (Which took more professional and business approach to social networking), and MySpace in the same year (Shu, W. and Chuang, Y.-H., 2011). Facebook came into the social networking scene a little bit later. It was launched in 2004, and the primary intent was to connect US college students.

Facebook first began with Mark Zuckerberg's alma mater Harvard. At first it was exclusive, and you could only join in if you had been invited by a member of Facebook. Two years later, the campus-only networking site became open to the public. In 2008, Facebook surpassed MySpace and Friendster.com as the leading social networking site by over 150 million members around the globe (Simonds, D., 2011), Today, in 2014 Facebook has 2500 million active users worldwide.

## Literature Review

### Opportunity Recognition

To be a successful entrepreneur, you need to be aware of three main points, , the ability to identify or recognize opportunity, the ability to review or assess opportunity, and last, the ability to successfully execute and realize opportunity (Lumpkin, G.T., Lichtenstein, B.B., 2005). Opportunity recognition means proactively brainstorming a new business venture or expansion idea. Small-business owners typically engage in opportunity recognition at the point where they realize they have an idea, strength or capability that matches well with a particular target market. Entrepreneurial business owners constantly seek new revenue streams, which tend to be profitable (Sanz-Velasco, S., 2006).

Individuals who search for new opportunities either by self or through the combination of their social networks were more likely to recognize the new entrepreneurial opportunities than those who do not go for any search process (Im, S. and Workman, J.P., 2004). The opportunity recognition process is a critical aspect of the entrepreneurial process and can be considered as a key to unlocking the possibilities of a new venture (Lee, J.H. & Venkataraman, S., 2006). One of the most critical factors which affect the opportunity recognition process is the information search process by individuals. Individuals may recognize opportunities through their search process rather than the accidental discovery of opportunities (Seerat Fatima, 2011).

Long and McMullan (1984) argue that there are a variety of factors, some are controllable (such as job selection, lifestyle, and alertness) and others are uncontrollable (such as social influences, economic forces, culture, and personality) which affect the ability of the entrepreneur to recognize, better evaluate, and maximize the profit of the potential ideas.

Opportunity recognition process can be summarized in four steps: the pre-recognition stage, the previous experience stage, the development of the idea stage, and the decision to proceed (Gaglio, C.M., & Taub, R.P., 1992). While others argued that the process of opportunity recognition has five steps which are knowledge recognition (brings together information useful for

the proposed business, helps to translate this knowledge for business use, and can include information about technology, products, customer, the industry, regulatory requirements, finance, and so forth), competitive scanning (involves actively scanning the competitive landscape and leveraging this knowledge to develop a competitive strategy to take advantage of opportunities), proactive searching (helps the entrepreneur to better understand future trends, which are understood through the competitive scanning stage), innovative behavior, and collective action (Puhakka, V., 2006)

Opportunities tend to arise out of environmental changes that occur where an entrepreneur operates and these opportunities tend to be of three types: technological, political and regulatory, and/or social and demographic (Schumpeter, 1934). Baron and Ensley (2006) argued that experience plays an important role in the opportunity recognition process by providing a basis through which the entrepreneur can “connect the dots” between seemingly unrelated events. They tested this by comparing the business opportunity prototypes of first-time and experienced entrepreneurs and found support for their belief which says that if an experienced entrepreneur and a nascent entrepreneur were placed in identical situations where multiple opportunities were present, the experienced entrepreneur should identify more of these opportunities, or at least the better ones.

In the light of the previous researches related to the opportunity recognition we can conclude that information playing a critical role in idea generation and online social networks can enable nascent entrepreneurs to develop and foster relations with more individuals, more quickly, allowing them to share and be exposed to more information and ideas than they otherwise could be aware of, or exploit. According to Shane (2003) an individual may recognize an opportunity before others because they have better information and/or they are able to put the information to better use. He identifies three primary ways of getting better information; through life experiences, social networks, and search processes (Casson, 2005). Shane (2003), identified the linkage of entrepreneurship and social networks as an area in need of more study, especially in gaining a better

understanding of how entrepreneurs use social networks to gather information and then leverage those networks.

### **Idea identification**

One of the main characteristics of the entrepreneurial behavior is human creativity which is closely related to the process of the identification of opportunities (Ko & Butler, 2007). Creativity characteristic differentiates one entrepreneur from another and explains why entrepreneurs can identify different opportunities from the same source (Shane, 2000). Some researches proved that there is a correlation between creativity and idea identification (Lumpkin, Hills, & Shrader, 2004; Ward, 2004), but in the same time entrepreneurial creativity still not fully understood (Ko & Butler, 2007).

Opportunity recognition process can be categorized into five sub-processes, with idea identification happening in the fourth of those sub-processes, innovative behavior (Puhakka 2006). Online social networks are the most important part of the idea identification process and an important source for business ideas (Brown & Butler, 1995). Results of other researches showing that individuals can identify opportunities through the combination of information processing, searching techniques, and scanning behavior through different networks (Shaver & Scott 1991, Singh, 2000, Singh, Hills, Hybels, & Lumpkin, 1999, Arenius & de Clercq, 2005).

In addition, prior experience plays an important part in recognizing ideas (Shane, 2000). The combination of prior experience and ongoing scanning for information can lead to an effective idea generation (Ko & Butler, 2007). Previous researches suggests that differences in knowledge and experience can influence the way information is processed and can impact opportunity identification and these researches proved that one gains access to ideas and information through interaction with others, who have access to other individuals, and these various interactions make-up one's network, a network with characteristics that influence the availability, quality, and timing informational access (Shane, 2000, Arenius & de Clercq, 2005).

The current research concentrating on the benefits of online social networks in helping nascent entrepreneurs identify

ideas. So we can conclude that the combination of larger numbers of social network members, greater frequency of communication with those members, and the availability of pattern recognition software at these sites will lead to increase a nascent entrepreneur's ability to identify patterns needed for increasing their likelihood of recognizing ideas.

### **Online Social Networks**

The increasing adoption of the Internet and online social networks greatly expanded the opportunities for collaboration among individuals by facilitating the sharing of information and experiences across geographical boundaries (Peltier, J.W., Schibrowsky, J.A. and Zhao, Y. 2012). However, since 2004, the expansion of broadband Internet access and increase in online social network use has shifted from the creation, control, and distribution of content to the individual user (Parameswaran & Whinston, 2007).

Online social networks are web-based services that allow individuals to create a profile within a bounded system, articulate a list of other users with whom they share a connection, and view their list of connections and those made by others within the system (Boyd and Ellison, 2007). While Coyle and Vaughn (2008) argued that online social network encourage communication with others by providing directories of relevant user populations, opportunities for self-description and content uploads, and recommender.

Online social network enable users to articulate and make visible their social networks, which means that users cannot only see a graphic representation of their social network, but gain better understanding of how the various nodes within the network are related (Boyd & Ellison, 2007). Online social networks are social networks with strong, intermediate, and weak ties between members and with the graphical representations now available, nascent entrepreneurs who are using online social networks may be able to make better strategic use of the network contacts available since they can better understand how they relate to one another (Wellman, Salaff, Dimitrova, Garton, Gulia, and Haythornthwaite, 1996).

Tools provided by online social networks allow more frequent contact and information exchange with individuals than

could take place using traditional methods, these online networks of individuals allow for multiple types of information exchange. They facilitate one-to-many exchanges through the posting of information like personal profiles, pictures, music, or a blog that others can access concurrently, facilitate one-to-one and one-to-a-few exchanges through text messaging and restricted access levels of security, attempting to limit who can access and view certain things, and facilitate off-line communication (Molina-Morales, X.F. and Martı́nez-Fernańdez, T.A., 2010)

Ellison, Steinfield, and Lampe (2007) found that online social networks are larger than traditional offline networks and undergraduates used Facebook to stay in touch with people that they used to be more closely involved with. While Coyle and Vaughn (2007) found that 41% of their survey respondents used social network sites to “keep in touch with friends” and most undergraduates have at least two different social network accounts and that they log onto them three times daily on average.

### **Strong and Weak Ties**

Strong tie is defined as the tie between ego and alter that is characterized by high levels of intimacy and intensity together with a large amount of interaction and reciprocity, These ties are typically represented by family relationships, spouse, or very close friends while weak ties are people who are less similar to us than strong ties (Granovetter, 1973)

There are various types of interpersonal relations which can be categorized into three types, strong ties, weak ties, and absent ties (Ganovetter, 1973). Strong and weak tie can be analyzed through two levels, a relational meaning at the communication level and a structural meaning at the population level, the relational meaning refers to the tie’s strength as a channel of information and structural meaning is the ability of a tie to facilitate the integration across a social network by linking individuals who would otherwise not be connected (Centola& Macy (2007).Despite of the weakness of the weak ties on the relational level, they are strong on the structural level because they provide shortcuts across a social network and helping



individuals to obtain information and resources that they would otherwise have difficulty locating (Granovetter, 1973).

A major strength of the weak ties is that they are long, connecting help to extending and connecting one's network by linking individuals in socially distant locations through interface exchanges, which means that they serve as long ties (Watts & Strogatz, 1998). Most of new information is delivered through these weak long ties exchanges and It is assumed that these information transmissions are simple and not complex, which means that the social contact necessary for transmission is not costly, risky, or requires independent reinforcement from multiple sources (Granovetter, 2004). It is important that the information and idea exchanges that take place within online social network are simple transmissions because they can be studied on a random network, which facilitates analytic treatment and mathematical approximation (Watts, 2002).

We can conclude that nascent entrepreneurs can gain many advantages from connecting each other through online social networks such as having more frequent communication and access to a larger number of social contacts than those using traditional communication methods in addition they can use both simple and complex information exchanges with their weak ties.

Nascent entrepreneurs will get ideas and information through exchanges with weak ties, but when an action requires confirmation from multiple sources, it is expected that strong ties will be contacted and these contacts may not reside within the online social network (Centola & Macy, 2007).

### **Social Capital Theory**

The concept of "social capital", refers to "community participation" (Hanifan, 1916), or more recently "citizen engagement" (Putnam et al., 1993). Putnam (1994) describes social capital as "features of social life-networks, norms, and trust, that enable participants to act together more effectively to pursue shared objectives". This description leads to better diffusion of information making behavior more foreseeable causing an uncertainty education, and an increase in trust-based relations reducing the average cost of transactions, just as an

increase in physical capital reduces the average cost of production (Paldam and Svendsen, 2000; Routledge and von Amsberg, 2003; Torsvik, 2000; Zak and Knack, 2001). Social capital focuses on the members of communities who interact directly, frequently, in multi-faceted ways, generating opportunities and potential for members of a group, who gain a competitive advantage in pursuing their ends (Bowles and Gintis, 2002).

Social capital theory can be defined as the ability of individuals to gain benefits from their social connections, networks and memberships and can occur at both the individual and organizational level (Lin, Ensel, & Vaughn, 1981; Portes, 1998). Social networks can be extended by relationships with family, organizations, or communities and can provide an entrepreneur's with education, experience, and financial resources (Bourdieu, 1983; Coleman, 1988, 1990; Loury, 1987).

Social capital networks can facilitate the discovery of opportunities and help with identification, collection and allocation of scarce resources, which means that these networks represent the meeting point between entrepreneurs and the owners of resources where information is likely to come from both strong and weak ties (Birley, 1985; Greene & Brown, 1997; Uzzi, 1999, Shane & Venkataraman, 2000). Social capital theory helps in explaining motives for participating in online social network where individuals can gain many benefits which can take many forms, from tangible or intangible, economic or social, to psychological or emotional (Lin, 2001 & Cross, 2004).

Social capital can help to enhance internal organizational trust and provide resources through bonding of actors and by bridging external networks (Adler & Kwon, 2002; Putnam, 2000). Bridging social capital concerned with how the social capital is used for a given individual's, allowing that individual to use the resources derived from their contacts and connections for their private benefit and personal gain (De Carolis & Saporito, 2006).

Puhakka (2006) viewed social capital as the social interaction that brought "information, resources, support, and ideas to entrepreneurs and founds that there is apposite relationship between the amount of social interaction (which is

the structural dimension of social capital), knowledge acquisition, proactive searching, and collective action, in addition he finds that the closeness of relationships positively influenced the entrepreneur in their knowledge acquisition and competitive scanning and the latest information tends to be shared by those closer to the entrepreneur. These results support three main issues related to the positive impact of online social networks on nascent entrepreneurs: first, relationships is main source to get new information; second, individuals must have an active conversation with others in order to have future developments; and finally, the more social relationships individuals have, the more they will discuss venture creation with them.

### **Research Problem**

An exploratory study was conducted to better comprehend the nature of the problem being studied. A number of in depth interviews was conducted with a sample of the under and post graduate students to state research problem and formulate the research hypotheses.

Meanwhile, and based on the results of the exploratory research and the literature review one can say that there is a lack of the information sources which can be adopted for generating entrepreneurial ideas in Egypt.

Most researches on online social networks and its relation to the generation of entrepreneurial ideas was conducted in western countries, little has been done to examine its application to other countries, especially a country with enormous market potential for small businesses such as Egypt, which represent a research gap.

Also there is a gap when it comes to the potential impact of online social networks on generating entrepreneurial ideas.

### **Research model**

Based on the research problem, the relationships between the research variables are illustrated in the following figure.

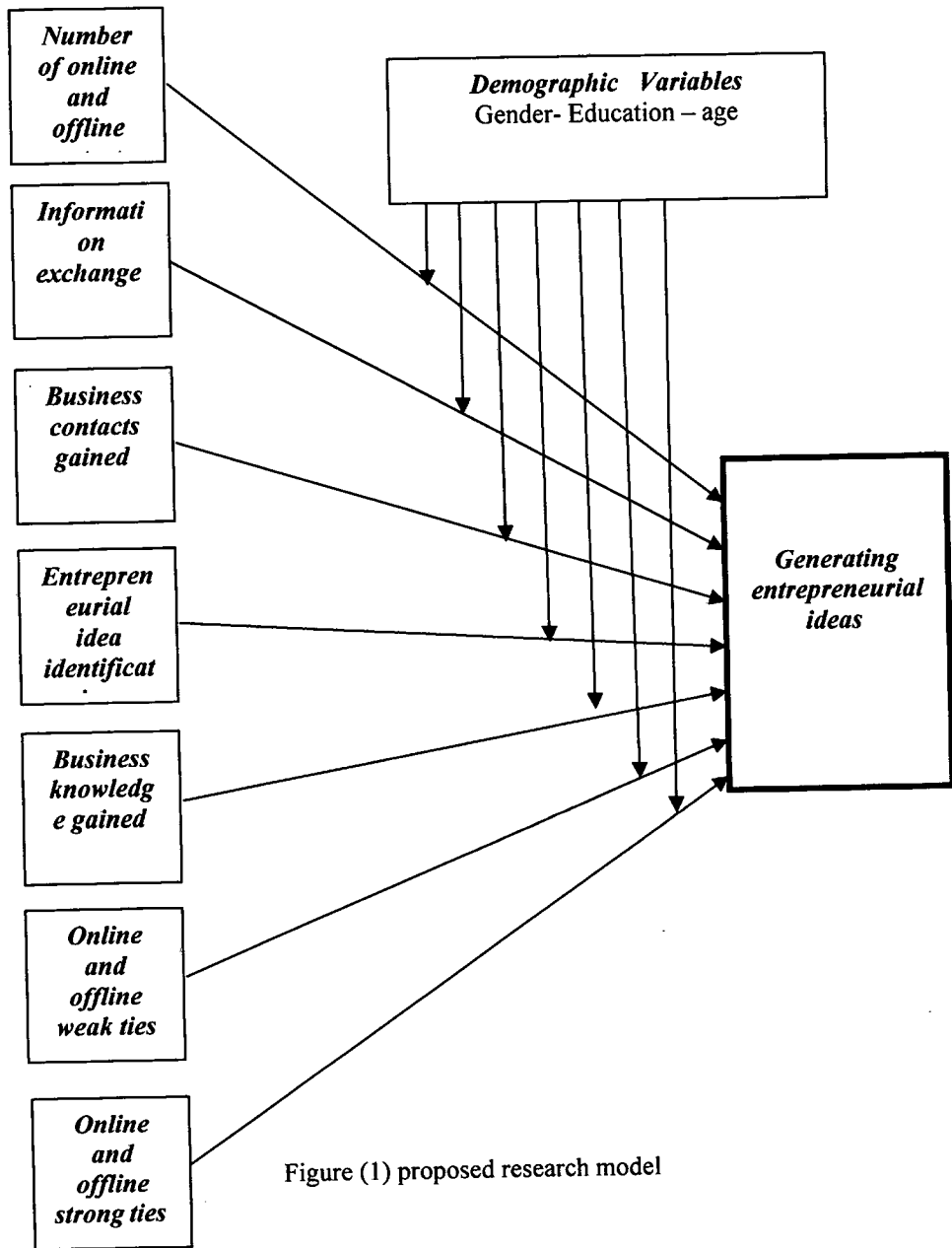


Figure (1) proposed research model

## Hypotheses

This section identifies the hypotheses of the current research. These hypotheses deal with two main issues, the first issue is the differences in the way that nascent entrepreneurs interact with their online and offline networks, and the second issue is how the use and characteristics of these networks may impact the nascent entrepreneur. The following are the hypotheses of the current research which will be tested and discussed in the next section.

**Hypothesis 1a:** There is no significant difference between online and offline nascent entrepreneurs considering the number of online and offline only contacts they are communicating.

**Hypothesis 1b:** There is no significant difference between online nascent entrepreneurs considering the number of online and offline only contacts they are communicating.

**Hypothesis 2a:** There is no significant difference between online and offline nascent entrepreneurs considering the amount of information they are exchanging.

**Hypothesis 2b:** There is no significant difference between online nascent entrepreneurs considering the amount of information they are exchanging with their online and offline only contacts.

**Hypothesis 3a:** There is no significant difference between online and offline nascent entrepreneurs considering the number of business contacts they gain.

**Hypothesis 3b:** There is no significant difference between online nascent entrepreneurs considering the number of business contacts they gain from their online and offline only contacts.

**Hypothesis 3c:** There is no significant difference between online and offline nascent entrepreneurs considering the number of entrepreneurial ideas they are identifying.

**Hypothesis 3d:** There is no significant difference between online nascent entrepreneurs considering the number of entrepreneurial ideas they are identifying from their online and offline only contacts.

**Hypothesis 3e:** There is no significant difference between online nascent entrepreneurs considering the business knowledge they gain.

**Hypothesis 4a:** There is no significant difference between online and offline nascent entrepreneurs considering the number of weak ties they possess.

**Hypothesis 4b:** There is no significant difference between online and offline nascent entrepreneurs considering the number of strong ties they possess.

**Hypothesis 4c:** There is no significant difference between online nascent entrepreneurs considering the amount of information they are exchanging with their online and offline only strong ties contacts.

**Hypothesis 5:** There is a positive relationship between the number of contacts within a nascent entrepreneur's online network and the number of entrepreneurial ideas they identify. The following table shows the hypotheses of the current research and the objective of each one.

Hypothesis No.	Objective
1a & 1b	Compare the number of online and offline contacts a nascent entrepreneur communicates with
2a & 2b	Focus on the information exchange differences between a nascent entrepreneur's online and offline networks
3a & 3b	Concern with how nascent entrepreneurs use their online and offline social networks to gain business contacts to help with future ventures
3c & 3d	Deal with entrepreneurial idea identification differences between online and offline social networks
3e	Deals with whether the use of online social networks websites increases business knowledge.
4a	Compares the number of online and offline weak ties of the nascent entrepreneurs.
4b & 4c	Compares the number of online and offline strong ties of the nascent entrepreneurs.
5	Concern with the correlation between the numbers of contacts within an online network and the number of entrepreneurial ideas a nascent entrepreneur will identify.

For simplicity of the hypotheses in the current research, offline contacts are those members of one's social network that are communicated with each other through two methods, face-to-face or telephone. Online contacts are those members of

one's social network that are communicated with each other through online social network and the tools provided by that network. In addition, online nascent entrepreneur are those nascent entrepreneurs that use an online social network while offline nascent are those nascent entrepreneurs who do not use an online social network.

## **Methodology**

### **Research Populations and sample**

Two separate populations will be surveyed for this research. The first population is the target of much of the nascent entrepreneurial research, undergraduate students in Business departments in four private universities, which are (American University in Cairo (AUC), Modern Science and Art University (MSA), German University in Cairo (GUC) and Misr University for Science & Technology (MUST). The second population studied is intended to capture a broader age range of adults with a variety of interests and backgrounds, those taking continuing education classes at business studies division in School of Continuing Education- American University in Cairo (AUC), and MBA Program studies in Arab Academy for Science, Tech. & Maritime Transport.

The reasons behind choosing these populations are that the business studies division tends to attract individuals seeking skills and knowledge associated with starting a business, and the current position of the researcher provided the opportunity to obtain good response rate from the sample populations. The researchers used systematic sample (Malhotra & Birks, 2006). A total sample of 282 students was taken during break times between classes in the week days in fall semester in 2013.

### **Survey questionnaire**

The researchers used a structured questionnaire to collect data via email from two separate nascent entrepreneurial samples. The current research adopted the questionnaire which tested and used in Davidson and Honig's (2003) work concerning the importance of social networks and expanded it by including the impact of online social networks. In order to assess all the hypotheses in the current research, a variety of question types were used.

The questionnaire includes entrepreneurial idea identification and information exchange measures, demographic and socio-economic characteristics of the sample nascent entrepreneurs; and general questions about their Internet usage habits, business-founding expectations, and communications habits. Personal demographic questions about the non-nascent entrepreneur respondents and general questions about their online social network use were also included in the survey. SPSS (Statistical Package for the Social Sciences) version 15.0 was used to enter, code data, and analyze data.

## **RESULTS**

This section includes two parts, descriptive statistics and test results of each hypothesis.

### **Descriptive Statistics**

The research sample ages reflected the large number of undergraduate students included in the survey sample. Ages of the research sample distributed with approximately 44% between the ages of 18–23, 22% between the ages of 24–32, and 25% ranging from 33 to 45. The educational level of the research sample was fairly diversified. The results showed that 51% of the respondents had “Some College,” while 21% either an Associate’s or Bachelor’s degree. In addition, 23% of the respondents some sort of professional licensure or certification.

Use or non-use of online social networks and their self-identification as nascent entrepreneurs were the two key respondent characteristics for this research. Results in Table 1 and 2 provide a breakdown of the 282 respondents by these two characteristics, as well as those self-identifying as an entrepreneur.



**Table (1) Use of Online Social Networks**

Use online social networks	Frequency (N)	Percent (%)
No	71	25
Yes	211	75
<b>Total sample</b>	<b>282</b>	<b>100</b>

**Table (2) Entrepreneur Type**

Entrepreneur type	Frequency (N)	Percent (%)
Entrepreneur	73	25.9
Nascent Entrepreneur	115	40.8
Non Entrepreneur	94	33.3
<b>Total sample</b>	<b>282</b>	<b>100</b>

More than 66% of the total respondents self-identified as either an entrepreneur or nascent entrepreneur, with only 33.3% identifying as a non-entrepreneur. We can combine online social network use and entrepreneur type in Table 3 and we can derive that the numbers of nascent entrepreneurs that use an online social network site were similar to those that did not, with 63 and 52 respectively. In addition the results show that a majority of the respondents in each entrepreneur type category use online social network sites, which indicating that online social network use continues to expand and it is interesting to note that the largest percentage (by category) of non-online social network users is among the nascent entrepreneurial group.

**Table (3) Online Social Network Use by Entrepreneurial Type**

Online social networks use by type	Entrepreneur		Nascent entrepreneur		Non entrepreneur		Total	
No	12	16.4%	52	45.2%	7	7.5%	71	25%
Yes	61	83.6	63	54.8	87	92.5	211	75
<b>total</b>	<b>73</b>	<b>100</b>	<b>115</b>	<b>100</b>	<b>94</b>	<b>100</b>	<b>282</b>	<b>100</b>

When examining the age (Table 4) breakdown of respondents in this sample, some interesting characteristics are visible. Although the 18–23 age categories contained the largest number of nascent entrepreneurs (48.7%), the other age categories showed a fairly consistent percentage of nascent entrepreneurs. The entrepreneurial respondents were more evenly distributed through all of the age categories than the nascent entrepreneur respondents. The non-entrepreneurs showed a distribution similar to the nascent entrepreneurs.

Table (4) Age by Entrepreneur Type

Age	Entrepreneur		Nascent Entrepreneur		Non Entrepreneur		total	
	18-23	28	38.4%	56	48.7%	39	41.5%	123
24-32	14	19.2	22	19.1	26	27.6	62	22
33-45	20	27.4	27	23.5	23	24.5	70	24.8
Unknown	11	15	10	8.7	6	6.4	27	9.6
<b>total</b>	<b>73</b>	<b>100</b>	<b>115</b>	<b>100</b>	<b>94</b>	<b>100</b>	<b>282</b>	<b>100</b>

Table 5 shows respondent breakdown by gender. Men were a large majority of each group in the sample, representing 60.9% of the nascent entrepreneurs, 78% of the entrepreneurs and 79.8% of the non-entrepreneurs.

Table (5) Gender by Entrepreneur Type

Gender by type	Entrepreneur		Nascent Entrepreneur		Non Entrepreneur		total	
	Male	57	78%	70	60.9%	75	79.8%	202
Female	16	22	45	39.1	19	20.2	80	28.4
<b>total</b>	<b>73</b>	<b>100</b>	<b>115</b>	<b>100</b>	<b>94</b>	<b>100</b>	<b>282</b>	<b>100</b>

Considering the educational level, Table 6 shows that the largest nascent entrepreneur category was "Some College" (51%), which is not surprising considering the number of undergraduates surveyed. Overall, nascent entrepreneurs with a graduate degree made-up 20% of the sample, but the same group represented 24.6% of the entrepreneurs.

Table (6) Level of Education by Entrepreneur Type

Education level by type	Entrepreneur		Nascent Entrepreneur		Non Entrepreneur		total	
	Some college	36	49.3	59	51.3	49	52.1	144
Bachelor degree	18	24.6	23	20	18	19.2	59	21
Professional licensure or certification.	14	19.2	24	20.9	27	28.7	65	23
Unknown	5	6.9	9	7.8	0	0	14	5
<b>total</b>	<b>73</b>	<b>100</b>	<b>115</b>	<b>100</b>	<b>94</b>	<b>100</b>	<b>282</b>	<b>100</b>

The number of entrepreneurial ideas identified in the last year was a main component of this research. Results presented in table 7 show that the nascent entrepreneur group had a higher mean than the entrepreneur group. This could be due to the fact that entrepreneurs focus more of their energies on current ventures instead of new ones. This finding led the researchers to also breakdown the number of entrepreneurial ideas by age category for each entrepreneur type in table 8.

Table (7) Entrepreneurial Ideas by Entrepreneur Type

Ideas by type	Mean ideas	Min ideas	Max ideas
Entrepreneur	3.7	0	19
Nascent Entrepreneur	4.9	0	28
Non Entrepreneur	1.6	0	17

Table (8) Entrepreneurial Ideas by Age Group

Type	Age group	Mean ideas	Min ideas	Max ideas
Entrepreneur	18-23	4.6	2	10
	24-32	4.6	0	19
	33-45	4.1	0	14
	Unknown	5.5	0	10
Nascent Entrepreneur	18-23	7	0	28
	24-32	4.5	0	20
	33-45	3.1	1	20
Non Entrepreneur	18-23	1.9	0	10
	24-32	3.2	0	17
	33-45	1.1	0	10
	Unknown	0.6	0	1

In addition results presented in table 9 shows that males generated, on average, almost twice as many ideas than females within the "Entrepreneur" type, while male and female nascent entrepreneurs were almost similar in the number of ideas they reported, 4.9 and 4.8 respectively.

Table (9) Entrepreneurial Ideas by Gender

Entrepreneur type	Gender	Mean ideas	Min ideas	Max ideas
Entrepreneur	Male	5.8	0	19
	Female	3.2	0	14
Nascent Entrepreneur	Male	4.9	0	20
	Female	4.8	1	28
Non Entrepreneur	Male	3.3	0	17
	Female	1.2	0	10

Table 10 shows that those with some college education reported the highest mean number of ideas in each entrepreneur type.

**Table (10) Entrepreneurial Ideas by Type and Level of Education**

Type	Level of education	Mean ideas	Min ideas	Max ideas
Entrepreneur	Some college	9.1	4	14
	Bachelor degree	8	2	10
	Professional licensure or certification.	3.4	0	19
	Unknown	5.0	0	14
Nascent Entrepreneur	Some college	6.9	0	28
	Bachelor degree	4.9	0	18
	Professional licensure or certification.	4.9	1	12
	Unknown	4.6	1	20
Non Entrepreneur	Some college	2.7	0	10
	Bachelor degree	0.0	0	0
	Professional licensure or certification.	1.9	0	17

Table 11 shows that the mean number of entrepreneurial ideas identified for online nascent entrepreneurs is nearly double that of offline nascent entrepreneurs and the online nascent entrepreneur group reported both a mean and maximum number of ideas larger than the other groups.

**Table (11) Entrepreneurial Ideas by Type and Use of Online Social Network**

type	Use online social networks	Mean ideas	Min ideas	Max ideas
Entrepreneur	Yes	3.8	0	19
	No	4.0	0	14
Nascent Entrepreneur	Yes	6.2	0	28
	No	3.2	0	20
Non Entrepreneur	Yes	1.8	0	17
	No	1.3	0	12

### Hypotheses Test Results

*Hypothesis 1a: There is no significant difference between online and offline nascent entrepreneurs considering the number of contacts they are communicating.*

The t-test results in Table 12 show that the mean number of contacts communicated with for online nascent was more than 348.55, while for offline nascent it was more than 31.44. This difference was statistically significant at the  $p < .05$  level. The standard deviation for both is large, but they are consistent in relation to their respective means.

**Table (12) t-test for difference between online and offline nascent entrepreneurs considering the number of contacts they are communicating**

	Mean***	Std. deviation
Online nascent total contacts	348.55	290.06
Offline nascent total contacts	31.44	25.78

\*\*\*significant difference at  $p < .05$

Results show support for the difference in means which support for rejecting Hypothesis 1a.

*Hypothesis 1b: There is no significant difference between online nascent entrepreneurs considering the number of online and offline only contacts they are communicating.*

The t-test results in Table 13 show that the mean number of online contacts communicated with was 268.13 while offline contacts communicated with was 80.41. This difference was statistically significant at the  $p < .05$  level. The standard deviation for both was large, with the standard deviation for offline contacts larger in relation to its mean.

**Table (13) t-Test for the difference between online nascent entrepreneurs considering the number of online and offline only contacts they are communicating**

	Mean***	Std. deviation
Online nascent online contacts	268.13	241.20
Offline nascent offline contacts	80.41	89.99

\*\*\*significant difference at  $p < .05$

Results show support for the difference in means which support for rejecting Hypothesis 1b.

*Hypothesis 2a: There is no significant difference between online and offline nascent entrepreneurs considering the amount of information they are exchanging.*

The t-test results in Table 14 show that the online nascent entrepreneur information exchange mean was 201.13 compared to the offline nascent entrepreneur information exchange mean of 21.15. This difference was statistically significant at the  $p < .05$  level. The standard deviation for each was large, but they were in proportion to one another.

**Table (14) t-Test for the difference between online and offline nascent entrepreneurs considering the amount of information they are exchanging**

	Mean***	Std. deviation
Online nascent information exchange	201.13	189.74
Offline nascent information exchange	21.15	20.23

\*\*\*significant difference at  $p < .05$

Results show support for the difference in means which support for rejecting Hypothesis 2a.

*Hypothesis 2b: There is no significant difference between online nascent entrepreneurs considering the amount of information they are exchanging with their online and offline only contacts.*

The t-test results in Table 15 show that the online information exchange mean was 142.39 compared to the offline information exchange mean of 49.98. This difference was statistically significant at the  $p < .05$  level. The standard deviation for each was large, but they were in proportion to one another.

**Table (15) t-Test for the difference between online nascent entrepreneurs considering the amount of information they are exchanging with their online and offline only contacts**

	Mean***	Std. deviation
Online contacts information exchange	142.39	136.62
Offline contacts information exchange	49.98	59.81

\*\*\*significant difference at  $p < .05$

Results show support for the difference in means which support for rejecting Hypothesis 2b.

*Hypothesis 3a: There is no significant difference between online and offline nascent entrepreneurs considering the number of business contacts they gain.*

The t-test results in Table 16 show that the mean number of business contacts for online nascent entrepreneurs was 36.74 while offline business contact mean was 4.92. This difference was statistically significant at the  $p < .05$  level. The standard deviation for both items was quite large.

**Table (16) means testing for the difference between online and offline nascent entrepreneurs considering the number of business contacts they gain**

	Mean***	Std. deviation
Online nascent business contacts	36.74	60.01
Offline nascent business contacts	4.92	14.12

\*\*\*significant difference at  $p < .05$

Results show support for the difference in means which strongly support for rejecting Hypothesis 3a.

**Hypothesis 3b:** *There is no significant difference between online nascent entrepreneurs considering the number of business contacts they gain from their online and offline only contacts.*

The t-test results in Table 17 show that the mean number of online business contacts was 25.23 while offline business contact mean was 11.33. This difference was statistically significant at the  $p < .05$  level. The online business contact mean was larger and both had a large standard deviation in proportion to each other's mean.

**Table (17) t-Test for the difference between online nascent entrepreneurs considering the number of business contacts they gain from their online and offline only contacts**

	Mean***	Std. deviation
Online business contacts	25.23	45.80
Offline business contacts	11.33	23.54

\*\*\*significant difference at  $p < .05$

Results show support for the difference in means which statistically support for rejecting Hypothesis 3b.

**Hypothesis 3c:** *There is no significant difference between online and offline nascent entrepreneurs considering the number of entrepreneurial ideas they are identifying.*

The t-test results in Table 18 show that the mean number of entrepreneurial ideas for online nascent entrepreneurs was significantly larger than for offline nascent entrepreneurs (7.22 compared with 2.91 respectively). This difference was statistically significant at the  $p < .05$  level.

**Table (18) t-Test for the difference between online and offline nascent entrepreneurs considering the number of entrepreneurial ideas they are identifying**

	Mean***	Std. deviation
Online nascent entrepreneurial ideas	7.22	5.99
Offline nascent entrepreneurial ideas	2.91	4.45

\*\*\*significant difference at  $p < .05$

Results show support for the difference in means which statistically support for rejecting Hypothesis 3c.

As a further test of the hypothesis, a Hierarchical Regression Analysis was conducted. Entrepreneurial ideas were first regressed against age and education, then on online information exchange, and finally upon online nascent entrepreneur offline information exchange to determine if any of these factors could be used to predict the number of entrepreneurial ideas identified. The results are shown in Table 19. None of the models showed significance.

**Table (19) Regression Results for Online and Offline Information Exchange, Age, and Level of Education Impact on Entrepreneurial Ideas**

Variable	Model 1 beta	Model 2 beta	Model 3 beta
Age	-.225	-.230	-.244
Education	.019*	.017*	.049
Online information exchange		.058	-.014
Offline information exchange			.162
F	1.952	1.344	1.336
Adjusted R square	.029	.016	.021
Change in R from model 2			-.013
Change in R from model 3			.005

\*significant difference at  $p < .05$

*Hypothesis 3d: There is no significant difference between online nascent entrepreneurs considering the number of entrepreneurial ideas they are identifying from their online and offline only contacts.*

The means testing results in Table 20 show a mean of 3.22 and a standard deviation of 1.13, which places responses firmly around the number "3". In addition the list of responses show that 14 responses were below "3", indicating disagreement or strong disagreement, and 27 were above "3", indicating agreement or strong agreement.

**Table (20) Test of Means for the difference between online nascent entrepreneurs considering the number of entrepreneurial ideas they are identifying from their online and offline only contacts**

	Mean	Std. deviation
Online nascent – online vs. offline entrepreneurial ideas	3.22	1.13

Results were mixed, the mean indicates that respondents generally neither agree nor disagree with the previously identified statement. However, the largest number of



respondents (24) either “Agreed” or “Strongly Agreed” with the statement. Only 13 either “Disagreed” or “Strongly Disagreed,” while 26 “Neither Agreed nor Disagreed.” Results were conclusive for Hypothesis 3d. However, results show that when “agree/strongly agree” responses are combined; they represent the largest response group. When the 26 “neither agree/disagree” responses are added to the “agree/strongly agree” responses, more than 79% of the respondents, 50 out of 63 respectively, did not disagree that they identified more ideas from their online network.

*Hypothesis 3e: There is no significant difference between online nascent entrepreneurs considering the business knowledge they gain.*

This was a single item measure based on responses to a 5-point Likert scale of agreement. A “3” in the results is an indicator that the respondents neither agreed nor disagreed with the statement that, “Since I began using my online social network, I have increased my general business knowledge.” The means testing results in Table 21 show that the mean response was 3.09 with a standard deviation of 1.23. In addition the list of responses shows that 25 responses were above the mean and 14 below it. The two largest response categories, by a significant margin, are “3” (Neither Agree/Disagree) and “4” (Agree).

**Table (21) Test of Means for the difference between online nascent entrepreneurs considering the business knowledge they gain**

	Mean	Std. deviation
Online nascent business knowledge	3.09	1.23

Results were mixed, the mean indicates that respondents generally neither agreed nor disagreed with the previously identified statement. However, the largest number of respondents (25) either “Agreed” or “Strongly Agreed” with the statement. Only 14 either “Disagreed” or “Strongly Disagreed,” while 24 “Neither Agreed nor Disagreed.” Results were conclusive for Hypothesis 3e.

However, results show that when ‘agree/strongly agree’ responses are combined; they represent the largest response group, with a total of 25 respectively. When the 24 ‘neither agree/disagree’ responses are added to the “agree/strongly

agree” responses, more than 77% of the respondents, 49 out of 63 respectively, did not disagree with the statement that “since they began using their online social network site, they have increased their level of business knowledge.”

**Hypothesis 4a:** *There is no significant difference between online and offline nascent entrepreneurs considering the number of weak ties they possess.*

The t-test results in Table 22 show that the mean number of weak ties for online nascent entrepreneurs was 301.56 while for offline nascent entrepreneurs it was 30.01. The difference was statistically significant at the  $p < .05$  level. Both have a rather large standard deviation, but they are consistent in relation to their respective means.

Table (22) *t*-Test for the difference between online and offline nascent entrepreneurs considering the number of weak ties they possess

	Mean***	Std. deviation
Online nascent weak ties	301.56	289.14
Offline nascent weak ties	30.01	26.82

\*\*\*significant difference at  $p < .05$

These results show strong statistical support for rejecting Hypothesis 4a.

**Hypothesis 4b:** *There is a significant difference between online and offline nascent entrepreneurs considering the number of strong ties they possess.*

The t-test results in Table 23 show that the mean number of contacts communicated with by online nascent entrepreneurs was 41.22 while it was 7.34 for offline nascent entrepreneurs. The difference was statistically significant at the  $p < .05$  level. The standard deviation for both is quite large, but they are consistent in relation to their respective means.

Table (23) *t*-Test for the difference between online and offline nascent entrepreneurs considering the number of strong ties they possess

	Mean***	Std. deviation
Online nascent strong ties	41.22	36.98
Offline nascent strong ties	7.34	6.24

\*\*\*significant difference at  $p < .05$

These statistical results show strong support for rejecting Hypothesis 4b.

**Hypothesis 4c:** *There is no significant difference between online nascent entrepreneurs considering the amount of*

information they are exchanging with their online and offline only strong ties contacts.

This was a single item measure based on responses to a 5-point Likert scale of agreement. A “3” in the results is an indicator that the respondent neither agreed nor disagreed with the statement that, “they exchange more information with their very close online contacts than with their very close offline contacts.” The means test results in Table 24 show that the mean response was 2.91, with a standard deviation of 1.31. In addition the list of responses shows that 26 responses were below the mean and 23 above it. The two largest response categories were “2” (disagree) and “4” (agree).

**Table (24) Test of Means for the difference between online nascent entrepreneurs considering the amount of information they are exchanging with their online and offline only strong ties contacts**

	Mean	Std. deviation
Online strong ties vs. offline strong ties information exchange	2.91	1.31

The interval is closer to “3” than “2”. This, combined with the response listings indicates that although respondents generally neither agree nor disagree, they are more likely to disagree than agree. Results are conclusive for Hypothesis 4c.

**Hypothesis 5:** There is a positive relationship between the number of contacts within a nascent entrepreneur’s online network and the number of entrepreneurial ideas they identify.

A means for online nascent entrepreneurial total contacts and entrepreneurial ideas are shown in Table 25. A Pearson Correlation was conducted to determine if any correlation or association existed between the factors, with results in Table 26. The Pearson results show no significance at the  $p < 0.05$ .

**Table (25) means testing for the relation between the numbers of contacts within a nascent entrepreneur’s online network and the number of entrepreneurial ideas they identify**

	Mean	Std. deviation
Online nascent total contacts	253.34	241.67
Offline nascent entrepreneurial ideas	7.41	6.14

**Table (26) Pearson Correlations between the numbers of contacts within a nascent entrepreneur’s online network and the number of entrepreneurial ideas they identify**

		Contacts	Ideas
Online contacts	Pearson correlation	1	.131
	Sig. (2- tailed)		.175
Entrepreneurial ideas	Pearson correlation	.131	1
	Sig. (2- tailed)	.175	

As a further test of the hypothesis, a Hierarchical Regression Analysis was conducted. Entrepreneurial ideas were then regressed against weak ties, strong ties, online business contacts, and offline business contacts to determine if any of these factors could be used to predict the number of entrepreneurial ideas identified. Results are in Table 30. None of the models showed significance.

**Table (30) Regression Results for Weak Tie, Strong Tie, Online and Offline Business Contacts Influence on entrepreneurial Ideas Identified**

Variable	Model 1 beta	Model 2 beta	Model 3 beta
Weak ties	.253	.225	.224
Strong ties	-.049	-.038	-.037
Online business contacts		.089	-.081
Offline business contacts			.024
F	1.904	1.414	1.052
Adjusted R square	.028	.019	.003
Change in R from model 2			.008
Change in R from model 3			.016

## CONCLUSION

Research results showed that approximately one-third of a respondent's online contacts were also offline contacts, with 205 online contacts and 67 online/offline contacts on average. Online nascent entrepreneurs demonstrated a link between business decisions and social structures as shown through their increased number of business contacts as compared to offline nascent entrepreneurs (Hypothesis 3a). Entrepreneurs also tend to have well established social networks, using them to obtain and generate business ideas (Brown & Butler, 1995) and to get advice and resources to launch a business (Granovetter, 1985; 1992).

As nascent entrepreneurs work through the discovery process, they make extensive use of their network of friends or their social capital. This social capital helps to expose them to

varying ideas and views, providing a wider frame of reference and support for new business ideas (Aldrich et al., 1998; Aldrich & Zimmer, 1986).

The large number of online contacts and increased information exchange as compared to offline nascent entrepreneurs found in this research seems to demonstrate improved access to this social capital. The immediate access to so many individuals through use of online social networks may impact how these networks are accessed and the way in which ideas and knowledge are exchanged within a network. This did provide some support for the notion that social capital can be more important than obtaining a college education and in the same time the current research found that the level of education has little impact on the idea identification process.

In addition nascent entrepreneurs and entrepreneurs with only some college education were found to identify just as many or more ideas than those with advanced (bachelors and graduate) degrees. These results provide insight into the power of social capital in recognizing entrepreneurial ideas.

Access to the appropriate information plays a critical role in opportunity recognition (Gaglio & Katz, 2001; Kaish & Gilad, 1991; Shane, 2003), and this research postulated that the unique capabilities inherent to online social network sites would enhance a nascent entrepreneur's ability for idea identification or at the very least, increase the number of possible opportunities that nascent entrepreneurs would be exposed to. Research results support this postulation, with nascent entrepreneurs using online social networks to exchange in more information exchange with their contacts (Hypothesis 2a), possessing a larger number of online business contacts than offline business contacts (Hypothesis 3b), and ultimately identifying more opportunities than those that do not use online social network sites (Hypothesis 3c).

Ganovetter (1973) advocated maintaining an extensive network of weak ties since a majority of the new information within a network is transmitted through these weak tie exchanges (Granovetter, 2004). Results show that not only do online nascent entrepreneurs identify and maintain a larger number of weak ties overall (Hypothesis 4a), but they also

maintain a larger number of strong ties (4b) than those that do not use an online social network. This research found that nascent entrepreneurs using online social networks did report more entrepreneurial ideas than those that did not (Hypothesis 3c), supporting the belief that the use of an online social network does provide additional support for idea identification.

However, this research did not provide conclusive evidence for supporting the positive link between the number of online contacts and idea recognition (Hypothesis 5), which was only weakly supported in this study. Results from this research demonstrate that more entrepreneurial ideas are identified by those using online social networks, but it is still unclear what combination of online factors truly influences this increase in idea identification. In addition another finding from this research was that age and level of education did not impact results.

Overall, this research has expanded the applicability of previous research from traditional social networks to online networks. Nascent entrepreneurs who use online social networks communicate with more contacts (Hypothesis 1a), communicate with more online than offline contacts (Hypothesis 1b), have a larger number of business contacts (Hypothesis 3a), have a larger number of weak and strong ties (Hypotheses 4a, 4b) and identify more entrepreneurial ideas than those that do not use online social network sites (Hypothesis 3c).

### **Limitations**

The research sample was distributed through only one educational segment, community colleges, within Egypt. Time constraints and desire for a larger response rate provided constraints on the use of a broader sample base. This limitation was addressed through the expanded inclusion of adult continuing education students. This student base provided access to a broader age, race, and work experience demographic than was possible by targeting only undergraduate students. By limiting the survey to Egypt, findings from this research may be limited due to cross-cultural differences. However, two key factors critical to this research were easily met by conducting this survey in Egypt and more specifically, in Cairo.

Cairo has a large percentage of the general population who has access to the Internet and online social networks. The other critical factor to be met was that the general population had to have a high

enough concentration of nascent entrepreneurs so that the total sample size could be limited to hundreds instead of thousands. The Internet-based survey method brought some limitations as well. While different Internet connection speeds and browser differences/settings (Couper, 2000) can impact survey completion, the broad-based student use of college computer systems and networks mitigated many of these limitations.

### **Future Research**

There are five directions that should be taken in consideration for future researches. The first future research direction is to extend the research to study online and offline entrepreneurs. The second research direction would be to focus more on the factors impacting entrepreneurial idea identification such as online social network use, the number of contacts, and information exchange combine to influence the idea identification process.

The third research direction is to expand this research on idea identification to include the opportunity recognition process. While this study focused on idea identification and not the opportunity recognition process, results suggest a need to conduct further research concerning the impact of online social networks on the opportunity recognition process. The fourth research direction is to determine how the combination of online and offline factors influence idea identification.

The fifth research direction is to better measure the hypotheses that produced inconclusive results. Since results from this research indicate that more entrepreneurial ideas are identified by nascent entrepreneurs that use online social networks, further research is needed to determine the combination of online factors that influence this increase in idea identification.

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