



# How Technologies Are Changing Women's Social Networks & Improving Entrepreneurial Opportunity Recognition & Firm Performance

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## Abstract

*Social networks are now a ubiquitous feature of the modern world. People use social media for various purposes, such as obtaining information, interacting with other people, and learning about new trends and developments that affect them. Online social media platforms are important tools that are allowing women entrepreneurs to overcome traditional societal limits and improve the effectiveness of their firms' operations. In this paper we develop a conceptual discussion and three propositions related to the improvement of female social networks for pursuing entrepreneurship as a result of social media platforms, and more specifically how these platforms have enhanced women entrepreneur's opportunity recognition processes and firm performance. Following a review of the literature and the development of the propositions, implications for practice, limitations, and future research directions are offered.*

**Keywords:** Women entrepreneurs, Social networks, Opportunity recognition, Firm performance

## INTRODUCTION

Entrepreneurs are important economic actors (Hafer, 2013; Schumpeter, 1934) who advance societies through job creation (Birch, 1987; Kirchoff & Phillips, 1988; Scarborough & Cornwall, 2019; Van Stel & Storey, 2004) and by spurring economic growth (Audretsch & Thurik, 2001; Kumar & Liu, 2005; Rahman & Fatima, 2011; Wennekers & Thurik, 1999). This is true for economies around the world, not just in the U.S. (e.g., Crump, Hill, & Hardin, 2018; Pilková & Reháč, 2017; Ratten, Ferreira, & Fernandes, 2016; Sheriff & Muffatto, 2015).

Over the last several decades, there has been significant growth in the number of female entrepreneurs (Aldamiz-Echevarría, Idígoras, & Vicente-Molina, 2017; Brush, Edelman, Manolova, & Welter, 2019; Yadav & Unni, 2016). This trend has manifested both in the developed and developing world. In the U.S., women now represent the majority of new business owners (Brush, et al., 2019). In many developing countries, women tend to establish small, informal businesses that they can run concurrently while undertaking their traditional home-keeping roles (Boeri, 2018). Some of the critical factors that have contributed to the increase in women's participation in entrepreneurship include increased educational attainment for women, improved access to financial services, and better access to technology resources (Azis, Haeruddin, & Azis, 2018; Boeri, 2018).

Entrepreneurs must overcome many barriers in order to succeed; however, cultural traditions, gender stereotypes, and social norms create additional barriers for women entrepreneurs that make it more difficult for them to create and grow their firms (Brindley, 2005; De Bruin, Brush, & Welter, 2007; Javadian & Singh, 2012; Kramer, 2020). Even for women with great potential opportunities and the right education and experience, the combination of gender stereotypes, social norms, and beliefs can lead to more limited access to resources, which often prevent women from becoming entrepreneurs and/or make it difficult for them to succeed with new venture creation (Brindley, 2005; De Bruin, et al., 2007).

Gender theory assumes that the behaviors of men and women differ and that they are driven by societal expectations for members of each gender (Farr-Wharton & Brunetto, 2006). For example, women are expected to display more "feminine" qualities, such as empathy, while men are more aggressive and self-confident. Traditional gender theory provide insight into why women are underrepresented in business in general (Hare-Mustin & Marecek, 1988). In most societies, a woman is the center of the family and is often forced to combine work with household responsibilities, bear family burdens, which prevent women from rising, although there are no formal restrictions (Karen, 2021). In addition, many women suffer from lower self-esteem and are unable to break from social

stereotypes and perceived social restrictions (Karen, 2021) and may not be as comfortable dealing with entrepreneurial risk (Brindley, 2005).

Sustained campaigns for gender equity and equal opportunity have made it easier for women around the world to venture into fields of business that men traditionally dominated. In addition, social networking is becoming one of the most potent enablers of business operations in the modern world. New technologies are helping people communicate quicker and over wider geographic areas and modern social media platforms feature highly effective business and marketing functions. As more regions of the world continue to open up to global trade, social media platforms have become useful resources for accessing information, building relationships with mentors, communicating with internal and external stakeholders, deploying marketing operations and undertaking transactions between sellers and buyers.

Entrepreneurship has also benefited greatly from globalization, particularly since people now find it easier to reach consumers in various regions of the world. Women are becoming increasingly prominent in business and entrepreneurship (Brush, et al., 2019; Meyer & De Jongh, 2018) and now have more opportunities to establish and operate independent ventures than ever before (Peprah & Adekoya, 2020). We believe that social networking through social media platforms such as Facebook, Twitter, TikTok, Instagram, and LinkedIn, has been invaluable in creating these opportunities and improving women's entrepreneurial performance.

Social networks are a critical source for business ideas leading to opportunity recognition (Christensen & Peterson, 1990; Singh, 2000). Entrepreneurs often do not have all the knowledge and information surrounding potential ventures themselves; researchers have found that the entrepreneur's social network can help expand their knowledge and experience to recognize, identify, and assess new opportunities. According to Barnes (1972), an individual's social network consists of all people who know whether he has weak or strong ties relationship with them. Both men and women use social network on recognizing entrepreneurial opportunities. However, women entrepreneurs have been found to benefit more than their male counterparts through the development of their social networks (De Bruin, et al., 2007; Ibarra, 1992; Javadian & Singh, 2012).

This paper focuses on differences in social networks between men and women and the unique benefits women have gained as a result of the emergence of online social media platforms. The improvement in terms of size and reach of women's social networks has allowed them to better recognize entrepreneurial opportunities and improve firm performance. We begin by reviewing the literature on the growing importance of female entrepreneurs, differences in social networks between the genders and the unique benefits of social networks to women entrepreneurs. Following the literature review, we develop three theory-based propositions, discuss practical and theoretical implications and limitations before offering future research directions.

## LITERATURE REVIEW

### *Growing Importance of Female Entrepreneurship*

Entrepreneurship is important for job creation (Birch, 1987), innovation (Schumpeter, 1934), and economic dynamism and growth (Hathaway & Litan, 2014). Amid the ongoing trend towards globalization, entrepreneurship has been embraced by younger generations across the globe (Coulibaly, Erbao, & Mekongcho, 2018). Entrepreneurship helps individuals to transition from formulating ideas towards actualizing the ideas and creating economic opportunities for themselves and others in the process (Coulibaly, et al., 2018). Toward this end, entrepreneurship has been particularly important for women (Brush, et al., 2019; De Bruin, et al., 2007; Ibarra, 1992) and female empowerment (Ratten & Pellegrini, 2020; Riandika & Mulyani, 2020). Emerging technologies such as the evolution of the smartphone has further strengthened the ability of women to engage in entrepreneurial practice in recent years (Hossain, Nurunnabi, Hussain, & Shan, 2020).

Facilitating women's increased involvement in entrepreneurial endeavors is critical for sustainable economic growth, as well as modernizing societies, promoting equality, and ensuring fairness for all (Dvouletý, Gordievskaya, & Procházka, 2018; Fritsch & Wyrwich, 2017). Major global organizations like the World Bank and the United Nations have spearheaded efforts to bridge the gender gap and promote equal access to opportunity among men and women in various regions of the world (Fritsch & Wyrwich, 2017). The emergence of evidence pointing to the economic benefits of empowering women in organizations, communities, and societies has added rational weight to the moral premise for advocacy on women's involvement in economic activities.

As mentioned above, entrepreneurship represents an important economic activity. It tends to be a highly involving endeavor that requires a lot of time and resources. Women in developing countries have a particularly difficult time balancing their ascribed duties, such as homemaking, with the responsibilities that come with entrepreneurial ventures (Javadian & Singh, 2012; Peprah & Adekoya, 2020). This is the same conundrum that women who pursue highly involving careers tend to encounter. For such women, it is often necessary to determine an ideal compromise between professional and personal obligations, which often leads them to choose one or the other (Peprah & Adekoya, 2020). However, by utilizing modern technological tools, it is possible to reduce and eliminate barriers and enable women to pursue entrepreneurship without necessarily having to compromise on other personal interests and obligations, at least to the extent that this was the case in the past.

Entrepreneurship gives women the opportunity to contribute towards improving the financial prospects of their families, thus uplifting society as a whole. In particular, the developing world has shown an overwhelmingly positive trend in regard to the involvement of women in business and entrepreneurship over the past few decades (Peprah & Adekoya, 2020). By utilizing technological tools like online social networking platforms, women are better able to pursue entrepreneurship and undertake their business activities more efficiently and effectively.

### ***Utility of Social Networking Platforms***

Social networking constitutes the activity of establishing and maintaining relationships with other people, as well as the resources that people use to facilitate their endeavors by sustaining these relationships (Dhar, Bose, & Khan, 2019). For entrepreneurs, this means access to information sources, mentors, suppliers, investors, customers, and employees. Over the last decade, social networking through online media platforms such as Facebook, Instagram, Twitter, Snapchat, and LinkedIn have become ubiquitous (Nisar, Prabhakar, & Strakova, 2019). These platforms allow communities made up of billions of individuals across the globe to utilize accessible and scalable technologies that allows for the sharing and discovery of information (Dhar et al., 2019; Duane & O'Reilly, 2017). Some social media sites have developed highly specialized functions that specifically appeal to the business needs and preferences of entrepreneurs. The two main advantages of online media for entrepreneurs are increasing exposure to people and opportunities, and expanding traffic for businesses (Duane & O'Reilly, 2017).

Social networking in the modern world is a potent resource that can empower people by giving them access to information and opportunities within their communities. Entrepreneurs generally need to be able to identify and take advantage of opportunities quickly as they arise (Zollo, Filieri, Rialti, & Yoon, 2020). The ability to successfully undertake such activities depends on the capacity of an entrepreneur to access information quickly and conveniently. Social networking serves this precise purpose. Through technologies like smart phones (Hossain, et al., 2020) and social media (Dhar et al., 2019; Duane & O'Reilly, 2017), entrepreneurs can keep track of emerging trends and recognize how to turn them into useful business opportunities (Zollo et al., 2020).

Social networking also enables entrepreneurs to meet other likeminded individuals and to share the skills and knowledge that they need to grow and improve themselves (Zollo et al., 2020). People seeking to establish a business operation in a certain industry may join a social network that specializes in their particular field or industry. Information is a crucial resource for any entrepreneur who aspires to establish and sustain a successful business operation in the modern world. As more people gain access to the internet, especially in the developing world, online social media platforms will continue to be an important resource for promoting the welfare of individuals and groups in the modern world (Dhar et al., 2019). With this in mind, social networking is an essential component that all entrepreneurs should endeavor to utilize to fulfil their business objectives.

### ***Gender-Based Differences in Social Networks***

Historically, differences in social networks between men and women have been a significant factor in the differential rates of entrepreneurship. For example, Blommaert, Meuleman, Leenheer, and Butkēviča (2020) analyzed longitudinal data gathered in the 2009-2013 period and found that women had limited opportunities because their social networks did not contain the same number of beneficial contacts as those of men. Specifically, women's networks were found to be lacking the diversity of men's networks when it came to their contacts' occupations. This finding suggests that women's networks are likely to be more limited in the number of contacts that could be beneficial to their entrepreneurial activities (Blommaert et al., 2020). This is not necessarily surprising, as women typically have greater responsibilities to their families than men (Christina, et al., 2020; Linehan, 2001). As Greene (2000) points out, the role of women's family structure, whether she is a wife or mother or single, impacts any potential roles in the working world she may want to take on. These traditional roles limit human capital and access to business contacts.

Like men, women depend on networks and information from others in their network as the first stage in the identification of opportunities (Ljunggren & Kolvereid, 1996). However, the differences in their networks relative to men is likely to have hindered their potential for recognizing high-quality opportunities.

According to Smeltzer & Fann (1989), women have more formal organized networking comparing with men, but again, if that networking is limited to those who do not have business experience or entrepreneurial experience, it is limited. This is why Verhuel & Thurik (2001) argue that women have less effective networking practices than men. In addition, women traditionally consider family opinion more than men when going through the decision-making process of whether to pursue business opportunities (Aldrich & Cliff, 2003; Javadian & Singh, 2012). This embeddedness within familial structures further limits women who may be considering new venture creation and entrepreneurship.

### ***Social Networks, Opportunity Recognition and Firm Performance***

Entrepreneurship depends on the ability to see and analyze opportunities (Shane & Venkataraman, 2000; Singh, 2000; 2001). Eckhardt and Shane (2002) explain how entrepreneurial activity emerges and when information is unevenly distributed around people, it is the possession of specific information that leads to the presence and identification of entrepreneurial opportunities. Opportunity recognition is a cognitive task that allows some

individuals but not others to consider and recognize the business opportunity (Baron, 2004; Kirzner 1973; 1979). In addition, research suggests there are significant benefits to leveraging one's social network to improve the opportunity recognition process (Singh, 2000).

In his classic paper on the strength of weak ties, Granovetter (1973) argues that weak ties within one's personal social network act as "bridges" to information sources not necessarily contained within an entrepreneur's immediate (strong-tie) network. In fact, Granovetter (1973) points out that because an individual does not interact with weak ties regularly, it is likely that weak ties provide more unique information than strong ties. We choose to build strong relationships with people like ourselves, who share similar life experiences and share the same world view. Strong ties are close friends and family members who often have access to the same information as ourselves. However, weak ties are more likely to be different on a wide variety of demographic factors such as education, socio-economic status, age, gender, religion, etc. They often provide links to different types of knowledge not otherwise known to ourselves. Thus, access and interaction with weak tie sources of information may be critical for opportunity recognition and resource acquisition. A potential entrepreneur who only interacts with a small group of tight-knit friends and family members (strong ties) has less chance of learning valuable information that can lead to entrepreneurial success than an entrepreneur who mines information from the broader network of weak ties in his/her social network.

Ultimately, choosing the "right" opportunity can have significant firm performance implications and may be the difference between success and failure for entrepreneurs (Singh, 2000). Entrepreneurship does not take place within a vacuum and it is unlikely for an individual entrepreneur to have all of the knowledge and resources one his/her own. Beyond the opportunity recognition process and the choice for what opportunity to pursue as a new venture, access to resources is also facilitated through one's network. It is highly unlikely that close friends will be able to provide everything necessary for entrepreneurial success. The fact is, one can have a large number of weak ties relative to strong ties and tapping into the broader community of weak ties can be the key to success. Thus, an entrepreneur's social network can help with everything from information to resources which make the difference between success and failure.

With the literature review discussion in mind, in the next section we discuss how social networks are changing, especially for women, largely as a result of new technologies and social media platforms. We further propose that this is improving the environment for women to become entrepreneurs and to achieve success with their new ventures.

## THEORETICAL PROPOSITION DEVELOPMENT

### ***Changing Nature of Women's Social Networks as a Result of Technology***

Research that studies issues of gender inequality, gender segregation, and differences between men and women in different spheres of activity constitutes a significant area of social science research. As for gender-based entrepreneurship, there is also a robust body of literature that has found differences between males and females in terms of such things as propensity to take risk (Brindley, 2005), how negative societal stereotypes and male-centric traditions prevent women from starting businesses (Javadian & Singh, 2012), differences in social capital and access to financial capital (De Bruin, et al., 2007). All of these issues are consistent with, and contribute to, findings in the research based on Global Entrepreneurship Monitor data from 17 countries showing that entrepreneurial propensity of women is depressed across the globe (Langowitz & Minniti, 2007). While women entrepreneurs remain a minority of all entrepreneurs globally their numbers are increasing rapidly, and in the U.S., they now represent the majority of new business owners (Brush, et al., 2019).

We believe that much of the change is a result of changing social networks of women and greater access to individuals/contacts who can help women pursue their entrepreneurial ventures. As discussed above, while women have had to take on the traditional familial role of caregiver, liberalization of societal standards, greater numbers of women in the work force, and increased globalization is changing the degree of segregation from business and entrepreneurship that women have historically suffered from (Gupta, Goktan, & Gunay, 2014). This is changing the nature of who women interact with and broadening their social networks to include individuals more favorable to successful new venture creation.

The widespread access of smart phones (Hossain, et al., 2020) and growth in social media (Dhar et al., 2019; Duane & O'Reilly, 2017; Nisar, et al., 2019) has allowed people to build relationships with a wider set of contacts. For women who have traditionally had structural disadvantages in their social networks relative to men, these tools and technologies have opened up new avenues to information. This leads to our first theoretical proposition:

***Proposition 1: As a result of new social media technologies, the social networks of women have become more favorable to entrepreneurship.***

### ***Opportunity Recognition and Gender***

Opportunity recognition is a key process and the first step toward successful entrepreneurship (Christina, et al., 2021; Lim & Xavier, 2015; Shane & Venkataraman, 2000; Singh, 2000; 2001). Both human capital theory and social feminist theory posit that there are differences between males and females with respect to recognizing opportunities (DeTienne & Chandler, 2007). DeTienne and Chandler (2007) hypothesized that differences in human capital (e.g.,

age, education, prior work and entrepreneurship experience) between men and women would result in different opportunity recognition processes and different quality opportunities (DeTienne & Chandler, 2007). In their sample of undergraduate students, they did find that men were more likely to have prior entrepreneurship experience and that men and women followed different sequences to recognize opportunities (i.e., different opportunity recognition processes). However, they did not find differences in the innovativeness of the opportunities. This latter finding may have been the result of the fact that their sample was made up of undergraduate college students who tend to share similar backgrounds and are not as diverse in terms of their life experiences as men and women in the general population.

The opportunity recognition process is directly linked to entrepreneurial action. Ryu and Kim (2020) utilized data from 15 countries from the Global Entrepreneurship Monitor, the Gender Gap Index, and the World Economic Forum. The scholars were interested in how opportunity recognition affected entrepreneurial intentions. Their results showed that gender did have a moderating effect on the relationship between opportunity recognition and entrepreneurial intention, such that male entrepreneurs were more likely to indicate positive entrepreneurial intentions. A factor in these results may be who one interacts with in their social network. In this vein, Langowitz and Minniti (2007) reported that entrepreneurial propensity was increased for those who knew entrepreneurs in their social networks but that males were significantly more likely to know entrepreneurs than females. These findings are important because without intention one cannot act, which is consistent with Ajzen's (2002) Theory of Planned Behavior. The greater the intention, the more likely one is to act on that intention. In fact, Krueger, Reilly, and Carsrud (2000) and Kolvereid and Isaksen (2006) argue that intentions are the best predictor of planned behavior, including entrepreneurial behavior.

The application of a social capital theoretical framework has suggested that trust plays a significant role in shaping women's identification and pursuit of opportunities (Farr-Wharton & Brunetto, 2006). In their study of women entrepreneurs, Farr-Wharton and Brunetto (2006) found that 20 percent of the reason women entrepreneurs joined formal business networks is to search for business opportunities, however, many of the women in their sample reported issues of trust which diminished the value of these networks. As women have created their own online social networks through new media platforms, they are better able to control who they communicate with and how often they communicate. The control women have over their own online social networks should reduce the issues of trust that many female entrepreneurs felt with offline social networks in the past. They are also more likely to access and be able to interact with entrepreneurs. The benefits of such changes as a result of online social networking is more information flow and more trust and faith in that information that may assist in the opportunity recognition process.

While there have been historical differences in the opportunity recognition processes of males and females, social media and technology are breaking down societal barriers and limits to who women interact and communicate with. Similar to DeTienne and Chandler (2007), Christina et al. (2021) studied university students and found no differences in the opportunity recognition processes of males and females. Their results are encouraging and given the recency of their study, this could be an indication that we are moving toward gender equity. However, it should also be recognized that university students are likely to have significant online social media presences, which we have argued here assist with their social networking. Changes to the social networks of women would suggest changes in levels of trust within the network and access to more beneficial contacts who could help with opportunity recognition and new venture creation. The higher quality information flow would also likely help to increase entrepreneurial intentions. These are all beneficial to women entrepreneurs and results in our second formal proposition:

***Proposition 2: The changes to women's social networks as a result of new social media technologies have reduced the differences in the opportunity recognition processes of male and female entrepreneurs.***

### ***Entrepreneurial Performance***

Building on the previous section, Lim and Xavier (2015) present a framework in which opportunity recognition is directly linked to the social network, alertness of the entrepreneur and prior knowledge. They argue that only the right combination of these factors will allow an individual to achieve entrepreneurial success. The performance implications become clear. Having a strong social network will help an entrepreneur choose a more promising opportunity which, in turn, increases one's chances for success.

Historical research has found firm performance disparities between male and female-owned businesses. There are many reasons for these disparities including the fact that women entrepreneurs often struggle with having adequate capital and lower levels of education and experience than male entrepreneurs (Afandi & Kermani, 2015). Second, men and women tend to venture into different kinds of businesses and industries due to structural or inherent factors (Sappleton, 2018). The different business environments in which males and females typically start their firms within are subject to different forces. This often obscures comparisons and contribute to perceptions of women entrepreneurs underperforming in certain business aspects. In addition, because of traditional family responsibilities

and male-centric societal pressures (Javadian & Singh, 2012), female business owners often cannot dedicate the same amount of time as their male counterparts which can affect firm performance (Kwapisz, 2020).

More recent research now suggests that the performance gap between male- and female- firms has closed (Adachi & Hisada, 2016; Brush et al., 2019; Marlow & Martinez Dy, 2017). As discussed in the prior section, there is recent evidence that opportunity recognition processes are similar regardless of gender (Christina, et al. 2021). Further, when comparing women-owned businesses to those owned by men that compete in the same industry, research has found no significant difference in business survival and profitability (Kwapisz, 2020).

We argue that the closing of the performance gap is once again a result of the expansion and wide-spread use, as well as the increased utility of social media. In general, the use of social networking through online media platforms helps build entrepreneurial competencies (Palacios-Marqués, García, Sánchez, & Mari, 2019), which facilitates improved entrepreneurial performance. Maintaining constant awareness of one's performance in the context of the prevailing market conditions is a sure sign of a well-managed entrepreneurial venture (Khosla & Gupta, 2017).

As online social network media has increased, entrepreneurs have new tools at their disposal. The information that is available from monitoring online social media allows entrepreneurs to better track customer data and preferences and purchasing habits and improve decision making in the event of a market or industry development that necessitates changes in strategy or business structure (Syafitri & Ibrahim, 2020). Social networking can also allow for more effective marketing. Customer perception and satisfaction is particularly important today considering that consumers have easier and more convenient access to information on products and services (Hachana, Berraies, & Ftiti, 2018). As social media platforms have become more widely available, historical experience gaps between the genders have closed as women entrepreneurs have been able to access new information and interact with more experienced entrepreneurs and other relevant individuals with knowledge and experience in the industry that they compete in. More formally, we propose the following:

***Proposition 3: The changes to women's social networks as a result of new social media technologies have closed the firm performance gap between male and female entrepreneurs.***

## DISCUSSION

It is in the best interest of society to continue empowering women to be more involved in business and entrepreneurial activities. Over the past several decades, sustained global advocacy for equal opportunities for women has resulted in an increase in the number of women involved in entrepreneurship. Even in the developing world, which has traditionally lagged behind in terms of the progress of women's welfare, the numbers of women entrepreneurs have been rising steadily. The more prominent involvement of women in business and entrepreneurship is an overwhelmingly positive achievement that provides many socioeconomic benefits including a reduction of unemployment among the population. Entrepreneurship creates new revenue streams for individuals and the government, which ultimately raises people's living standards. Considering that women constitute half of the population, it is imperative to continue to build on the momentum that has been created.

In this paper, we bring attention to the importance and benefits of social media platforms to improving the social networks of women with respect to new venture creation. Social media has been somewhat maligned in recent years as a source of disinformation, but at its best, social media can be a tool for information flow and provide access to a wider circle of contacts that entrepreneurs – particularly women entrepreneurs can leverage for their firms.

Social media platforms have helped individuals improve their social networking capabilities. For would-be entrepreneurs it has provided access to information and potential resources that they could not have accessed just 20 years ago. This information facilitates better opportunity recognition processes and increased innovation. It has also helped increase globalization, as today's business owners can more easily access customers and deliver products/services around the world. As we have discussed, for women in particular, the traditional barriers that hindered them from venturing into entrepreneurship are gradually being brought down through technology, which has greatly enhanced the impacts of sustained global advocacy efforts to achieve gender equity.

The proliferation of technologies such as smart phones and online social media platforms have accelerated the process of improving social networks for women who seek to start new ventures and pursue entrepreneurial endeavors. As more women become entrepreneurs, there will be more potential female mentors and contacts who will further improve social networks of would-be women entrepreneurs. The ability to more easily find mentors and business associates who can provide information, as well as expand into previously unattainable markets with new client bases is all made possible through online social networking technologies. Social networking has the potential to elevate women entrepreneurs around the world by according them new opportunities, enhancing their capacity for innovation, and equipping them to manage their business operations strategically and successfully.

## **Implications for Practice**

For women who are pursuing entrepreneurship, it is important for them to learn about the specific benefits that social media platforms offer to facilitate successful new venture creation. Forums, workshops, and educational programs which teach social networking through these online platforms can further promote opportunity recognition and women's entrepreneurship more broadly. The social media firms themselves can promote the social benefits they provide as a countermeasure against recent criticism of the proliferation of disinformation across their platforms.

Policymakers, organizations, and business scholars also need to further embrace and encourage the new wave of women entrepreneurs (Green, 2017). Public policies which support child tax credits and child care can be promoted through women's online networks. Public investment capital, as well as increased opportunities to access capital through banks, venture capital firms, and private angel investors can all further promote women's entrepreneurship. This information can easily be disseminated through online social media. All of this can further increase the utility and benefits that women gain through their social networks, which can continue to build momentum for women-owned businesses.

### **Limitations**

There are several limitations to this paper that should be acknowledged. First, while there is general support for the propositions within the literature, they need to be empirically tested. Much of the discussion focuses on how women benefit from social networking through the growing online social media platforms, however men have also benefitted. We believe that women have enjoyed greater gains because these platforms have opened access to individuals who many women were not able to access traditionally. Our conjecture is that this has closed the information gap that limited women in the past, but ultimately, this remains an empirical question. It may be that men have benefitted just as much and the gap remains.

Another consideration is that while social media platforms have proliferated across all nations around the world, issues such as government censorship of online content, disinformation campaigns, and limited reliable high speed internet access may continue to limit access to high-quality information. It is likely that women in some parts of the world continue to suffer from these issues which may prevent improvements in the quality of their social networks. In these places and where disinformation is prevalent, if there has been growth in female entrepreneurship, then there may be other processes at work. These may be unique to those countries or corners of the internet, or they may be global. A deeper dive into these issues is needed.

Finally, we do not discuss or focus our research on the possibility that women continue to operate within male-centric, patriarchal societies. While we believe that there has been liberalization of societies to allow for greater equality between the genders, it is not clear how much progress has been made. If possible, for those testing the main effects we propose related to technologies improving social networks of women, efforts should be made to control for societal improvements in the way women are viewed and treated.

## **Future Research**

The limitations identified above notwithstanding this paper offers the possibility for new directions of inquiry that have not been fully explored in the literature. The ubiquity of social media platforms such as Facebook, Twitter, and LinkedIn has emerged quickly and as a result is still a relatively new phenomenon. In order to fully test the propositions, it is suggested that multi-year, longitudinal studies be conducted on nascent entrepreneurs through the opportunity recognition process, formation and founding of their ventures, and first few years of operations. These nascent entrepreneurs could include university entrepreneurship students, individuals working with agencies such as the U.S. Small Business Administration, or other programs that cater to individuals interested in entrepreneurship. By studying these entrepreneurs pre-founding, their use of social media and makeup of their social networks can be assessed. Data would then need to be collected quarterly or on a regular basis as these entrepreneurs operate their ventures over time. Although time consuming and potentially expensive, this information could more definitively identify the importance of social media to social networking and performance could be determined. By including other appropriate variables such as country culture for women (e.g. equality), financial capital invested, industry experience, educational attainment, and other control variables such as race, age, gender, industry outlook, economic conditions, etc., the relative importance of social media platforms and differences between males and females could be further isolated. If support for the propositions in this paper is found, it would greatly enhance our knowledge of women's entrepreneurship.

## **CONCLUDING THOUGHTS**

The world has moved to become more egalitarian and there is more wide-spread recognition of the important role that women play in growing economies. As a result, women have made tremendous gains in new venture creation and are becoming entrepreneurs in unprecedented numbers. This paper contributes to our understanding of the growth in women's entrepreneurship by focusing attention on social media platforms. As we have discussed, new technologies and social media platforms have improved the quality of social networks that women draw information

from which has greatly enhanced their opportunity recognition processes. This is still an emerging area of research but it is a potentially important area. Given that social media platforms are still relatively young, much research is still needed on their importance to entrepreneurship.

We contribute to the literature on women's entrepreneurship through the development of three theory-based propositions that can help shape future research. The research propositions in this paper should be tested, but much more future research, particularly longitudinal research, is needed. Finding empirical support for these propositions would help scholars better understand a key driving force behind growth in women-owned businesses. This information can help to guide future policy-making and pedagogy that can further enhance our understanding of female entrepreneurship processes. Our hope is that this paper helps spur new lines of research and knowledge that lead to further theoretical development and ultimately better entrepreneurial outcomes for women-owned businesses.

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