Effect of Social Network Ties in Entrepreneurial Opportunity Recognition & moderation
effect of SE

Abstract
Extant literature on network ties in the context of people with disabilities is scant. We believe that the contextual factors for people with disabilities vary significantly possibly due socially constructed stereotypes. This paper primarily explores the role of social networks in entrepreneurial opportunity recognition by people with disabilities. Researchers have examined umpteen plausible reasons that seem to affect entrepreneurial activities, in general, and alertness to entrepreneurial opportunities, in particular, by people with disabilities. ‘Social network ties’ are classified as mentors, informal networks, professional forums, and family & friends and their effect on entrepreneurial opportunity recognition. We used ‘mood inducement approach’ to trigger ‘entrepreneurial ideas’ in respondents through 30 different entrepreneurship related images. Data was collected through an online survey on 19 disability related public forums. The present study found a support for the relationship between informal networks and mentors with opportunity. Interestingly, data reveal counter intuitive insights for family & friends, and professional forums. However, the data supported moderation effect of self-efficacy of PwDs on relationship of mentors, informal networks, professional forums, and family & friends with opportunity recognition. Therefore, the results of moderation effect of self-efficacy are more pronounced in opportunity recognition that has high self-efficacy, than in opportunity recognition with low self-efficacy. The study offers considerable implications for policy makers, academia, and also for PwDs. Finally it concludes with limitations of current study and future directions.

Key words: Social networks, opportunity recognition, self-efficacy and PwD.

BACKGROUND-THE CONTEXT
The World report on disability in 2013, by the World Health Organization and the World Bank, revealed that more than a billion people in the entire world experience some sort of disability. It affects hundreds of millions of families in developing countries. India alone has the huge population of people with disability (hereafter, PwD) and according to the latest census (2011) reached to 26.8 million. It is any nation’s largest minority and ranks as the largest public health problem, which affects not only PwDs and their immediate families, but also society at large, thus grabbed the attention of disability activists and policy makers. Thus, in quest of inclusive growth, the government, disability activists and policy makers focus is shifted towards diversity and inclusion of vulnerable people in the mainstream (Ianchovichina and Lundström, 2009). They collectively worked towards feasible inclusive growth strategies for decent work/job, vocational training and education (Abidi, 1995; Bhambhani, 2004; Davala, Jhabvala, Standing, and Mehta, 2015; Mair and Marti, 2009; Shenoy, 2011). Despite every effort, the employment rate in India fell from 43% in 1991 to 38% in 2001 and 34% in 2011 (Shenoy, 2011). Although Reskin (2002) suggested that employment provide independence, it also brings issues related to workplace discrimination and accessibility. They are sometimes also treated as a contingent worker and extra cost to the company (Shapiro, 2003). The government and policy makers have also introduced various schemes for the entrepreneurial activities enhancement.

1http://whqlibdoc.who.int/publications/2011/9789240685215_eng.pdf?ua=1
support as inclusive growth strategy for PwDs (Taylor, 1996). Entrepreneurship/ self-employment provide a sense of freedom to buy their own assistive technologies and to make place accessible, it give a scope to convert passion/ hobbies into an entrepreneurial venture and overcome humiliation and discrimination (Shaprio, 2003). Despite various advantages of being an entrepreneur, ironically, PwDs are less likely to explore entrepreneurial opportunities. Researchers have examined a number of plausible reasons that appears to affect entrepreneurial opportunity recognition in individuals (Ardichvili, Cardozo, and Ray, 2003; Kontinen and Ojala, 2011). One greatly studied reason that affect is the need of social networks for the relevant information (Kontinen and Ojala, 2011; Ozgen and Baron, 2007). Prior research related to social network and entrepreneurial opportunity has been widely studied on non-disabled individuals. A very limited literature on PwDs suggests that they often encounter some barriers while building social networks (Langford, Lengnick-Hall, and Kulkarni, 2013). Similarly the presence of socially constructed stereotypes also affect the individual’s contextual factors (personal and environmental) (Fiske, Cuddy, Glick, and Xu, 2002). These contextual factors of PwDs might affect the ability to recognize entrepreneurial opportunity with the help of social networks.

In this paper we attempt to study the effect of social network and entrepreneurial opportunity recognition in the context of in PwDs as the research on the said context is scant. We build upon the exiting social network theory of strong ties and weak ties; and try to find out whether the effects of social networks as a source of information is in the alignment of the previous literature or counter-intuitive. We also believe that the self efficacy (hereafter, SE) of PwDs affect opportunity recognition ability in a given set of relations they have.

Thus, in this paper, we aim to address following research questions:

1) How do social network of PwDs affect entrepreneurial opportunity recognition?
2) Does SE moderate the relationship between network ties and entrepreneurial opportunity recognition?

Following prior research (Baron and Ensley, 2006; Baron, 2006), in the current paper, entrepreneurial opportunity recognition is defined as a process through which ideas for new business ventures are identified. Singh, Hills, Hybels, and Lumpkin (1999) suggest that opportunity recognition is a function of boundaries of rationality (Simon, 1972). No individual has perfect information thus they experience ‘bounded rationality’ i.e. limited ability to keep and process information. When individuals expand their social network their boundaries expand too, it offers access to more knowledge and information and in turn exposes more potential venture opportunities. We build on the literature and the pioneering works on the social network theory which posits that a social network consists of ‘nodes’ (individuals within the group) and ‘ties’ relationship between the individuals). These nodes and ties acts as sources of information (Ozgen and Baron, 2007; Greve and Salaff, 2003) (as they are embedded in individual’s network of relationship with others) become critical for opportunity recognition (Arenius and De Clercq, 2005). Self-efficacy is defined as “people’s judgement about their capabilities to organise and execute courses of actions required attaining designated type of performance” (Bandura, 1986). Disability is defined as the extent of impairment of body structure and its function which substantially limits life activities (Kulkarni, 2012). To maintain the scope of our study we referred PwDs as people with ‘locomotive disability’.

The rest of the paper is organized as follows: We first introduce the concept and develop hypotheses based on the relevant literature. The subsequent section covers methodology, sample, and data collection. Further it deals data analysis and analysis. Final section presents discussion, implications and limitations of the study.

CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT
A largely distinct literature social network literature emphasizes on the importance of the individual’s involvement and embeddedness in networks of relationships for exposure to varied information (Granovetter, 1973). Extant literature suggests that network ties increases the plausibility of getting diverse information regarding advice and support (Birley, 1986), complementary assets (Greve, 1995), and know-how (Brown and Butler, 1995). In terms of entrepreneurial behaviour, prior empirical literature indicates that the larger the social network, the larger the opportunity recognition among entrepreneurs. Such networks may act as an important source of venture ideas and provide plethora of information that an individual currently does not possess (Granovetter, 1973).

Wasserman and Galaskiewicz (1994) suggest that the main objective of research on social networks is to explicate the interdependence and placement of various ‘actors and nodes. In the case of entrepreneurship, network analysis presents an opportunity to understand the role of various network actors in recognizing business opportunities.

An individual’s social network that share common affiliation and participate in common activities regularly are often trustworthy, and reciprocal in relationships i.e. homophiles (Granovetter, 1983; Ibarra, 1993, Marsden, 1988). Researches in disability study suggest that disabled individuals feel labelled, stigmatized and rejected from others. Thus probably disabled individuals often seek relationships other persons who share similar identities and images (Langford et al., 2013). Such interactions also increases the likelihood of having social bonds with similar others in various professional meetings, vocational training/ entrepreneurship development programs. The relationships are explained in terms of their strength and quality which individuals share with others and are considered as the strength of ties in the network (Granovetter, 1973). These ties are primarily of two types- strong and weak- wherein, individuals’ actions are governed by the diversity, homogeneity and heterogeneity of these ties. Thus the presence of both strong ties and weak ties are essential in the network as they provide individuals an access to opportunities, information and also enable them to grab resources.

Recent developments in networking literature are related to online social networks. It goes beyond traditional boundaries and uses internet or World Wide Web to form social networks. Online social network acts as a weak tie and sometimes provide relevant information/ ideas for business opportunities. Quan-Haase and Wellman (2004) present three main arguments after reviewing internet and the literature on internet’s impact on social capital. The first argument suggests that internet transforms social capital as it gives individuals a platform to find other individuals who share similar interests, which sometimes is detrimental to the offline communities/ friends. Second, the use of internet decreases social capital as individuals find internet more entertaining and engaging, thus it disengages people from their offline social network i.e., family and friends. Third, the use of internet supplements social capital, when individuals communicate through both offline (i.e., face to face) as well as online (i.e., virtual) modes to build and maintain a pattern of engagement and socialization with their social networks.

In this paper, we followed Ozgen and Baron (2007) classification of social networks who acts as important source of information for latent/ potential entrepreneurs with disabilities. These are informal networks, participation in professional forums, mentors and close friends and family members. Literature consider mentor and close friends and family in strong tie network, and informal/ formal networks and professional forums as weak tie network. We now turn to the potential social networks that are sources of information for PwDs.

1. **Family and close friends as a source of information for entrepreneurial opportunity recognition**
Family and close friends are in the strong tie network of an individual which provides emotional (i.e. concern and understanding) and financial support (at different phases) (Ozgen and Baron, 2007). Building upon Granovetter (1973) ‘the strength of weak tie’, such network lacks specific information. They usually do not possess skills and experiences; and thus family and close friends will be less helpful to recognize entrepreneurial opportunity. The information shared by family and close friends is homogenous (Barney and Lawrence, 1989; Granovetter 1973, 1985; Ruef, Aldrich, and Carter, 2003), brings redundant information (Bian, 1997; Ruef, 2002), have local cohesion and is then considered to be less effective (Marin, 2012; Moody, 2002) although the family and friend ties provide trust (Aldrich, Elam, and Reese, 1997; Aidis, Estrin, and Mickiewicz, 2008; Dubini and Aldrich, 1991; Hoang and Antoncic, 2003; Johannisson, 1986; Malewicki, 2005), closeness (Aldrich and Martinez, 2001; Campbell, Marsden, and Hurlbert, 1986; Ibarra, Kilduff, and Tsai, 2005; Marsden, 1988; Perry-Smith and Shalley, 2003; Ren, Shu, Bao, and Chen, 2014) and commitment (Johannisson, 1986; Li, Wang, Huang, and Bai, 2013; Malewicki, 2005; Walker, 1997). Recent literature on disability and career development suggests that family and close friends of PwDs want them to become financially independent and help in exploring ways for the same (Kulkarni, 2012). The family provides every possible support; however, they sometimes lack industry specific information which could possibly help in recognition of opportunities. Thus we would expect that in case of PwDs networks with strong ties are more effective in terms of other supports but ineffective in terms of business related information source and opportunity recognition. Thus dependent on these logics, we develop the following hypothesis:

**H1: Reliance on family and close friends negatively supports PwDs to recognize opportunities for new entrepreneurial ventures.**

2. **Informal networks as a source of information for entrepreneurial opportunity recognition**

Another source of information for an entrepreneurial opportunity is the informal network of PwDs. Extant literature suggests that nascent entrepreneurs can get relevant and valuable information from sources they often meet prior to starting a new entrepreneurial venture for instance, interaction with customers, bankers, investors etc during early work experience (Aldrich and Zimmer, 1986). Informal networks are reciprocal in nature, interdependent and reinforce mutually (Shane, 2003; Smith and Lohrke, 2008; Aldrich & Zimmer, 1986). They are often non-organized and do not operate in a vacuum (Birley, 1986). Thus the nascent entrepreneur’s informal networks are not overlapping and scattered. Substantial valuable information can be collected, which in turn helps in recognizing a viable business opportunity (Lorenz, 1991; Ozgen and Baron, 2007; Singh et al. 1999).

Disabled individuals often find similar others to build social support (Frable, Platt, and Hoey, 1998). Recent research on disability and networking suggests that PwDs feel more comfortable discussing with persons with whom they do not have any overlapping relationships i.e., usually weak tie networks do not have any intimate relationships and this in turn helps them to overcome stereotypes (Kulkarni, 2012; Langford et al., 2013; Wright, 2012). For instance, acquaintance over social networking sites (Facebook, Twitter etc.). This also helps in ‘connecting the dots’ i.e., relationships between direct contacts and third party (Burt, 1992; Baron, 2006). Therefore, we would expect that PwDs who possess strong informal network (Mersland, 2005; Ellison, Steinfeld, and Lampe, 2007) can positively add new and varied information which then lead to discovery of new opportunities.

**H2: Interactions with informal networks positively supports PwDs to recognize opportunities for new entrepreneurial ventures.**
3. Mentors: a source of information for entrepreneurial opportunity recognition

The word ‘mentor’ is associated with advisor, coach, role model, peer support. In general, a mentor-protégé relationship needs involvement, commitment and time (at personal and professional levels) (Jack, Dodd, and Anderson, 2004; Whelley, Radtke, Burgstahler, and Christ, 2003). In entrepreneurship, mentors play a crucial role to grab entrepreneurial opportunity for novice entrepreneurs (young and inexperienced). Carsrud, Gaglio, and Olm (1986) classified the mentor-protégé relationship under strong tie network that helps protégés to learn taking calculated risk and also extend support in learning new skills and knowledge (Clutterbuck and Ragins, 2002; Hunt and Michael, 1983). In terms of recognition of entrepreneurial opportunity, mentors’ prior knowledge may support, help and guide and acts as role model (Bosma, Hessels, Schutjens, Van Praag, and Verheul, 2012; Higgins and Kram, 2001) for novice entrepreneurs to stay alert for the information for creations of new business opportunity (Davidsson and Honig, 2003; Jack, Dodd, and Anderson, 2004; Ozgen and Baron, 2007). Very little has been documented and researched on mentorship of PwDs (Stumbo et al. 2010). Whelley et al. (2003) argues that PwDs often seek support and collaboration with their mentors who share similar interests and thus succeed naturally. Thus we also believe that mentors help protégé (here PwDs) by providing relevant information about the industry/field to recognize and seize an entrepreneurial opportunity.

**H3: Availability of mentors (role models or advisor) positively supports PwDs to recognize opportunities for new entrepreneurial ventures.**

4. Professional forums as a source of information for entrepreneurial opportunity recognition

Ozgen and Baron (2007) explain the importance of the professional forums to recognize entrepreneurial opportunity. Professional forums like conferences, seminars, and workshops help entrepreneurs to grab information about the current developments in their fields (Hoang and Antoncic, 2003; Ikoja-Odongo and Ocholla, 2004; Ozgen and Sanderson, 2006). Also with the advent of technology, internet and social media play a crucial role in collecting the relevant information (Chen, 2006). Recent research in disability domain has acknowledged the positive role of social media, information and communication technologies in the lives of PwDs (Armstrong and Hagel, 1996). For instance, Dobransky and Hargittai (2006) mention the advantages of social media, information and communication technologies for vulnerable sectors of the society (such as, PwDs). They posit that internet use enables PwDs to escape from the isolation and stereotypes that accompany their disabilities and in turn, gives a sense of independence and self-determination (Quan-Haase and Wellman, 2004). They can chat online, write blogs, participate in discussions on common forums, and socialize freely (Ellison et al., 2007; Wright, 2012). They are often not interested in their own identity disclosure, (Bowker and Tuffin, 2002) thus online medium provides a ‘levelling ground’ where they are treated on their merits as a person, not as a disabled person (Dobransky and Hargittai, 2006). Therefore, we would expect that PwDs who participate in conferences, seminars, workshops, online discussion forums etc. can have new and varied information which then lead to discovery of new opportunities.

**H4: Association with professional forums (conferences, online discussion forums, workshops etc.) positively supports PwDs to recognize opportunities for new entrepreneurial ventures.**

**Potential moderator: Self-efficacy of PwDs**

The above section studies the effect of network tie dimensions on entrepreneurial opportunity recognition by PwDs. However, certainly, some factors can amplify or diminish the
effect. In this study, the potential moderator is ‘SE of individuals with disability’. The PwDs’ SE is the beliefs about abilities and capabilities of a disabled person to overcome hurdles of being disabled (Amtmann et al., 2012). As SE is believed to govern the aspirations, increases the level of motivation, and provides support to overcome impediments (Bandura, 1997). According to Wiesenfeld, Swann, Brockner, and Bartel (2007) SE acts as a source of rationality, helps organizing experiences and thus predict future course of behaviour. In short, SE plays a very crucial role in determining individual’s choice as it helps in assessing their abilities and capabilities required for varied occupations (Branch and Lichtenberg, 1987; Hackett and Betz, 1997). It affects individual’s alternatives, efforts, determination and ambitions when they encounter setbacks (Bandura, 1993). Boyd and Vozikis (1994) emphasize the importance of self-efficacy while opting for entrepreneurship as a career choice. Markman, Baron, and Balkin (2005) also supports Boyd et al. argument and suggest that SE is a strongly affect entrepreneurial pursuits.

Gist and Mitchell (1992) mentions that the SE judgements i.e. understanding one’s capabilities require analysis of large number of signals. They classified these signals as external and internal. In terms of the capability of task performance external signal indirectly affect SE as it comes from the degree of interdependences, the complexity, the amount of resources, physical settings (weather condition), geographic settings and distractions required finishing the task successfully. They also mention about the act of watching or observing other individuals abilities and verbal persuasion (feedback about abilities) can influence SE. Internal signals/ cues include personal or vicarious experiences while performing a particular task. For instance, sometime individuals are excited/ enthusiastic or fearful/ anxious when they confront a particular task.

SE is widely studied construct in entrepreneurship field and specially in the literature of ‘entrepreneurial intentions’ (Boyd and Vozikis, 1994; N. F. Krueger, 1993; Krueger, Reilly, and Carsrud, 2000; Zhao et al. 2005), however, less explored in the domain of entrepreneurial opportunity recognition (Ardichvili et al., 2003, Gibbs, 2009; Ozgen and Baron, 2007; Tumasjan and Braun, 2012). Ardichvili et al. (2003) argues that SE and entrepreneurial optimism affects the entrepreneurial opportunity recognition. Hmieleski and Corbett (2008) explored found a positive moderation of entrepreneurial SE between improvisational behaviour and new venture performance. Similarly, in a recent study Tumasjan and Braun (2012) studied the moderating effect of creative SE and entrepreneurial SE between innovativeness of opportunities identified and promotion focus. And found that the relationship between innovativeness of opportunities identified and promotion focus is positively moderated by creative SE and entrepreneurial SE. Thus, although limited, the extant literature highlights the importance of SE in relation to entrepreneurial core activities and skills like opportunity recognizing, risk and uncertainty management, and innovation.

Our work considers the moderating effect of PwDs SE social network on the opportunity recognition. Individual’s behaviour, and actions are governed by various vicarious experiences, verbal persuasion and emotional arousal (Bandura, 1977, 1986), thus it might affect individuals’ relationships. For instance individuals’ dependency and relationships with their strong ties and weak ties for varied information. Such individuals are more likely to recognize entrepreneurial opportunities (Ozgen and Baron, 2007; Boyd and Vozikis, 1994; Zhao, Seibert, and Hills, 2005). Sequeira, Mueller, and Mcgee (2007) considered parent, spouse, sibling and close friend in strong ties and studied the effect of relationships on individual’s entrepreneurial intentions. Likewise the effect SE with role model, mentor has also been also considered in the literature (Sequeira et al., 2007; BarNir, Watson, and Hutchins, 2011). Similarly, studies have also shown that weak ties are effective for the information search (Sequeira et al., 2007; BarNir et al., 2011; Chrisman, Sharma,
The literature is scant in developing an understanding about the moderating effect of PwDs SE on family and friends, informal networks, mentors, and professional forums. They keep on exploring ways to avoid internalization of ableism. Efficacious PwDs are likely to extend their own behaviour approach tasks with strong self-confidence, and tend to seek network support in all possible ways. Thus higher SE leads to overcome obstacles and stereotypes and believe that they can convert the recognised opportunity which they discovered. However, based on the limited literature, we present following hypotheses:

**H5(a):** PwDSE positively moderates the relationship between family and friends and opportunity recognition, such that the relationship exhibit more negative results when PwDSE is high as compared to low SE

**H5(b):** PwDSE positively moderates the relationship between informal networks and opportunity recognition, such that the relationship exhibit more positive results when PwDSE is high as compared to low SE

**H5(c):** PwDSE positively moderate the relationship between mentors and opportunity recognition, such that the relationship exhibit more positive results when PwDSE is high as compared to low SE

**H5(d):** PwDSE positively moderate the relationship between professional forums support and opportunity recognition, such that the relationship exhibit more positive results when PwDSE is high as compared to low SE.

-------------------------------

**METHODOLOGY ADOPTED**

In designing research instruments we followed the procedure of conducting research as suggested by Hair, Tatham, Anderson, and Black (2006). The constructs understudy were conceptualized as a reflective multi-item constructs (Hair, Hult, Ringle, and Sarstedt, 2013). All the constructs were measured using multiple items on 5-point Likert scale with “Strongly Disagree” to “Strongly Agree” as levels to capture the variables and indicator items. The five point Likert scale offers moderate granularity as it usually has exhaustive and mutually exclusive categories. It also offers meaningful, valid and reliable statistical results. The moderate granularity reduces triviality in categories (Pearse, 2011).

**Pilot Study**

Before finalizing the scales (instrument for measurement) for final data collection, we conducted two pilot studies to observe and analyse a primary measurement model i.e., reliability and validity of the adopted instruments (Van Teijlingen and Hundley, 2002). The pilot study was conducted at the National Youth Convention for People with Disabilities in New Delhi in February, 2015. 81 youth with disabilities participated in the survey. We used Singh et al. (1999) scale to capture opportunity recognition, Ozgen and Baron (2007) scale for network ties, and Amtmann et al. (2012) scale (people with disability self-efficacy) to capture self-efficacy of disabled individuals. The pilot test revealed that the reliability of scales qualify for the threshold level. Hence, we used the instrument in our main study to capture the responses.

**Main Study**

**Sampling and Data collection:**

An online survey questionnaire using established scales was drafted on www.qualtrics.com in English language on a 5 point Likert response format. Purposive sampling technique was adopted to collect data (Teddlie and Yu, 2007). We administered the online survey based on the tailored design method suggested by Dillman (2000). We contacted latent
entrepreneurs (Verheul, Thurik, Grilo, and van der Zwan, 2012) with disabilities from nineteen public forums/groups at social networking websites dedicated to PwDs. In June 2015, we sent personalized emails to 1778 individuals with disabilities. To increase the rate of response, a follow up reminder email was sent after four weeks. After eight weeks of data collection we received a total of 209 responses. The response rate of 11.7% was consistent with the rate of response in researches using internet based online surveys (Crawford, Couper, and Lamias, 2001; Sheehan, 2001). Demographic profile of the respondents is mentioned in table 1.

Non Response Bias
Non-response bias arises when expected respondents do not respond. Non-response leads to variation between the mean values of the original list of respondents for response and actual received responses (Armstrong and Overton, 1977). To address non-response bias we adopted wave analysis technique suggested by Rogelberg and Stanton (2007). The data was divided into two groups (early responses and late responses) and an independent-samples t-test was conducted. We found no significant difference between groups (early responses and late responses) (p>0.05). Thus non-response bias is absent in the data set.

Common Method Bias
Common method bias occurs when data is self-reported i.e. it has been collected from a single respondent and results in common method bias. We have also tested for the common method bias (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003; Siponen and Vance, 2010). There are two ways to reduce common method bias viz., ex ante (before data collection) and ex post (after data collection).

In ex-ante approach, firstly, we a priori mentioned the objectives of the study so that they could fill the responses appropriately (after thorough understanding); secondly, we randomized the items in the instruments i.e. we mixed the order of the items to reduce likelihood of the bias as respondents usually are not able to predict the construct patterns, and finally we introduced four collages of thirty images that acted as a mood inducing event which affected respondents’ perception towards themselves and their surroundings (Appendix 1) (Chang, Van Witteloostuijn, and Eden, 2010; Podsakoff et al 2003).

In ex post analysis, we analysed the construct correlation matrix and found that no construct is correlating extremely highly (i.e., more than 0.90) (Pavlou, Liang, and Xue, 2007; Siponen and Vance, 2010). We then conducted Harman’s one factor test, the most widely used method that addresses the issue of common method bias. Using unrotated principal component analysis, all the variables were loaded into an exploratory factor analysis with unrotated factor solution. The % of variance was 24.769, which was less than the threshold value of 50 %.

Operationalisation and Measures (Appendix 1: Part 2)
In designing research instruments we followed the procedure of conducting research as suggested by (Hair, Tatham, Anderson, and Black, 2006). The constructs understudy was conceptualized as a reflective multi-item constructs (Hair, Hult, Ringle, and Sarstedt, 2013). All the constructs were measured using multiple items on 5-point Likert scale (with “Strongly Disagree” to “Strongly Agree) to capture variables and indicator items. The scales have been adopted from various studies and contain twenty eight items to operationalise six construct level variables. The constructs in the study are operationalised as:
1. Dependent Variable: Opportunity Recognition
It was assessed by six items adapted from (Singh et al., 1999). These items accessed the, alertness and sensitivity of PwDs towards entrepreneurial opportunity recognition. Two sample items are ‘I frequently identify opportunities to start-up new businesses (even though I may not pursue them)’ and ‘I can recognize new venture opportunities in industries where I have no personal experience’.

2. Modifying Variable: PwD SE
   Consistent with earlier studies we consider SE as a modifying variable that could affect the relationship between independent and dependent variables. This was measured by a six-item self-assessment scale developed by (Amtmann et al., 2012; Schwarzer and Jerusalem, 1995).

3. Independent Variables: Reliance on Mentors, Professional Forums, Informal Networks, and Close Friends and Family
   (i) Reliance on mentors: We used an adapted scale developed by Ozgen and Baron (2007) to capture reliance on mentors for business related information.
   (ii) Professional Forums: To capture responses on the usage of professional forums as a source of information we relied on the scale developed by Ozgen and Baron (2007). It included items related to entrepreneurial opportunity recognition through seminars, workshops, consortium or conferences.
   (iii) Informal Network: We adopted the scale by Ozgen and Baron (2007). It focused on the items wherein respondents relied upon their contacts at workplace and academic institutions.
   (iv) Close Friends and Family: This construct is also measured by Ozgen and Baron’s scale. It measured the reliance on close friends and family members for the relevant business related information.

   We also wanted respondents to think about a couple of business ideas before taking up the questionnaire. The intention was to strike on the idea generative abilities of the respondents (Singh et al., 1999). Thus we kept thirty images (in four collages/jumbled form) at the beginning of the questionnaire. These images were based on our early discussions with entrepreneurs with disabilities. Respondents with disabilities were requested to come up with as many different business ideas as possible after seeing the images (Appendix 1).

Analytic Method:
   The research model understudy was tested using partial least squares-structural equation modelling that allows path modelling using latent variables (Hair, Hult, Ringle, and Sarstedt, 2013; Lohmöller, 1989). PLS is an appropriate statistical tool for theory exploration. It supports researches where (1) path models are complex and comprise many constructs (usually more than five), (2) data samples are small and, (3) data fails to follow multivariate normal distribution (i.e. the assumption of normalcy of data). Furthermore PLS SEM is useful as it reduces the residual variance, and maximizes the explained variance of the dependent variables (DVs) by the independent variables (IVs) (Chin, 1998; Fornell and Bookstein, 1982).

   To estimate our theoretical model we used smartPLS 3 software (Ringle, Wende, and Becker, 2014). PLS involves two steps for model interpretation. Step 1: measurement theory to measure and assess the construct reliability and validity, and Step 2 involves structural theory: assessment of the structural model (Frey, Lüthje, and Haag, 2011).

Results and analyses
   Step 1: Measurement Theory (Evaluation of Measurement Model)
   The results of the model estimate are based on rules of thumb to measure the reflective measured constructs as suggested by (Hair et al., 2013).
The step one starts with examining indicator (item) loadings. Loading i.e. reliability of above 0.70 indicates that the construct describes over 50% of the indicator’s (item’s) variance. In our model, we measured the reliability of each item (indicator) with the standardized outer loading (Henseler, Ringle, and Sinkovics, 2009).

Further, step involves the assessment of constructs internal consistency reliability. In PLS SEM internal consistency reliability is not measured by traditional criterion i.e. Cronbach’s alpha. Cronbach’s alpha assumes that all the indicators have same outer loadings on the construct i.e. all the indicators are reliable equally (Hair Jr et al., 2013). Thus in PLS the more appropriate measure of reliability is composite reliability (CR) as it does not assume that each item of a latent variable contributes equally (Fornell and Larcker, 1981). Table 2 presents composite reliability value of each construct. In our study, composite reliability of all the constructs is above threshold level (0.7) indicates sufficient reliability (Nunnally and Bernstein, 1994). We measured the reliability of each item (indicator) with the standardized outer loading (Henseler et al., 2009) (see table 3).

Next we measured the convergent validity of each construct. Hair et al. (2013) define convergent validity as “the extent to which an indicator correlates positively with alternative indicators of the same construct”. It is accessed by average variance extracted (AVE). Hair et al. (2013) define AVE as “grand mean value of the squared loadings of the indicators associated with the construct”. The AVE threshold value should be more than 0.5 for the constructs (less than 0.5 AVE value means that the error term of a construct is more than the variance explained) (see Table 2). In our study the AVE for every construct is above 0.5.

Structural Model Testing

We tested one integrated model as depicted in figure 1. The analysis includes testing of relationship between dependent (opportunity recognition) and independent variables (sources of information: mentors, informal networks, professional forums, and family and close friends). It also created a two-way interaction terms between individual’s social networks and opportunity recognition by multiplying the standard indicator values of social networks and SE.

Evaluation of quality criteria
To calculate the quality of structural model, we first evaluated predictive validity using the Stone-Geisser-Criterion ($Q^2$). $Q^2$ is measured through the blindfolding with an omission distance of 7 (7 cases) and the value was 0.214 (above threshold value) (Geisser, 1974; Stone, 1974; Tenenhaus, Vinzi, Chatelin, and Lauro, 2005). Next we analysed VIF value as it suggests collinearity statistic of the model. All the values are below the threshold value must be below the value of 5 (Götz, Liehr-Gobbers, and Krafft, 2010). Then the model fit is judged by analysis $R^2$ through running PLS algorithm and t and p values of the path coefficients were generated through the bootstrapping with 5000 iterations. The $R^2$ of the model is 0.42. Table 5 summarizes the results of direct relationship.

- H1 suggested that the greater the reliance/dependency on family and close friends, PwDs are less likely to recognize opportunities for new ventures. This hypothesis is positive and insignificant ($\beta=0.143$ and $p>0.05$). Thus it is not supported.
- H2 argued that an informal network of PwDs is positively associated with entrepreneurial opportunity recognition; they are more likely to recognize opportunities for new entrepreneurial ventures. This hypothesis is positive and significant ($\beta=0.208$ and $p<0.01$). This hypothesis is supported.
- H3 predicted a positive relationship between the availability of mentors (role models or advisors) and the entrepreneurial opportunity recognition, and is supported. The results are positive and significant ($\beta=0.169$ and $p<0.05$).
- H4 argued about effect of the associations with professional forums (conferences, online discussion forums, workshops etc.) on entrepreneurial opportunity recognition. The results are negative and non-significant ($\beta=-0.255$ and $p>0.1$). Thus this hypothesis is not supported.

**Moderation analysis**

Moderation effect arises when the strength and/or direction of two variables i.e., independent and dependent variables, is affected by a third variable (Baron and Kenny, 1986). In PLS SEM, where data does not rely on distributional assumptions, moderation effect is captured by multi group analysis suggested by Henseler (2007). We used the ‘median split’ approach (Bissonnette, Ickes, Bernstein, and Knowles, 1990; Aiken and West, 1991), thus we assess the moderation effect using the subsample method in PLS (Sarstedt, Henseler, and Ringle, 2011). We divided our data for moderating variable i.e., ‘self-efficacy’, into two categories viz., High self-efficacy and Low self-efficacy. It resulted in 116 respondents with high self-efficacy and 93 with low self-efficacy. We performed Henseler’s Test (Henseler, 2007) to analyse the path coefficients of groups. The test measures the absolute difference between the coefficients and then checks their significance level. In our study all cases were found significant (Table 6).

- H5 (a) proposed that PwDs’ self-efficacy positively moderates the relationship between family and friends and opportunity recognition, such that the relationship exhibits more negative results when PwDs’ self-efficacy is high as compared to low self-efficacy. Result suggests that self-efficacy significantly moderates the relationship between family and close friends and opportunity recognition ($|\Delta|= 0.054$, p-value=0.039) thus supporting H5 (a).
H5 (b) elucidated that PwD self-efficacy moderates the relationship between informal networks and opportunity recognition. The interaction is statistically significant such that the relationship exhibits more positive results when PwDs’ self-efficacy is high as compared to low self-efficacy (|Δ|= 0.086, p-value=0.043), thus supporting H5 (b).

H5 (c) suggested that PwD self-efficacy moderates the relationship between mentors and opportunity recognition and is significant such that the relationship exhibits more positive results when PwDs’ self-efficacy is high as compared to low self-efficacy (|Δ|= 0.081, p-value =0.029), thus supporting H5 (c).

H5 (d) also suggested that PwD self-efficacy moderates the relationship between professional forums and opportunity recognition such that the relationship exhibits more positive results when PwDs’ self-efficacy is high as compared to low self-efficacy (|Δ|= 0.076, p-value=0.39), thus supporting H5 (d).

DISCUSSION AND CONCLUSION

This paper tries to understand PwDs in terms the effect of their social network on entrepreneurial opportunity recognition. The analysis resonates with previous empirical findings in case of informal networks and mentors (Ozgen and Baron, 2007; Arenius and De Clercq, 2005; Corbett, 2007; Tang, Kacmar, and Busenitz, 2012). However offers counter-intuitive insights in case of family & friends and professional forums.

Our research offers counter intuitive insights in the case of family & friends, professional forums and agreeableness. We explored recent works by Kulkarni (2012) and Langford et al. (2013) on people with disability in organizational settings which suggested that employment choices and career related decisions of disabled individuals is affected by their family & friends (Gee and Jones, 2012; Malhotra and Singh, 2014). Our study substantiates this stream of literature and suggests that people with disability rely on family and close friends. It counters previous studies which emphasises that due to less or no industry knowledge, family and close friends are not good sources of business opportunity (Ellis, 2011; Ozgen and Baron, 2007). The plausible reason for the support in our study could be PwDs fear of the unknown and fear of the failure (Wagner and Sternberg, 2004; Wennberg, Pathak, and Autio, 2013). Also, their family and friends support in collecting relevant information so that they can explore more opportunities and avenues that could possibly make them self-reliant and independent (Kulkarni, 2012; Langford et al., 2013).

Our study found that informal networks directly affect new opportunity recognition and this is in support of previous literature (Kaish and Gilad, 1991; Lorenz, 1991; Ozgen and Baron, 2007; Singh et al. 1999). Usually the relationships shared with informal networks are not overlapping and scattered (often web based: like over the Facebook or Twitter/ potential consumers etc.), thus PwDs feel comfortable sharing and discussing career related options as they trust casual acquaintances to get the benefit of having more exposure (Mersland, 2005; Ellison, Steinfield, and Lampe, 2007).

A large body of literature suggest the importance of mentors in recognizing entrepreneurial opportunities (Carsrud et al., 1986; Haynie, Shepherd, and McMullen, 2009; Rigg and O’Dwyer, 2012). In the Indian context mentors can be teachers, gurus and guides who share relevant information with the protégé and help them in many other ways based on their own varied and rich experiences (Bosma et al., 2012; Echtner, 1995; Trivedi, 2014; Higgins and Kram, 2001; Mishra and Jain, 2014). Our study indicates that people with disability rely and exhibit trust on mentors as mentors support and guide them in deciding upon career choices in general and entrepreneurship in particular (Jack, Dodd, and Anderson, 2004; Ozgen and Baron,
Further, we were expecting that participation in various conferences, workshops and seminars increases the likelihood of opportunity recognition (Hoang and Antoncic, 2003; Ikoja-Odongo and Ocholla, 2004; Ozgen and Sanderson, 2006). However, our finding on the effect of professional forums, in the context of PwDs, is not consistent with previous findings (Ojewale, Ilori, Oyebisi, and Akinwumi, 2001; Ozgen and Baron, 2007). One possible reason could be the lack of accessibility and support for attending meetings, conferences, workshops or seminars (Kaye, 2000). Secondly, participating in online workshops is technology dependent which is not necessarily available to every individual with disability (Borodin, Bigham, Dausch, and Ramakrishnan, 2010; Petrie and Kheir, 2007).

**RESEARCH CONTRIBUTION: IMPLICATIONS**

**Theoretical Contribution**

Building upon social network theory, extant literature presents the importance of networks (strong and weak) for nascent entrepreneurs in various entrepreneurial activities in general and opportunity recognition in particular. To our knowledge, very few studies focused on latent/potential entrepreneurs and no study focused on PwDs as potential entrepreneurs. So far, studies in the context of PwDs and networks have explored career advancement in the domain of job search (public or private) with the help of their strong tie and weak tie networks (Kulkarni, 2012; Kulkarni and Kote, 2014; Langford et al., 2013; Wright, 2012). This research has tried to shift the focus on choice of career of a disabled person to the entrepreneurial domain (Doyel, 2002; Pagán, 2009).

This research of exploratory nature targeted novice domain contributes in theory by enhancing the existing stream of literature of networks, and entrepreneurship in minority groups. It bridges the gap in terms of the context and explores the effect of social causes of information on entrepreneurial opportunity recognition by PwDs. The analysis shows that PwDs trust and rely more on their mentors, informal networks and family & close friends for relevant information; and less on professional sources like seminars, conferences, formal meetings. Reliance/dependency on family and friends contradict the extant literature on strong ties and information search and thus it is counter-intuitive. Family and close friends of PwDs are often considerate about the disabled person’s future (Carsrud et al., 1986; Haynie, Shepherd, and McMullen, 2009; Rigg and O’Dwyer, 2012). The obvious choice for them is to have a stable career option. Out of many options, entrepreneurship offers a viable solution. Similarly teachers/mentors in school and colleges also help the disabled student in shaping career. Thus various mentoring, idea generation programs and/or entrepreneurship programs, achievement motivation training can be designed (based on the type of disability) at the school/college level (Kuratko, 2005; Vesper and Gartner, 1997). Informal networks on the other hand, provide a platform to learn about other people in similar situations (disabled state) (Higgins and Kram, 2001; Mishra and Jain, 2014; Trivedi, 2014). Success stories of other people can boost confidence and motivate PwDs to avoid internalization of 'ableism', and in turn, they can follow the same path to become independent (Yzerbyt et al., 1997).

In our study, PwDs do not rely upon professional forums (meetings, seminars, workshops etc.). However, extant literature suggests that individuals get the latest information when they participate in such forums. These forums are often theme based and attract similar and like-minded people to share varied experiences. On a similar note, PwDs can also be encouraged to participate in forums like the ‘Youth Convention on People with Disabilities’ by National Centre...
for Promotion of Employment for Disabled People (NCPEDP) in India or ‘Leadership Training Program for Disabled Individual’ by Disabled People International (DPI), an international body.  

**Implications: Policy Makers and Academia**  
There has been a shift from welfare based approach to right based approach to empowerment based approach in policy making. One of the ways to empower PwDs is to provide an inclusive environment (Cook, 2006; Watson, 2002). The results of our research suggest that PwDs are active in social networks, have openness to experience and are risk takers. They are active in their informal networks, but, lack in information from the professional forums, magazines, workshops.

The policy makers/government should design communication strategies in such a way that the information related to schemes, support programmes etc. reaches PwDs through informal networks. The government can also promote participation in vocational trainings, skill development workshops or seminars (Abidi, 1995).

We believe that entrepreneurs are both born and made. Disabled people need extra guidance and support due to limited accessibility and infrastructure (Burchardt, 2005; Coleridge, 2005; Filmer, 200; Mitra, Pošarac, and Vick, 2011). They need training and support at each stage of the entrepreneurial process. Thus we believe that our research is also useful for academia and practitioners for the design and development of special course curriculum and training programmes. For instance, specially designed ‘achievement motivation’ training for PwDs could provoke entrepreneurial behaviour and help in igniting the hidden entrepreneurial spark (Fremstad, 2009; Sen, 1999). Both theory and practice suggest that PwDs are often scared of being judged by fellow people thus they prefer to remain in silos, and usually do not share their perspectives and ideas.

**For People with Disabilities**  
The study is important for individuals with disabilities as well. It states strongly that networks play a crucial function in designing/crafting gainful engagement options. Entrepreneurship is one of the promising and viable gainful engagement choices for anyone as it gives freedom, independence and make individual self-reliant (Kulkarni, 2012; Langford et al., 2013). Often reliance on family and friends, and informal networks for relevant information limits the quality and diversity of information needed to explore business ideas. Weak ties are majorly required for information, thus PwDs must take part in professional forums, participate in seminars and workshops. Such active participation not only helps in getting information about various entrepreneurial ideas but also helps them in gaining confidence and self-efficacy (Doyel, 2002; Kulkarni, 2012; Kulkarni and Kote, 2014; Pagán, 2009, 2011).

**LIMITATIONS AND FUTURE DIRECTION**

No research is free from limitations, thus it is important to acknowledge and discuss this. In our study, the first limitation is related to the dependent variable i.e. opportunity recognition. It is emerging from the same source and is self reported. The respondents were not entrepreneurs thus they may fail to reflect an accurate understanding about entrepreneurial opportunities. However, we adapted corrective measures, for instance, we put some images in the questionnaire and asked respondents to see them and then come up with various business ideas. We then counted the total number of ideas and put them in a range suggested in previous research (see Singh et al., 1999). Thus more and advance research is essential to address the problem of self-reporting.

Second, we collected data through online source i.e., it is computer mediated. The respondents were well versed with computers, were regular internet users and understand English language. This data collection medium neglected a larger section that does not use computers.
Hence, additional research is needed to capture responses from people who do not use computers. Vernacular questionnaire can be designed to reach out to the larger group of people.

Third, the sample in our study explored only those individuals who have physical disabilities. We have also not captured the stage of occurrence of disability (i.e. by birth or by accident). Future works can explore other types of disabilities as the results may vary due to the nature, severity of disability and its occurrence (by birth or accident).

Fourth, our research does not offer any counter factual analysis. It does not compare people with disability with any other group. Future research can compare people with disability with other groups and analyse the differences, for instance, PwDs in urban and rural settings, PwDs and those with no disabilities. We expect that there must be some difference to be found in analysing different groups.

Finally, the rate of response in our study was very low. It was consistent with researches that use internet survey based approach (Crawford, Couper, and Lamias, 2001; Sheehan, 2001). However, we adopted PLS SEM, which works on small sample size and non-normal data sets. But we cannot completely ignore the benefits of large sample sizes. Thus future research should capture more and larger responses to mitigate the issue of sample biases.

REFERENCES


Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research, 382–388.


Watson, N. (2002). Well, I know this is going to sound very strange to you, but I don’t see myself as a disabled person: Identity and disability. *Disability & Society, 17*(5), 509–527.


Table 1: Respondents demographic profile

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Category</th>
<th>Portion of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>135 (64.60%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>74 (35.40%)</td>
</tr>
<tr>
<td>Age (in years)</td>
<td>Less than 25</td>
<td>99 (47.3%)</td>
</tr>
<tr>
<td></td>
<td>26-35</td>
<td>89 (42.5%)</td>
</tr>
<tr>
<td></td>
<td>36-45</td>
<td>19 (9.99%)</td>
</tr>
<tr>
<td></td>
<td>46-55</td>
<td>4 (1.91%)</td>
</tr>
<tr>
<td></td>
<td>56 above</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Graduate</td>
<td>123 (58.85%)</td>
</tr>
</tbody>
</table>
Table 2: Construct indicator variables and scale reliability values

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Symbol</th>
<th>CR</th>
<th>Cronbachs Alpha</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FF</td>
<td>0.866</td>
<td>0.759</td>
<td>0.767</td>
</tr>
<tr>
<td>2</td>
<td>IN</td>
<td>0.840</td>
<td>0.729</td>
<td>0.639</td>
</tr>
<tr>
<td>3</td>
<td>MM</td>
<td>0.815</td>
<td>0.747</td>
<td>0.603</td>
</tr>
<tr>
<td>4</td>
<td>PF</td>
<td>0.899</td>
<td>0.896</td>
<td>0.821</td>
</tr>
<tr>
<td>5</td>
<td>OR</td>
<td>0.817</td>
<td>0.765</td>
<td>0.598</td>
</tr>
<tr>
<td>6</td>
<td>SEPh</td>
<td>0.871</td>
<td>0.847</td>
<td>0.578</td>
</tr>
</tbody>
</table>

Table 3: Cross Loading

<table>
<thead>
<tr>
<th></th>
<th>FF</th>
<th>IN</th>
<th>MM</th>
<th>OR</th>
<th>PF</th>
<th>SEPh</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF1</td>
<td>0.757</td>
<td>0.500</td>
<td>0.244</td>
<td>0.039</td>
<td>0.281</td>
<td>0.015</td>
</tr>
<tr>
<td>FF2</td>
<td>0.900</td>
<td>0.609</td>
<td>0.228</td>
<td>0.126</td>
<td>0.437</td>
<td>0.102</td>
</tr>
<tr>
<td>FF3</td>
<td>0.857</td>
<td>0.409</td>
<td>0.142</td>
<td>0.139</td>
<td>0.351</td>
<td>0.151</td>
</tr>
<tr>
<td>IN1</td>
<td>0.534</td>
<td>0.913</td>
<td>0.356</td>
<td>0.177</td>
<td>0.613</td>
<td>0.058</td>
</tr>
<tr>
<td>IN2</td>
<td>0.430</td>
<td>0.724</td>
<td>0.295</td>
<td>0.082</td>
<td>0.457</td>
<td>0.093</td>
</tr>
<tr>
<td>IN3</td>
<td>0.563</td>
<td>0.748</td>
<td>0.237</td>
<td>0.102</td>
<td>0.433</td>
<td>0.057</td>
</tr>
<tr>
<td>M1</td>
<td>0.297</td>
<td>0.501</td>
<td>0.587</td>
<td>0.025</td>
<td>0.417</td>
<td>-0.027</td>
</tr>
<tr>
<td>M2</td>
<td>0.246</td>
<td>0.318</td>
<td>0.751</td>
<td>0.092</td>
<td>0.253</td>
<td>0.053</td>
</tr>
<tr>
<td>M3</td>
<td>0.195</td>
<td>0.307</td>
<td>0.916</td>
<td>0.212</td>
<td>0.194</td>
<td>0.054</td>
</tr>
<tr>
<td>OR1</td>
<td>0.021</td>
<td>0.052</td>
<td>0.092</td>
<td>0.768</td>
<td>0.021</td>
<td>0.075</td>
</tr>
<tr>
<td>OR2</td>
<td>0.037</td>
<td>0.082</td>
<td>0.140</td>
<td>0.804</td>
<td>0.090</td>
<td>0.130</td>
</tr>
<tr>
<td>OR3</td>
<td>0.122</td>
<td>0.045</td>
<td>0.081</td>
<td>0.706</td>
<td>0.063</td>
<td>0.062</td>
</tr>
<tr>
<td>OR4</td>
<td>0.191</td>
<td>0.228</td>
<td>0.199</td>
<td>0.746</td>
<td>0.154</td>
<td>0.120</td>
</tr>
<tr>
<td>OR5</td>
<td>0.036</td>
<td>0.181</td>
<td>0.068</td>
<td>0.712</td>
<td>0.101</td>
<td>0.081</td>
</tr>
<tr>
<td>OR6</td>
<td>0.191</td>
<td>0.228</td>
<td>0.199</td>
<td>0.724</td>
<td>0.092</td>
<td>0.111</td>
</tr>
<tr>
<td>PF1</td>
<td>0.418</td>
<td>0.624</td>
<td>0.317</td>
<td>0.109</td>
<td>0.909</td>
<td>0.090</td>
</tr>
<tr>
<td>PF2</td>
<td>0.384</td>
<td>0.579</td>
<td>0.206</td>
<td>0.112</td>
<td>0.921</td>
<td>0.081</td>
</tr>
<tr>
<td>PF3</td>
<td>0.378</td>
<td>0.543</td>
<td>0.192</td>
<td>0.105</td>
<td>0.900</td>
<td>0.039</td>
</tr>
<tr>
<td>SEPh1</td>
<td>-0.005</td>
<td>0.027</td>
<td>-0.014</td>
<td>0.056</td>
<td>0.040</td>
<td>0.706</td>
</tr>
<tr>
<td>SEPh2</td>
<td>0.024</td>
<td>0.053</td>
<td>-0.048</td>
<td>0.111</td>
<td>0.041</td>
<td>0.788</td>
</tr>
<tr>
<td>SEPh3</td>
<td>0.017</td>
<td>0.014</td>
<td>-0.106</td>
<td>-0.004</td>
<td>-0.022</td>
<td>0.640</td>
</tr>
<tr>
<td>SEPh4</td>
<td>0.041</td>
<td>0.078</td>
<td>-0.039</td>
<td>0.082</td>
<td>0.123</td>
<td>0.770</td>
</tr>
<tr>
<td>SEPh5</td>
<td>0.128</td>
<td>0.106</td>
<td>-0.132</td>
<td>0.094</td>
<td>0.131</td>
<td>0.764</td>
</tr>
<tr>
<td>SEPh6</td>
<td>0.101</td>
<td>0.064</td>
<td>-0.001</td>
<td>0.154</td>
<td>0.052</td>
<td>0.883</td>
</tr>
</tbody>
</table>

Discriminant validity: Mean, Standard Deviation and √AVE. *Bold values are square root of corresponding AVE (AVE = average variance extracted)

<table>
<thead>
<tr>
<th>SNo.</th>
<th>Variables</th>
<th>Mean</th>
<th>St. Dev</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FF</td>
<td>0.676</td>
<td>0.042</td>
<td></td>
<td>0.782</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>IN</td>
<td>0.731</td>
<td>0.044</td>
<td></td>
<td>0.654</td>
<td>0.807</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>MM</td>
<td>0.745</td>
<td>0.039</td>
<td></td>
<td>0.304</td>
<td>0.464</td>
<td>0.815</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5: Summary Results of the PLS Regression (N=209; *p<0.05, **p<0.1)

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path coefficients</th>
<th>t-value</th>
<th>p-value</th>
<th>Hypothesis test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: FF -&gt; OR</td>
<td>0.143</td>
<td>0.936</td>
<td>0.522</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H2: IN -&gt; OR</td>
<td>0.208</td>
<td>4.658</td>
<td>0.003**</td>
<td>Supported</td>
</tr>
<tr>
<td>H3: M -&gt; OR</td>
<td>0.169</td>
<td>2.224</td>
<td>0.027*</td>
<td>Supported</td>
</tr>
<tr>
<td>H4: PF -&gt; OR</td>
<td>-0.255</td>
<td>0.877</td>
<td>0.641</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>

Table 6: Multi group analysis for High and low PwDs self efficacy. (High Self Efficacy=116; Low Self Efficacy =93)

Figure 1: Theoretical model: Self-efficacy acts as a moderator between Network ties and opportunity

Appendix 1: Collage

PART 1: Collage of various images
### PART 2: Multiple Choices (from Strongly Disagree to Strongly Agree)

**How well you handle life/struggles?**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can keep the physical discomfort related to my disability/health conditions from interfering with the things I want to do</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I can keep my disability/health conditions from interfering with my ability to deal with unexpected events</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I can keep my disability/health conditions from interfering with my ability to interact socially</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I can keep my disability/health conditions from being the center of my life</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I can bounce back from frustration, discouragement, or disappointment that my disability/health conditions may cause</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I can figure out effective solutions to issues that come up related to my disability/health conditions</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Do you think you can recognize business opportunities?
<table>
<thead>
<tr>
<th>I can recognize new business opportunities in industries where I have no personal experience</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The new business opportunities I have recognized over the years have been mostly unrelated to each other</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recognizing good opportunities usually requires experience in a specific industry or market place</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>While going about routine day-to-day activities, I see potential new venture ideas all around me</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I have a special alertness or sensitivity towards new business opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>“Seeing” potential new business opportunities does not come very natural to me</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### How helpful your contacts are in recognizing business opportunities?

<table>
<thead>
<tr>
<th>My contacts or discussions with various consumers/ customers might help me to recognize business opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>My contacts or discussions with bankers, investors, lenders, and venture capitalists might help me recognizing business opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>My social contacts might help me to recognize business opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discussions with my family might help me to recognize opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discussions with my close friends might help me to recognize business opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I think my relatives are helpful in recognizing opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Getting information or feedback from industry-related meetings and joining associations sometime help me to recognize business opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Getting information or feedback from instructional seminars, workshops or training programs help me to recognize business opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Getting information or feedback from technical publications help me to recognize opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Having a mentor entrepreneur help me in recognizing an opportunity</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I think having a faculty mentor is very helpful in recognizing business opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I think having more than one mentors from different industries are helpful in recognizing business opportunities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>