

# **Linking the Dots: Innovative Capability and Sustainable Growth of Women Owned Technoprises in Asian Developing Countries**

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## **ABSTRACT**

This paper is a pedagogic endeavor to append the existing literature on relationship between innovative capability and sustainable growth of a firm. The basic premise of the discussion is related to demonstrating the issue of essentiality, challenges and pitfalls related to the development of innovative capability and sustainable growth specifically in women-owned technoprises (SMEs) of Asian developing countries. In pursuit of resolving the aforementioned issue, this study construes the importance of innovative capability for gaining sustainable business growth and explicates the dire need of studying important factors related to the development of these constructs among women-owned technoprises. the influential role of women entrepreneurs' human, social and psychological capital in determining the innovative capability and consequent sustainable growth of their firms is asserted, albeit, important and supplementary role of incorporating certain technological entrepreneurship development activities is also anticipated. Future research implications are also discussed.

**Key Words:** Innovative Capability; Sustainable growth; Technological Entrepreneurship development; Women owned Technoprises; SMEs

## INTRODUCTION

Advancement in science and technology has led the entrepreneurship in a newer horizon of technological entrepreneurship development. For its soaring potential to elevate the economical stance of a nation, it has become a buzzword in most developed parts of the world now (Abdullah, 2009; Prelazzi, 2009). However, the economic robust by technopreneurship development requires two basic ingredients of innovative capability (Tambunan, 2011) and sustainable growth (Lee, 2010) of the technology based enterprises. As Hamel and Prahalad (1994:400), in their approach to rules for success in a business stated,

*“A company surrenders today’s business when it gets smaller faster than it gets better. A company surrenders tomorrow’s businesses when it gets better without getting different”.*

The development and sustainable growth of the new and existing ventures is a sign of healthy and fruitful entrepreneurial activities in a society (Lee, 2010). Moreover, this sustainable growth depends on a more long-term growth orientation (strategic approach) of the entrepreneurs (Berry, 1998).

On the other hand, Innovation has always been considered at the heart of entrepreneurship (Schumpeter, 1934). In technological entrepreneurship, specifically, innovation is the most important success factor. Nonetheless, in recent years, development and management of the innovation capability has been acknowledged as a prime growth imperative and tool for sustainability (Rush et al., 2007). In firms operating in more dynamic environment of science and technology, this continuous development and management of innovation is even more inevitable (Nieman & Pretorious, 2004). Debate on technopreneurship development and role of women in it elucidates the significance and inevitability of their contribution in this regard (Tambunan, 2011) and the need for women technopreneurs running their own firms has been raised in the developed and developing economies of the world, lately (Smallbone & Wyer, 2006; Kepler & Shane, 2007; Padnos, 2010).

This study is particularly intended to discuss the relationship of innovation capability and sustainable growth among more desirable yet underprivileged and underrated group of women-owned technology based SMEs in Asian developing countries (Tambunan, 2009; 2011). Due to exclusive needs, characteristics and impediments related to women entrepreneurship development in these developing countries, we contend that such a study is essential for three main reasons: to analyze the innovative capability of the women-owned technological based SMEs in developing countries; to assess current status of sustainable growth of these firms and to examine the relationship and role of innovative capability in determining the sustainable growth of these firms.

Firstly, Innovativeness of technological based enterprises is considered to be lifeblood for the success and growth of these enterprises (Livesey et al., 2006). Women, today, are found to be equally and sometimes more innovative than their male counterparts (Padnos, 2010). Hence, it is expected that their firms should also be as sufficient in their innovative capabilities as male-owned technoprises. However, this has not been found as far as the women-led technoprises (SMEs) are concerned (Wadhwa, 2010). So there is a dire need to assess the innovative capability of women owned technology based SMEs (technoprises), by identifying factors affecting it, as these SMEs can be potential levers for the technopreneurship development in developing countries of Asia (Tambunan, 2011). In this regard a question arises

that “What are the distinguishing factors that influence the development of the innovative capability of women owned technology based SMEs in developing countries?”

Secondly, the growth cues for women entrepreneurs are different as compared to their men counterparts (Birley, 1989) and women entrepreneurs also show disparity among their own gender group in this respect (Gundry & Welsch, 2001). Women owned businesses are mostly labeled as low-growth oriented businesses and achieving and maintaining a sustainable growth is one of the greatest dilemmas for such women-led firms. Boden and Nucci (2000) argued that women owned hi-tech companies do not perform well in the later stages of their development. This situation gets worse when it comes to their contribution in the technological enterprises where they need to face even more challenges related to socio-economic factors (Brush, 1992; Roomi & Harrison, 2008). In this case, question arises: “What are the prerequisites for nurturing high-growth orientation among the women technopreneurs?”

Thirdly, innovative capability has been acknowledged as one prime factor in determining the successful growth of the technoprises (Subrahmanya et al., 2010; Lee & Hsieh, 2010). Women although have equal potential of bringing in innovativeness yet due to their exiguous resources and distinct business approach they are most of the times unable to manage their innovative capability in the long run (Tambunan, 2011). Here arises the importance of investigating that “On behalf of women technopreneurs, which activities should be acquired to foster their firms’ innovative capability in order to attain sustainable growth?”

With the help of the related literature, this paper intends to seek for features that may be lacking among these women owned technoprises and hampering their innovative capability and sustainable growth and to provide implications for nurturing their capacities for innovation and sustainable growth.

## **LITERATURE REVIEW**

Before starting discussion on the literature related to the relationship of innovative capability and sustainable growth in women-owned technoprises (SMEs), it is important to give a brief insight into what actually sustainable growth and innovative capability is and what are the key factors that reinforce or restrain their development in business enterprises. Danchev (2006) explained sustainable growth is preconditioned with the rise in market share, vision for technological progress, persistent improvement of human capital and securing firm’s natural capital by building up conducive and healthy environment within and outside the firm. The challenge of gaining and maintaining sustainable growth is equally important for small firms and large organizations and for both male and female owned businesses; however, the opportunities and barriers faced by firms are varied regarding their size, industry and attributes of the owner (Berry, 1998; Lawson & Samson, 2001). Like sustainable growth, innovative capability development and management has also been acknowledged as prime factor for determining entrepreneurial success in the business world generally and specifically in small enterprises (Hansen et al., 2011; Yuanjian et al., 2011).

### **Relationship between Sustainable growth and Innovative Capability**

Entrepreneurship development is related to not only emphasizing on building new ventures but to consistently drawing policies to foster their growth by working at all levels from personal to national rather trans-national level (Hart et al., 2003). Sustainable growth of the

firm is a buzz word in today's highly competitive industrial world (Danchev, 2006) and is attributed as the foundation of long term strategy to gain economic benefits (Clark, 1995). A company is known to have sustainable growth when it is capable of maintaining its growth without facing any financial, structural or strategic setbacks. This growth challenge grows more vigorous in more tumultuous, fast changing and competitive markets and is impossible to accrue unless special attention is given to two most important dimensions of building up growth strategy and growth capability, simultaneously and interactively (Timothy, 1997).

The basic imperative for developing growth strategy and capability in the firms operating in technological industry is their capacity to innovate. The conventional literature related to entrepreneurship characterizes it as a process that can elevate the economical stance of a nation with innovation as its pre-requisite (Schumpeter, 1934). In Schumpeterian view, entrepreneurship connotes the opportunity seeking and seizing behaviour of an individual assisted by one's abilities to innovate. Where innovative activity is related to the firm's internal resources, external linkages and creativity of human capital (Trott, 2005), the characteristics required to pursue this innovative activity is known as innovative capability (Sen & Egelhoff, 2000). Adler and Shenbar (1990) explained Innovative capabilities as capacity to develop new products by envisioning market needs and trends, assisting product development with the best technological processes, updating new product and process development to satisfy future needs and counteracting uncertainties caused by competitors. The technological innovation capabilities are known as organizational characteristics that help in facilitation of the technological innovation strategies of an organization (Guan & Ma, 2003; Burgelman et al., 2004). Weerawerdena (2003) explained different types of innovative capabilities as related to product, process, management and market. He insisted upon developing both technological (product, process) and non-technological (management and marketing) innovative capabilities. Innovation is considered as a systematic process instead of just *'an out of a blue idea'* and innovative capabilities are not inert but learned in nature and prone to development and management (Drucker, 1985). Betz (2011:48) stated,

*"How a company manages its innovation and product development process is critical to its competitiveness---and long-term growth".*

In the technology based firms, these innovative capabilities are of even more prime importance as the radical changes in the technological world urge these firms to *"keep their engines moving"* in terms of innovation generation. These innovative capabilities on one side are essential for determining the competitive position of the firm and on other side are related to the sustainable growth (Karagouni & Papadopoulos, 2007). Subrahmanya et al. (2010) in their comparative studies on the growth of innovative and non-innovative hi-tech SMEs in Bangalore (India) found that the later showed remarkable growth outcomes in terms of sales, international patent acquisition, employment and sustainable growth. Lee and Hsieh (2010) discussed impact of entrepreneurship on getting sustained competitive advantage through developing innovation capability and market capability where innovative capability had a direct effect on sustainable competitive advantage whereas marketing capability had an indirect one. However, Francis and Bessant (2005) argued:

*"The contribution of innovation to the profitability of a firm is not straightforward" (pg: 171) and "...innovation can be seen as strategy driven and deliberate rather than emergent or serendipitous" (pg: 177).*

Although the mandatory role of innovative capability and sustainable growth of the firm is quite obvious (Lee & Hsieh, 2010), however, the contingency of developing innovative capability is related to nature of industry, firm and entrepreneurs' personal approach to it. Berry and Taggart (1998) shed light on the essential and active role of the entrepreneur of SMEs in determining the strategic approach of the firm regarding its innovative and growth orientation.

### **Sustainable growth, innovative capability and Women owned technoprises in Asian developing countries**

A verve of gearing up technological entrepreneurship as a struggle for becoming innovative economies, has necessitated development of women owned technoprises in the developed and developing countries of the world (Smallbone & Wyer, 2006; Kepler & Shane, 2007; Padnos, 2010). Where the number of successful women-owned technoprises is increasing at a fairly good pace in developed nations like US (Padnos, 2010), developing countries are lagging far behind regarding this successful women technopreneurship development (Alam et al., 2011).

The essential and comparable role of women entrepreneurs and SMEs in employment generation and gearing national economic robust (Berry, 1998; Tambunan, 2009) entails the development of more women- owned technology based SMEs (Abdullah, 2009) with due consideration for developing their innovative capability (Tambunan, 2011) and sustainable growth (Oakey et al., 1990; Oakey, 1991; Berry, 1998; Berry & Taggart, 1998; Roomi & Harrison, 2008). Although, women owned SMEs in most of the Asian developing countries have shown remarkable contribution in the national GDP growth (ILO, 2003; D'Curz, 2003; Ruminska-Zimny, 2004; UNDP, 2007, Tambunan, 2006, 2007, 2009) as well as high potential for bringing in innovative breakthroughs (Tambunan, 2011), yet they possess low growth rates (Tambunan, 2009).

Women entrepreneurs opt for more informal and participative way of running a business, mostly in the non-technological industry (D'Curz, 2003) and are less strategic (Brush, 1992) and are generally found involved in businesses based on less capital, less revenues and less growth (Bird, 1989). In developing countries, specifically, these distinctive entrepreneurial characteristics among women are mostly due to their more prevalent instinct of venture start-up, i.e. necessity entrepreneurship (Morris et al., 2006; Tambunan, 2011). They are obsessed by the push factors of entrepreneurship development (lack of opportunities, family needs, less wages etc) (Orhan & Scott, 2001) that have less potency to show positive development in terms of growth and sustainability as compared to pull factors (need for achievement, need for independence, growth prospects) (Nasser et al., 2009). Their entrepreneurial behavior is found to be directly influenced by the external implications (gender disparity, social status, culture, religion and financial access) and individual traits (self-confidence, self-fulfilment, self-esteem, education/skills, experience/exposure) (Roomi & Parrot 2008, Hossain et al., 2009), albeit, women entrepreneurs are more influenced by their endogenous factors than exogenous factors (Gatewood et al., 1995)

### **Factors affecting Sustainable growth of women-owned technoprises in Asian developing countries**

The growth of hi-tech small firms and strategies opted for it is found to be influenced strongly by the profile and attributes of the entrepreneur (Berry & Taggart, 1998). Men and



women entrepreneurs differ greatly regarding their business growth orientation. Where men take profits as the measure of their growth in business, female entrepreneurs consider growth in terms of their family support and relationships as more important (Stevenson & St-Onge, 2005). This difference in their priority for making decisions regarding growth is a due to many external factors like government, society, business sector, macro-economic and culture on one hand and internal factors like personal motivations, knowledge and skills and social and business networking (Das, 2000; Kantor, 2001; Dhameja et al., 2002, Nchimbi, 2003; Affholder & Box, 2004; Stevenson & Onge, 2005; Minetti et al., 2005, Tambunan, 2009, 2011).

Despite of much positive work done regarding uplifting the status of female entrepreneurs globally, still as an entrepreneur, they have many socio-economic constraints to make their entry smooth and have to struggle hard for their survival also. According to the '*female underperformance hypothesis*' by DuReitz and Henrekson (2000), women-owned businesses are generally less performing in terms of profitability and growth (Hisrich & Brush, 1984; Kalleberg & Leicht, 1991; Rosa & Hamilton, 1994; Fasci & Valdez, 1998). The success and growth of technological enterprises is a factor of entrepreneurs' human capital, social capital and psychological capital. It is strongly argued that experience and education (both technical and entrepreneurial) plays vital role in determining growth of these enterprises (Oakey et al., 1990; Wright et al., 2007; Izedonmi & Okafor, 2010). It is argued that more educated and experienced entrepreneurs are more flexible to environmental changes and are more prompt in problem solving (Siegel, 1999), opportunity exploitation (Brown, 2000) and development and management processes in venture startup (Luthje & Franke, 2003; Okhomina, 2007; Okhomina, 2010) hence participating more in economic and sustainable development (Ekankumo & Kemebaradikumo, 2011) and showing better survival rates than those with less or no entrepreneurial knowledge (Storey, 1994). The sustainable growth of technological small and medium sized firms is only possible by integration of the entrepreneurs' technological knowledge and skills with its resources (Teixeria & Fortuna, 2003). Moreover, entrepreneurs' education and experience can act as a strong mediator in this regard (Ong & Ismail, 2008). Studies revealed that in comparison to low growth oriented women entrepreneurs, high growth oriented women entrepreneurs are more educated with prior experience, have strong social, networking and financial support with the help of their family/husband, have attended entrepreneurial training programs and have strong needs for achieving sustainable growth of their businesses (ILO, 2003). Furthermore, they opt for more modernized and efficient equity resources than low growth oriented women entrepreneurs who mostly rely on the debts through banks like angle capital, venture capital etc, lately (Brush et al. 2006)

Where individuals are the resources to bring in environmental transformations and developments, society is one major factor to configure these resources. Social capital is aggregate of norms, networks, and social ties of individuals that help them to work together to accomplish a common goal and mutual benefit (Westland & Bolton, 2003). Hence, importance of social capital of the individuals is raised by scholars in terms of better performance results, trust relationships and economic development (Putman, 1993a, b; Briggs, 1998). Putnam (1993a) demonstrated two types of social capital, where '*bonding capital*' explains the networking of people already familiar to each other and '*binding capital*' as social ties made up of individuals previously unknown to each other. Higher levels of sustainable entrepreneurialism are susceptible to prevail, if there exists strong feedback capacity based on

trust among the actors comprising social capital (Danchev, 2006) and if the social norms are conducive with the sustainability objectives (Meek et al., 2010). On the other hand, some studies have also identified drawbacks of this high level of bonding social capital (strong ties) in terms of inflexibility and over interdependency (over embeddedness) of the entrepreneur that may change the 'binding for opportunities' to 'blind the opportunities' (Johannisson, 2000). It has been illustrated in social capital literature that although the weak ties (bridging social capital) are considered as wobble and vague, yet they have astounding capability of widening up the diversity of information and knowledge that is crucial for growth prospects and survival in a highly competitive industry like hi-tech industry (Burt, 1992; Elfring & Hulsink, 2003).

Women entrepreneurs are generally found at a disadvantage for being less strategic in making and utilizing their social networks specially those related to weak ties and their more reliance on strong ties happen to be a drawback in gaining growth prospects (Foss, 2010). Women owned businesses, specifically relying on the strong ties (Brush, 1992) for their inclination for emotionality instead of instrumentality, are in a dire need to build up their weak ties (linkages) with mixed gender networking in order to get easy and valuable market and financial assistance in the most competitive industry of technology (Lim et al., 2003; Foss, 2010).

Hmieleski and Corbett (2006) argued that entrepreneurship is related to risk taking behavior (risk propensity) which is provoked by high levels of confidence in ones' self to cope up with the anticipated risks (self-efficacy). As compared to men, women entrepreneurs are found to be less confident on their power to deal with seen and unseen impediments in external environment making them less successful in the long run (Mueller, 2004). Entrepreneurial self-efficacy has been associated with positive attitude towards social networking and intention to grow (Moy & Luk, 2005) and is significantly related to the firm's performance yet the industry conditions and optimism affect the strength of this relationship. In more volatile environments the entrepreneurs are susceptible to make flaws in their decisions as exposed too much uncertainties and thus their self-efficacy may not bring in positive results alone (Hmieleski & Baron, 2008). Furthermore, Literature depicts need for achievement as the most inadequate psychological attribute found in the women of developing countries which is restraining the women of the region to show their enthusiasm for entrepreneurial development (Curz, 2003). The comparative studies on the need for achievement in women entrepreneurs of developed and developing nations it has been noticed that the ones from former group show strong impetus regarding achievement need (Orhan & Scott, 2001). Hence, this attribute needs to be developed more in them for their potential for long-term entrepreneurialism (Milanovic, 2001; D'Curz, 2003; Tambunan, 2009).

Women entrepreneurs tend to be noticeably different in risk taking (Sexton & Bowmann-Upton, 1990) and pay exclusive attention to all risk indications thus being more risk averse in nature (McClelland, 1961; Yip, 2000) hence showing less growth intentions (Brush et al., 2006). Internal locus of control or ability to overcome environmental obstructions has also been found to be related to business success and growth (Entrialgo et al., 2000; Rose et al., 2006). Lee and Tsang (2001) in studying the effects of entrepreneurs' personality and networking on ventures' growth in Singaporean SMEs found that the internal locus of control of the entrepreneurs had positive significant impact on the growth of these firms.

### **Factors affecting Innovative Capability of Women-owned technoprises**

Innovativeness and technopreneurship can proliferate only in certain conditions and is not related just to the abundance of financial supports from the government or other agencies. The essentiality of '*intangibles*' of entrepreneurship in fostering regional transformations through technopreneurship has been argued, where the role of executive leader/entrepreneur in stimulating the collaborative environment to nurture technopreneurship development is eminent (Venkataram, 2004). The personal factors of entrepreneurs are found to be strongly related to educating and developing the innovative capabilities of development and management among them (Yu & Yanfei, 2009; Dakhli & Clercq, 2004; Wang et al., 2010).

Educational level of the entrepreneur has important role in the entrepreneurial success and competency building by nurturing innovativeness and risk taking behavior (Okhomina, 2010). In case of hi-tech firms, along with the general education and skills needed for entrepreneurship development, the sturdy requirement and role of technological skills and innovation capabilities of the technopreneurs springs out vividly. Hill and Rothaermel (2003) in their study found the reinforcing effect of human capital on innovation capabilities and these innovation capabilities are one of the main ingredients for the development and sustainability of hi-tech companies. Research on the participation of women in acquisition of technical education has revealed that a large number of women are pursuing for it in developed and developing nations. This has certainly improved their innovative skills and women of developed and developing nations have finally managed to make a foot-step in the hi-tech industry (Wadhwa, 2010), yet these innovative women entrepreneurs need to augment their innovative capability with a more strategic, learning, networking (U.S. Congress, 2010) and market approach (Osman et al., 2011) to gain long term benefits..

Social capital with its community characteristics has been documented to have tendency of impact on the innovativeness (Westlund & Bolton, 2003). It has been argued that innovation capability is not only an ability to generate novelty of ideas and developing products, processes and business models accordingly, but the ability to commercialize it also (Prelazzi, 2009). Where internal social capital (bonding) had been proven to be essential in provoking internal embeddedness and cohesiveness of the organizational structure, systems and relationship thereby assisting one developmental pole of the innovative capability continuum; external social capital (bridging) is indispensable for bringing this development into functionality by supporting the commercialization pole. Studies on knowledge based SMEs reveal that social capital greatly influences the knowledge transfer and therefore helps developing technological capabilities for better growth (Yokakul et al., 2011) and SMEs need to create innovation efficiency, innovative networking and have to widen up their linkages by distinct partners (Liang et al., 2010). Elfring and Hulsink (2003) in their studies on testing the role of strong and weak social ties in invoking entrepreneurial processes and innovations (regular or dynamic) argued that in hi-tech firms a hybrid of strong/weak ties is needed especially when it comes to development of radical (dynamic) innovations. Moreover, where strong ties are necessary for securing the resources, weak ties play vital role in putting these resources into action (Foss, 2010), opportunity discovery and acquiring socio-political legitimacy for the innovations. Hence both strong and weak ties of social capital must be managed together in order to get maximum benefits of opportunity exploitation (Uzzi, 1997).



Entrepreneurs have always been distinguished from managers and non-entrepreneurs in terms of their instinct qualities and specific attributes they possess and display. These personal traits are related to their psychological being and knowledge about self capabilities in relation to their social fabric and financial resources and urge them to tap and unleash their creativity and take on steps towards venture creation (Hisrich, 1990). Entrepreneurial self-efficacy in entrepreneurs enables them to carry out and get done all the entrepreneurial activities such as marketing, management, innovation, risk-taking, human resource development etc effectively (Chen et al., 1998; De Noble et al., 1999). Ndubisi (2007) found risk propensity and innovativeness of the women entrepreneurs as the most significant factors in determining their technology adoption. Similarly, internal locus of control has been found to be related to innovativeness among entrepreneurs. Mueller and Thomas (2000) in their comparative studies of 9 countries for evaluation of role of locus of control and innovativeness in entrepreneurial potential found that countries where the individuals are given opportunity to nurture and equip themselves for external challenges (individualist) have greater levels of entrepreneurial potential than those where culture of independence for thinking, creativity and action is surrogated (collectivist). Alam et al. (2011) in their studies on 1416 entrepreneurs of Malaysia explained the significant effect of entrepreneurs' need for achievement, risk propensity, confidence and innovativeness on determining the level of their firms' innovative capability.

#### **Need for Technological entrepreneurship development Activities Framework—A Sustainable business approach**

Studies on sustainable growth of technology based firms and role of innovative capability in this regard have gained unanimous standpoint of the scholars upon not only developing but also managing these innovative capabilities, lately (Francis & Bessant, 2005; Rush et al., 2007; Hansen et al., 2011). The innovative capability that adds value to the firms mostly in shape of its capacity to generate positional capabilities (deployment of resources through organizational processes) with continuous innovation for competitive advantage and sustainability is the one which is needed by today's firms (Foss & Robertson, 2000). It requires focus on imperative technology development activities for exploration, identification, utilization and integration of technological and market knowledge to build higher levels of capacities to innovate, compete and sustain (Bessant et al., 2000; Abdullah, 2009).

As mentioned earlier, growth of women-owned technoprises generally and more specifically of developing regions is throttled due to their inadequacy for technological knowledge and skills, ability to adopt and adapt new knowledge in the changing business and technological environment, utilizing and building their social resources to gain industry insight, market and strategic approach in their long-term planning (Brush, 1992; Berry & Taggart, 1998; Morris et al., 2006; Tambunan, 2009). Technological world is full of ephemeral opportunities and unanticipated threats. Hence, in this top-gearred and varying technological world, enterprises need to manage and bring in changes in their firm's technological paradigm for long term stability. Technology paradigm is the ability to comprehend the technological platform (at present), characterizing problems attached with it and acquiring knowledge to answer them (Dosi, 1982) which is triggered by entrepreneurial awareness (Foss & Robertson, 2000). Technological paradigm shifts hold out for change in firms' current strategy for technology development and innovation capability and then firms with strategic flexibility are always at an

advantage. Women entrepreneurs in the technology based businesses are found to be either less aware of the technological improvements and innovations in their related fields or are reluctant to adopt and inculcate these technological changes into their business and innovative activities (Ogunlana, 2004).

Although the pre-venture entrepreneurial education and experience is important for predicting venture success, however, it has been noticed that most of the entrepreneurs running SMEs, need to develop their post venture entrepreneurial knowledge and experiences through continuous learning from their past failures, experiences and networks (Deakins & Freel, 1998). Moreover, strategies opted for growth prospects need to be assisted by continuous learning about human capital requisites for the tech world they are operating in and attaining these required skills (Shrader & Siegel, 2007) or else these ventures may not enjoy juvenescence of long-term growth and head for an untimely death. Literature from learning and marketing orientation and its role in innovation and growth sheds light on the dearth of these attributes among women entrepreneurs (Liu et al., 2002; Matsuno et al., 2002; Chen et al., 2009; Osman et al., 2011) hence hampering their growth trajectory. Prahalad (1993), in reviewing his scorecard for better growth in a more competitive world he argued that the entrepreneurs will have to change their 'me too' mindset of bringing in incrementalism to offset the cut throat competition in the technological world. Business viability in the long-term is greatly inherent to identifying the core strengths or competencies of the business that can bring in sustained competitive advantage to them (Parahalad, 1993; Kak, 2004). Women owned businesses where lack other vital elements for sustainable growth are found to be feeble in their identification, development and continuous refurbishment of these core business strengths in order to stay ahead of their competitors. This requires a greater scrutiny, facilitation and different approach to their businesses (Mukhtar, 1998).

The importance of networking in female owned enterprises is inevitable due to its critical effect on their business success and growth (Lee, 2007; Lee, 2009). These formal networks are of great help for improving the handicap of low access to capital resources among women entrepreneurs and helping them have smooth access to financial assistance by providing market assistance in shape of suppliers, investors, partners and customers. The role of entrepreneur as a strategic leader evolves to be a lifeline for sustainable business growth. In SMEs where short-term goal planning is found to be more pervasive than long-term planning, major pitfalls have been noticed in terms of integration of technology and business strategy (Berry & Taggart, 1998). Women from their more relational attribute of leadership (Miller, 1976; Buttner, 2001) can have better performance outcomes from their employees regarding their innovation strategy provided it is based on good market orientation along with technological revelation (Osman et al., 2011). The aforementioned problems entail possession and portrayal of a more sustainable approach to technopreneurship business by women entrepreneurs by not only improving their human, social and psychological capital but relating and integrating them with development and management of their firms' innovative capability and sustainable growth (Abdullah, 2009; Tambunan, 2011).

## **DISCUSSION AND CONCLUSION**

In elaborating the relationship of innovative capability and sustainable growth and the essentiality of their concomitance for successful and high performing businesses, special focus is made on women owned technology based ventures. After the exhaustive study of the

literature many factors influencing the development and co-existence of these pre-requisites for successful women technopreneurship and economic growth are identified. Where sustainable growth of a technological firm rely greatly upon the capability of the firm to bring in innovativeness at regular basis, other influential factors related to characteristics of its environment and entrepreneur also originate profoundly (Berry & Taggart, 1998; Brush et al., 2006). According to new approach regarding opportunity seeking, the cognizance of the relationship is not much simple and involves scrutiny of important factors and integration of supplementary activities to harness this relationship (Venkataram, 2004). It has been seen that governments and policy makers are meticulously busy in elevating the technopreneurship status of their nations both in developed and developing countries (Padnos, 2010; Alam et al., 2011); however, there is a difference in the output of the women entrepreneurs in contributing towards this technopreneurship development (Wadhwa, 2010). This difference is even more prominent in the women entrepreneurs of developing regions (Venkataram, 2004). Yet, this incongruity, by and large, is discussed in literature as the result of their differential resources in terms of their skills, knowledge, motivations, networking, and finance (Roomi & Parrot, 2008; Babalola, 2009; Tambunan, 2009, 2011). Several studies have recognized the influential role of the factors related to entrepreneurs' human, social and psychological resources in determining quality of their innovative capability and sustainable growth (Dakhli & Clercq, 2004; Yu & Yanfei, 2009; Wang et al., 2010; Liang et al., 2010). However, there is still an argument related to their bilateral effect on the innovation and growth orientation among entrepreneurs (Busenitz, 1999; Hmieleski and Baron, 2008; Tambunan, 2009). These entrepreneurial factors affect not only the innovative capability but also the growth orientation of the women-owned ventures. The argument that women and their SMEs lack strategic approach also seems to stem out from the same peduncle (Berry & Taggart, 1998).

Women of Asian developing region dread to step in the techno world due to lack of facilitation on one hand and being weak-kneed on the other (Tambunan, 2011). Strengthening innovations and innovative capabilities among women entrepreneurs of developing countries can help them grow their businesses (SMEs) (Tambunan, 2011) yet it alone cannot lead the technological based firms towards achieving longevity (Francis & Bessant, 2005; Rush et al. 2007) and may be regressive in some cases (Tidd et al., 1997; Yoffie & Cusumano, 1999) unless strategically analyzed and managed. This finding is supported by Berry and Taggart (1998) who argued that a more balanced and flexible, market, technological and strategic approach in technological businesses help them counteract the external factors and strengthen their internal resolution all at the same time. Women and technopreneurship development of Asian developing countries can certainly benefit from resolving the innovation and growth related issues of their firms (Tambunan, 2011).

The core *raison d'être* of the study suggests that women of Asian developing country can contribute better in terms of the up and coming demand of technopreneurship development by improving their overall business approach. This requires a greater manifestation of technology and market awareness, keeping search engines on, learning strategic and market orientation, building core competencies, understanding the changing technology paradigm and developing effective leadership qualities to not only fortify the impact of their personal factors but achieve sustainable growth in tandem. Nevertheless, policy makers

should provide women technopreneurs the environment, training and resources to facilitate this change of business approach in them.

### **FUTURE RESEARCH IMPLICATIONS**

The burgeoning need to reckon women technopreneurship development in Asian developing countries requires serious consideration on introducing high levels of innovative capability with greater capacities to manage it for sustainability of growth. An effort has been made to identify some core and supplementary factors which if nurtured among women technopreneurs, might help solving the issue at hand. Further empirical investigation on the topic is anticipated to assess the actual impact of these factors on fostering innovative capability and sustainable growth in these women-owned technoprises.

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## REFERENCES

- Abdullah, S. (2009). The transformation from entrepreneurship to technology entrepreneurship development in Malaysia: State-led initiatives. *Journal of Chinese Entrepreneurship*, 1, 3, 240-247
- Adler, P.S., & Shenbar, A. (1990). Adapting your technological base: the organizational challenge. *Sloan Management Review*, 25, 25–37
- Affholder, J., & Box, T.M. (2004). Struggles of Female Entrepreneurs. Paper presented at *Allied Academies International Conference*, April 7-10 in New Orleans, Louisiana
- Alam, S.S., Jani, M.F.M., & Omar, N.A. (2011). An Empirical Study of Success Factors of Women Entrepreneurs in Southern Region in Malaysia. *International Journal of Economics and Finance*, 3(2), 166-175.
- Babalola, S.S. (2009). Women entrepreneurial Innovative Behavior: the role of psychological capital. *International Journal of Business and Management*, 4(11), 184-192
- Berry, M. (1998). Strategic Planning in small hi-tech companies. *Long Range Planning*, 31, 3, 455-466
- Berry, M.J., & Taggart, J.H. (1998). Combining technology and corporate strategy in small high tech Firms. *Research Policy*, 26, 883–895
- Bessant, J., Rush, H., & Hobday, M. (2000). *Assessing Technological Capabilities: An Audit Tool*. World Bank, Washington, DC.
- Betz, F. (2011). *Managing Technological Innovation: Competitive Advantage from Change*. John Wiley & Sons
- Bird, B. (1988). Implementing entrepreneurial ideas: the case for intention. *Academy of Management Review*, 13, 442–453.
- Birley, S. (1989). Female Entrepreneurs: Are They Really Any Different? *Journal of Small Business Management*, 27(1), 32-37
- Boden R.J., & Nucci, A.R. (2000). On the survival prospects of men's and women's new business ventures. *Journal of Business venturing*, 15(4), 347-362
- Briggs, X.S. (1998). Brown Kids in White Suburbs: Housing Mobility and the Multiple Faces of Social Capital. *Housing Policy Debate*, 9(1), 177-221
- Brush, C.G. (1992). Research on women business owners: Past trends, a new perspective and future directions. *Entrepreneurship, theory and practice*, 16(4), 5-30
- Brush, C.G., Nancy, M. C., Elizabeth, J. G., Patricia, G. G., & Myra, M.H. (2006). *Growth-oriented Women Entrepreneurs and their Businesses*, Northampton, MA: Edward Elgar Publishing.
- Brush, C. D., Bruin A. D., & Welter, F. (2009). A Gender Aware framework for women's entrepreneurship. *International Journal of Gender and Entrepreneurship*, 1(1), 8-28
- Busenitz, L. (1999). Entrepreneurial risk and strategic decision-making: It's a matter of perspective. *The Journal of Applied Behavioral Science*, 35(3), 325-341.
- Burgelman, R. A., Christensen, C.M., and Wheelwright, S.C. (2004). *Strategic Management of Technology and Innovation*, 4th ed. New York: McGraw Hill/Irwin.
- Burt, R. S. (1992). *Structural Holes: The Social Structure of Competition*. Cambridge, MA: Harvard University Press
- Buttner, E. H. (2001). Examining Female Entrepreneurs' Management Style: An Application of a Relational Frame', *Journal of Business Ethics*, 29(3), 253-269



- Chen, C.C., Greene, P.G., & Crick, A. (1998). Does entrepreneurial self- efficacy distinguish entrepreneurs from managers?' *Journal of Business Venturing*, 13(4), 295-316
- Chen, Y.S., Lin, M.J.J., & Chang, C.H. (2009). The positive effects of relationship learning and absorptive capacity on innovation performance and competitive advantage in industrial markets. *Industrial Marketing Management*, 38, 152-158
- Clark, T. (1995). *Managing Consultants: Consultants as the Management of Impressions*. Buckingham: Open University Press.
- Dakhli, M., & Clercq, D.D. (2004). *Human capital, social capital, and innovation: a multi-country study*. *Entrepreneurship & Regional Development*, [16\(2\)](#), 107-128
- Danchev, A. (2006). Social capital and sustainable behaviour of the firm. *Industrial Management & Data Systems*, 106(7), 953-965
- Das, D.J. (2000). *Problems faced by women entrepreneurs*. In *Women Entrepreneurship*, eds. K. Sasikumar. New Delhi: Vikas Publishing House.
- D'Cruz, N.K. (2003). *Constraints on Women Entrepreneurship Development in Kerala: An Analysis of Familial, Social, and Psychological Dimensions*, Thiruvananthapuram, India: Centre for Development Studies.
- Deakins, D., & Freel, M. (1998). 'Entrepreneurial learning and the growth process in SMEs. *The Learning Organization*, 5(3), 144–155
- De Noble, A.F., Jung, D., & Ehrlich, S.B. (1999). Entrepreneurial Self-efficacy: the development of a measure and its relationship to entrepreneurial action. In *Frontiers of Entrepreneurship Research*, eds. Reynolds P, Bygrave W, Manigart S, Mason C, Meyer G, Sapienza H, Shaver K. Babson College: Babson Park, MA.
- Dhameja, S.K., Bhatia, B.S., & Saini, J.S. (2002). *Problems and constraints of women entrepreneurship'*, In *Women and Rural Entrepreneurship*, eds. D.D. Sharma and S.K. Dhameja. Chandigarh: Abhishek Publications.
- Dosi, G. (1982). Technological Paradigms and Technological Trajectories. *Research Policy*, 11, 147-162
- Drucker, P.F. (1985). *The Practice of Innovation. Innovation and Entrepreneurship Practice and Principles*, Harper & Row: New York
- Du Rietz, A., & Henrekson, M. (2000). Testing the Female Underperformance Hypothesis. *Small Business Economics*, 14(1), 1-10
- Ekankumo, B., & Kemebaradikumo, N. (2011). Entrepreneurship and Entrepreneurial Education (EE): Strategy for Sustainable Development. *Asian Journal of Business Management*, 3(3), 196-202
- Elfring, T., & Hulsink, W. (2003). Networks in Entrepreneurship: The case of Hi-technology Firms. *Small Business Economics*, 21, 409–422
- Entrialgo, M., Fernandez, E., & Vazquez, C.J. (2000). *Characteristics of Managers as Determinants of Entrepreneurial Orientation: Some Spanish Evidence*. *Enterprise and Innovation Management Studies*, 1(2), 187-205
- Fasci, M.A., & Valdez, J. (1998). A performance contrast of male- and female-owned small accounting practices. *Journal of Small Business*, 36(3), 1-7
- Foss, L. (2010). Research on entrepreneur networks: The case for a constructionist feminist theory perspective. *International Journal of Gender and Entrepreneurship*, 2(1), 83 – 102

- Francis, D., & Bessant, J. (2005). Targeting innovation and implications for capability development. *Technovation*, 25, 171–183
- Gatewood, E. J.; Shaver, K. G., & Gartner, W. B. (1995). A longitudinal study of cognitive factors influencing start-up behaviours and success at venture creation. *Journal of Business Venturing*, 10, 371-391
- Guan, J.C., & Ma, N. (2003). Innovative capability and export performance of Chinese firms. *Technovation*, 23(9), 737-747
- Gundry, L.K., & Welsch, H.P. (2001). The ambitious entrepreneur: High growth strategies of women-owned enterprises. *Journal of Business Venturing*, 16(5), 453-470
- Hamel, G., & Prahalad, C.K. (1994). *Competing for the Future*. Harvard University Press.
- Hart, S. L., Milstein, M. B., & Caggiano J. (2003). Creating Sustainable Value. *Academy of Management Executive*, 17, 56-70
- Hansen, A., Jungbluth, C., Hees, F., & Jeschke, S. (2011). Strategies and characteristic of the innovative capability of small and medium-sized enterprises: Research results from Germany. Paper presented at 5<sup>th</sup> *International Technology, Education and Development Conference*, 7-9 March in Valencia, Spain.
- Hill, C.W.L, & Rothaermel, F.T. (2003). The performance of incumbent firms in the face of radical technological innovation. *Academy of Management Review*, 28(2), 257-274
- Himieleski, K.M., & Corbett, A.C. (2006). Proclivity for improvisation as predictor of entrepreneurial intentions. *Journal of Small Business Management*, 41(1), 45-63
- Himieleski, K.M., & Baron, R.A. (2008). When does entrepreneurial self-efficacy enhance versus reduce firm performance? *Strategic Entrepreneurship Journal*, 2, 57–72
- Hisrich, R. D. (1990). Entrepreneurship/intrapreneurship. *American Psychologist*, 45, 209-222
- Hisrich, R. D., & Brush, C. (1984). The woman entrepreneur: Management skills and business problems. *Journal of Small Business Management*, 22(1), 30-37
- Hossain, A., Naser, K., Zaman, A., & Nuseibeh, R. (2009). Factors influencing women business development in the developing countries: Evidence from Bangladesh. *International Journal of Organizational Analysis*, 17(3), 202 - 224
- International Labour Office, ILO (2003). Ethiopian Women Entrepreneurs: Going for Growth. ILO Sub-regional Office, Addis Ababa and Ministry of Trade and Industry, Women's Affairs Department (MTI/WAD) in association with SEED, International Labour Office, Geneva.
- Izedonmi, P.F., and Okafor, C. (2010). The Effect of Entrepreneurship Education on Students' Entrepreneurial Intentions. *Global Journal of Management and Business Research*, 10(6), 49-60
- Johannisson, B. (2000). Networking and Entrepreneurial Growth. In the *Blackwell Handbook of Entrepreneurship*, eds. D. L. Sexton and H. Landström. Oxford: Blackwell.
- Kalleberg, A., & Leicht, K.T. (1991). Gender and organizational performance: Determinants of small business survival and success. *Academy of Management Journal*, 34(1), 136-161
- Kak, A. (2004). Strategic Management, Core Competence and Flexibility: Learning Issues for Select Pharmaceutical Organizations. *Global Journal of Flexible Systems Management*, 5(4), 1-15
- Kantor, P. (2001). Promoting Women's Entrepreneurship Development based on Good Practice Programmes: Some Experiences from the North to the South', SEED Working Paper No. 9 (Geneva, ILO).

- Karagouni, G., & Papadopoulos, I. (2007). The Impact of Technological Innovation Capabilities on the Competitiveness of a Mature Industry. *Management of International Business & Economic Systems*, 1(1), 17-34
- Kepler, E., & Shane, S. (2007). Are Male and Female Entrepreneurs Really that Different? Working Paper 309, SBA Office of Advocacy, Washington DC.
- Lawson, B., & Samson, D. (2001). Developing innovation capability in organizations: A dynamic capabilities approach. *International Journal of Innovation Management*, 5(3), 377-400
- Lee, D.Y., and Tsang, E.W.K. (2001). The effects of entrepreneurial personality, background and network activities on venture growth. *Journal of Management Studies*, 38(4), 583-602
- Lee, R. (2007). The International Library of Entrepreneurship: New Firm Startups. *International Journal of Entrepreneurial Behavior & Research*, 13(6), 380 – 383
- Lee, R. (2009). *Social capital and business and management: Setting a research agenda*. *International Journal of Management Reviews*, 11(3), 247–273
- Lee, J.S., & Hsieh, C.J. (2010). A Research in Relating Entrepreneurship, Marketing Capability, Innovative Capability and Sustained Competitive Advantage. *Journal of Business & Economics Research*, 8(9), 109-120
- Liang, L.W., Shih, K.H., & Chung, Y.H. (2010). Financing instruments and strategies of agribusiness: Evidence from Taiwan. *African Journal of Business Management*, 4(3), 320-332
- Lim, S., F., Smith, K., & Bottomley C. (2003). Successful Graduate Female Entrepreneur-The Scottish Experience. A paper for the *Small Enterprise Association of Australia and New Zealand 16th Annual Conference*, Ballarat, 28th Sept.-1st Oct.
- Liu, S.S., Luo, X., & Shi, Y.Z. (2002). Integrating customer orientation, corporate entrepreneurship and learning orientation in organizations- in- transition: an empirical study. *International Journal of Research in Marketing*, 19(4), 367-382
- Livesey, F., Minshall, T., & Moultrie, J. (2006). Investigating the technology-based innovation gap for the United Kingdom. Report to the Design Council, University of Cambridge
- Luthje, C., & Franke, N. (2003). The making of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT. *R&D Management*, 33(2), 135–147
- Matsuno, K., John T., Mentzer, J.T., & Ozsomer, A. (2002). The Effects of Entrepreneurial Proclivity and Market Orientation on Business Performance. *Journal of Marketing*, 66(3), 18-32
- McClelland, & David C. (1961). *The achieving society*. Princeton, NJ: Van Nostrand .
- Meek, W.R., Pacheco, D.F., & York, J.G. (2010). The impact of social norms on entrepreneurial action: Evidence from the environmental entrepreneurship context. *Journal of Business Venturing*, 25, 493–509
- Milanovic, B. (2001). *World Income Inequality in the Second Half of the 20th Century*. Washington DC: World Bank. [www.worldbank.org/research/transition](http://www.worldbank.org/research/transition) .
- Miller, J. B. (1976). *Toward a new psychology of women*. Boston: Beacon Press
- Minetti, M., Allen, I., & Langowitz, N. (2005). *Global Entrepreneurship Monitor 2005 Report on Women and Entrepreneurship*. Babson Park, MA., Babson College.
- Morris, M.H., Miyasaki, N.N., Watters, C.E., & Coombes, S.M. (2006). The Dilemma of Growth: Understanding Venture Size Choices of Women Entrepreneurs. *Journal of Small Business Management*, 44(2), 221-244

- Moy, J., & Luk, V. (2005). An Exploration Study: Entrepreneur's Self-Efficacy, Social Network (Guanxi) and HR Practices in Relation to Firm Effectiveness and Intention to Grow for SMEs in Hong Kong. Department of Management, School of Business Hong Kong Baptist University.
- Mueller, S.L. (2004). Gender gaps in potential for entrepreneurship across countries and cultures. *Journal of Developmental Entrepreneurship*, 9(3), 199–220
- Mueller, S., & Thomas, A. (2000). Culture and entrepreneurial potential: A nine country study of locus of control and innovativeness. *Journal of Business Venturing*, 16(1), 51-75
- Mukhtar, S. (1998). Business Characteristics of Male and Female Small and Medium Enterprises in the UK: Implications for Gender-based Entrepreneurialism and Business Competence Development. *British Journal of Management*, 9(1), 41-51
- Nasser, K., Rashid, W., & Nuseibeh, R. (2009). Factors that affect women entrepreneurs: evidence from an emerging economy. *International Journal of Organizational Analysis*, 17(3), 225-247
- Nchimbi, M.I. (2003). Gender and entrepreneurship in Tanzania: A comparative analysis of male-female's start-up motivation, individual characteristics and perceptions of business success. PhD Dissertation, University of Umea, Umea, Sweden
- Ndubisi, N.O. (2007). Evaluating the Direct and Indirect Impact of Traits and Perceptions On technology Adoption by Women Entrepreneurs in Malaysia. *Academy of Entrepreneurship Journal*, 13, 2, 1-20
- Nieman, G., & Pretorius, M. (2004). Managing growth: A guide for entrepreneurs. Juta & Co. Limited
- Oakey, R.P., Cooper, S.Y., & Biggar, J. (1990). Improving product marketing in high technology small firms: some preliminary results. Paper presented at the *ESRC New Technologies and the Firm Initiative Dissemination Conference*, London.
- Oakey, R.P. (1991). High technology small firms: their potential for rapid industrial growth. *International Small Business Journal*, 9(4), 30–42
- Ogunlana, E.A. (2004). The technology adoption behaviour of women farmers: The case of alley farming in Nigeria. *Renewable Agriculture and Food Systems*, 19, 57-65
- Okhomina, D. (2007). Does level of education influence psychological traits? Evidence from used car entrepreneurs. Paper presented at *Allied Academies International Conference, Academy of Entrepreneurship*, January 1.
- Okhomina, D. (2010). Entrepreneurial postures and psychological traits: the sociological Influences of education and environment. *Research in Higher Education Journal*, 8, 1-20
- Okhomina, D. (2010). Entrepreneurial orientation and psychological traits: the Moderating influence of supportive environment. *Journal of Behavioral Studies in Business*, 2, 1-16
- Ong, J.W., & Ismail, H.B. (2008). Sustainable Competitive Advantage through Information Technology Competence: Resource-Based View on Small and Medium Enterprises. *Communications of the IBIMA*, 1, 62-70
- Orhan, M., & Scott, D. (2001). Why women enter into entrepreneurship: An explanatory model. *Women in Management Review*, 16(5), 232-243
- Osman, M.H.M., Rashid, M.A., Ahmad, F.S., & Rajput, A. (2011). Market Orientation-A missing link to successful women entrepreneurship in developing countries: A conspectus of literature. *International Journal of Academic Research*, 3(4), 232-236

- Osman, M.H.M., Ahmad, F.S., Rashid, M.A., & Hussain, G. (2011). Assimilating entrepreneurial orientation and market orientation dimensions in the context of women-owned small and medium sized businesses. *African Journal of Business Management*, 5(14), 5974-5983
- Padnos, C. (2010). High Performance Entrepreneurs: Women in High-tech. Retrieved on February, 1. [www.illuminate.com](http://www.illuminate.com)
- Prahalad, C.K. (1993). The role of core competencies in the corporation. *Research Technology Management*, 36(6), 40-47
- Prelazzi, D. (2009). Innovation & Commercialization: rising to the challenge through business acceleration ecosystem. Working Paper, British Columbia Innovation Council
- Putnam, R. (1993a). Making Democracy Work: Civic Traditions in Modern Italy. Princeton: Princeton University Press.
- Putnam, R. (1993b). The prosperous community: social capital and public life. *The American Prospect*, 13 (<http://epn.org/prospect/13/13/putn.html>).
- Roomi, M.A., & Harrison, P. (2008). Training needs for women-owned SMEs in England. *Education & Training* 50(8/9), 687 – 696
- Roomi, M.A., & Parrot, G. (2008). Barriers to development and progression of women entrepreneurs in Pakistan. *The Journal of Entrepreneurship*, 17(1), 59-72
- Rosa, P., & Hamilton, D. (1994). Gender and ownership in UK small firms. *Entrepreneurship Theory and Practice*, 18(3), 11-27
- Rose, R.C., Kumar, N., & Yen, L.L. (2006). The dynamics of entrepreneurs' success factors in influencing venture growth. *Journal of Asia Entrepreneurship and Sustainability*, 11(3), 1-19
- Ruminska-Zimny, E. (2004). Overview: Making Self-Employment an Important Opportunity for Women. In *Access to Financing and ICT for Women Entrepreneurs in the UNECE Region: Challenges and Good Practices*, UNECE, Geneva, New York.
- Rush, H., Bessant, J., & Hobday, M. (2007). Assessing the technological capabilities of firms: developing a policy tool. *R&D Management*, 37(3), 221-236
- Schumpeter, J. (1934). *The Theory of Economic Development*, Cambridge: Harvard University Press.
- Sen, F.K., & Egelhoff, W.G. (2000). Innovative capabilities of a firm and the use of technical alliances. *Engineering Management, IEEE Transactions*, 47(2), 174 – 183
- Sexton, D., & Bowman-Upton, N. (1990). Female and male entrepreneurs: Psychological characteristics and their role in gender related discrimination. *Journal of Business Venturing*, 5(1), 29-36
- Shrader, R., & Siegel, D.S. (2007). Assessing the Relationship between Human Capital and Firm Performance: Evidence From Technology-based New Ventures. *Entrepreneurship Theory and Practice*, 31 (6), 893-907
- Smallbone, D., & Wyer, P. (2006). Growth and Development in the small business. In *Enterprise and the Small Business*, eds. S. Carter and D. Jones-Evan. London: Prentice Hall.
- Stevenson, L., & St-Onge, A. (2005). Support for Growth-oriented Women Entrepreneurs in Tanzania. Programme on Boosting Employment through Small Enterprise Development Job Creation and Enterprise Department. International Labour Office, Geneva and Private Sector Department (OPSD) African Development Bank (AfDB), Tunis
- Subrahmanya, M.H.B., Mathirajan, M., & Krishnaswamy, K.N. (2010). Importance of Technological Innovation for SME Growth: Evidence from India Working Paper, UNU-WIDER.



- Tambunan, T.T.H. (2006) Development of Small and Medium Enterprises in Indonesia from the Asia-Pacific Perspective. LPFE-Usakti, Jakarta.
- Tambunan, T.T.H. (2007). Entrepreneurship Development in Developing Countries. New Delhi: Academic Excellence.
- Tambunan T.T.H. (2009). Women entrepreneurship in Asian developing countries: Their development and main constraints. *Journal of Development and Agricultural Economics*, 1(2), 27-40
- Tambunan, T.T. H. (2011). Development of small and medium enterprises in a developing country: The Indonesian case. [\*Journal of Enterprising Communities: People and Places in the Global Economy\*](#), 5(1), 68-82
- Teixeira, A., & Fortuna, N. (2004). Human capital, innovation capability and economic growth in Portugal, 1960-2001. *Portuguese Economic Journal*, 3(3), 205 – 225
- Tidd, J., Bessant, J. & Pavitt, K. (1997). Managing Innovation: Integrating Technological, Market and Organizational Change. Chichester, New York: John Wiley.
- Timothy, J.G. (1997). Making Strategy Work: Building Sustainable Growth Capability. San Francisco: Jossey-Bass
- Trott, P. (2005). *Innovation Management and New Product Development*. Prentice Hall.
- UNDP (2007). Malaysia: Small and Medium Enterprises, Building an Enabling Environment. United Nations Development Programme
- U.S. Congress (1995). Innovation and Commercialization of Emerging Technologies. Office of Technology Assessment, OTA-BP-ITC-165 (Washington, DC: U.S. Government Printing Office, September).
- Uzzi, B. (1997). Social Structure and Competition in Inter-firm Networks: The Paradox of Embeddedness. *Administrative Science Quarterly*, 42, 35–67
- Venkataraman, S. (2004). Regional transformation through technological entrepreneurship. *Journal of Business Venturing*, 19, 153–167
- Wadhwa, V. (2010). Addressing the Dearth of Female Entrepreneurs. Bloomberg Business week.
- Wang, X., Manry, D., & Wandler, S. (2010). The Impact of Government Ownership on Dividend Policy in China. Working Paper, University of New Orleans.
- Weerawardena, J. (2003). The Role of Marketing Capability in Innovation – Based Competitive Strategy. *Journal of Strategy Marketing*, 11, 15-35
- Westlund, H., & Bolton, R. (2003). Local social capital and entrepreneurship. *Small Business Economics*, 21(2), 77–112
- Wright, M., Hmieleski, K.M., Siegel, D.S., & Ensley, M.D. (2007). The role of human capital in technological entrepreneurship. *Entrepreneurship, theory and Practice*, 31(6), 791-806
- Yip, U.Y. (2000). Financial Risk Tolerance: A State or a Trait? MS. Dissertation, The University of New South Wales.
- Yoffie, D.B., & Cusumano, M.A. (1999). Judo Strategy: the competitive dynamics of internet time. *Harvard Business Review*, (January–February), 71–91
- Yokakul, N., Girma, Z., & Booth, P. (2011). The knowledge sphere, social capital and growth of indigenous knowledge-based SMEs in the Thai dessert industry. [\*Science and Public Policy\*](#), 38(1), 19-29

Yu, Z., & Yanfei, W. (2009). The Strategic Role of Innovative Capabilities in the Relationship among Social Capital, Knowledge Sharing and Firm Performance. *Management and Service science*, September, 1-4

Yuanjian, Q., Feiyue, Z., & Hongchuang, L. (2011). Research on the Critical Success Factors of Advanced Manufacturing Services in Hubei Province of China. *Paper presented at 7th International Conference on Innovation & Management*, 438-443