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Blockchain technology: the 3rd information revolution?

Direct democracy is a form of democracy that was practiced in ancient times in Polis (or City-States) in Greece known as “Pure Democracy”. It differs from the “Representative Democracy”, the major form of modern society democracies. The main difference between the two is that the former has no “representatives”, while the latter has them elected by citizens. As electing representatives has been astronomically expensive and burdensome to national budgets, people have been hoping to eliminate representatives in systems as appropriate. More than anything else, people have been hoping to participate in deliberating political issues directly by themselves, should the conditions are met, such as time and the relevant systems are available. If possible, they can catch the two birds at one stone by participating in the political issues directly as well as minimizing the election costs.

Blockchain technology might offer a solution to the issue of eliminating representatives or central organizations in the society, such as financing, networking and even governmental systems. Especially in information technologies, what if people could use a system without a central authorizing institution for financial transactions? People do not need to pay the transfer charges to intermediating banks by using virtual currencies such as Bitcoins (Nakamoto). This system also does not need to care about the Internet Corporation for Assigned Names and Numbers (ICANN) anymore, as it is not necessary to control over the internet addresses (ICANN, 1998). And this could be also a hacking free network (Ahn). On October 31, 2008, a person who identified himself as Nakamoto released a paper “A Peer-to-Peer Electronic Cash System”, on The Cryptography Mailing list at www.metzdowd.com, explaining a peer-to-peer version of electronic cash. Nakamoto introduced Bitcoin that initiated the network and the first units of a cryptocurrency, now known as Bitcoins. As of December 10, 2016, Nakamoto’s known addresses contain roughly one million Bitcoins equivalent of around U$922m (Nakamoto; Block chain.info/chart). As of the date, Bitcoin users were reached 484,668 members withholding 189,820,174 Bitcoins on hands. In a nutshell, Bitcoin is not only a vast success but also challenges the financial industry from its foundation.

The impact of Bitcoin to the modern society is amplified by Blockchain which is originally designed to support Bitcoins. It enables Bitcoin by effectively and successfully protecting from numerous kinds of malicious attempts of tampering and revision. It did not take long for people to realize that Blockchain could be applied in many different business aspects of modern society, such as financial transactions, business, IoT, networking, governmental systems, military and many other areas; it might bring human beings with the third information revolution in the future after the second information revolution of internet.
Blockchain is a specific type of Distributed Ledger Technology (DLT) and a way of representing transactions in P2P networks into blocks. Distributed ledger means that no single centralized authority, as known as a trusted third party (i.e. clearinghouse, escrow service, national registry, etc.) authenticates and executes transactions. Instead, some or all participating members (or computer nodes) in a network are engaged to verify each and every transaction and to agree to it without a middleman.

The fact that DLT requires no middle man for a transaction opens up a whole new world of business: a business contract may be entered and autonomously executed with DLT. Such a business contract (also known as Smart Contract) may be extended to a business organization and make it to be purely algorithmic and autonomous. To make it short, Smart Contract enables a business organization with its bylaws written with a script programming language developed only for Smart Contract. A business with Smart Contract is purely autonomous and therefore called a Decentralized Autonomous Organization (DAO). There are about 330 DAOs in the world right now, sprung up in the year 2016 alone.

In this age of such rapid changes in technology, the APJIE is willing to take an initiative action in publishing the next volume of the APJIE 11, No. 3, a special issue on this topic in December 2017. The grand theme of the special issue is on the “Challenges and Changes in the Age of Smart Contracts”.

The APJIE Desk, in pursuit of the goal achievement, adopted six sub-themes for the special issue including:

1. Decentralized Automated Organizations (DAO) and Changes in Business.
2. Decentralized Applications (DApps) and Business Development.
3. Landscape Changes of Entrepreneurship and Business by DLT.
5. DLT in Capital Markets and Entrepreneurship.

The APJIE will organize an international conference under the grand theme of “Challenges and Changes in the Age of Smart Contracts”, which will be officially announced under separate cover. The APJIE Desk sincerely wishes that the publication of the special issue and holding an international conference on the themes would contribute to the development of advanced technologies as well as many new applications of the technologies in the fields to improve the quality of human life.

Finally, the APJIE Desk is very happy to announce that Professor Benjamin Yuan, National Chiao Tung University, Taiwan, and Professor Yuli Zhang, Dean of Business School, Nankai University, China, were invited to join the board of associate editors of the APJIE.

Bong Jin Cho  
PhD, Editor in Chief

Sun Young Park  
PhD, Co Editor in Chief

References
Block chain.info/chart, on January 7, 2017, one Bitcoin was equivalent to US$1127, while on January 22, 2017, one Bitcoin was worth equivalent to US$922.


Satoshi Nakamoto is recognized as an Australian former academic, Craig Steven Wright, however, it was never confirmed by himself. Please refer to the (http://en.wikipedia.org/wiki/Satoshi_Nakamoto), pp. 3-5.

Additional readings

DAOs, DACs, DAs and More: An Incomplete Terminology Guide – Ethereum Blog.

Decentralized Autonomous Organization to Automate Governance, Final Draft – Under Review by Christoph Jentzsch Founder & CTO Slock.it, CHRISTOPH.JENTZSCH@SLOCK.IT.

Strategic challenges of outsourcing innovation in global market

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Abstract

Purpose – The purpose of this study is to theoretically clarify under which circumstances MNCs should outsource the innovation function. In the globalization era, multinational companies (MNCs) face the challenge of making a strategic decision. They ought to adjudicate upon outsourcing the research and development, i.e. innovation function and bearing the risks of it, or keeping innovation function in house and paying the price of this decision. This decision becomes more crucial when the host country has dissimilar characteristic and high uncertainty compared to the home country.

Design/methodology/approach – This study is among the very first studies that evaluate the issue of outsourcing innovation for MNCs from a transaction cost economics (TCE) theoretical perspective. By setting forward propositions that serve as a guideline for conditions in which MNCs should outsource innovation, this paper contributes to innovation, new product development, global business and, last but not least, to the TCE literature. This study also provides managerial implications and avenues of future research for academicians.

Findings – This study shows that heterogeneity between the home and host country affects the autonomy of the innovation at the host country; this autonomy in turn leads to higher transaction cost, and finally, transaction cost is the main determinant of the decision on whether to outsource the innovation.

Originality/value – This study fills this gap by looking at the problem of outsourcing innovation from a TCE theoretical perspective and, based on an extensive literature review, puts forward a set of propositions that clarify under which circumstances MNCs should outsource the innovation function.

Keywords Outsourcing, Innovation, Cultural distance, Offshoring, Transaction cost economics, Governance

Paper type Research paper

Introduction

Innovation is a key element for organizational survival in the volatile environment (Damanpour and Aravind, 2012; Harper, 2015; Han et al., 1998; Damanpour and Evan, 1984; Drucker, 1954). Innovation derives from both a competitive process in market and a source of responding to a market (Hunt and Morgan, 1996), as well as through proactive managerial force wherein firms work to be first movers. Various studies (Ngo and O’Cass, 2013; George et al., 2012; Ariss and Saboori-Deilami, 2012; Baregheh et al., 2009; Brown and Eisenhardt, 1997; Barney, 1991) suggest that innovation is one of the core activities of a firm’s

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competitive advantage. Through innovative activities, a firm pursues profits from a market, as the resultant innovative market offerings allow a firm to position itself superior to the competitors in the market and to acquire favorable financial profits. As more and more markets have become online in the global market and multinational companies (MNCs) have reached to new corners of the globe in light of the global market environment, they have come to experience in increasing number of new challenges in governing their innovation.

The strategic challenge for an MNC is determining how to effectively structure the governance its innovation in global market. Transaction cost economics (TCE) would be an effective framework for understanding governance of innovation in a cost context. Under the view of TCE, a MNC may fully control its innovation by keeping it in-house or use the market mechanism to outsource its innovation. Furthermore, this study suggests that the concept of the cultural distance as an important factor to understand firm’s governance decision.

This study intends to answer this main question:

Q1. In the case that a firm located its innovation in a highly heterogeneous foreign market, if high transaction costs are caused by the distance and discretion of its innovation, should the firm outsource its innovation function to the third party of the host country?

By answering this question, two contributions will be made:

1. this study suggests TC as a strategic determinant for governance decision of innovation function of a MNC; and
2. this study makes a strong connection framework of distance–discretion–transaction costs.

Background literature

Offshoring innovation
Internationalization of R&D is not the recently occurred issue. For instance, in the 1930s, the largest European and US firms located about 7 per cent of their R&D abroad, and the proportion has steadily increased, since the 1960s, in technologically intensive industries (Teece, 2014; Cantwell, 1995). Also, offshoring of such knowledge work was an emerging business practice of particular importance (Manning, 2013; Horvit, 2004). According to Lewin et al. (2009), offshoring refers to “the process of sourcing and coordinating tasks and business functions across national borders” and “to sourcing rather than sales activities, and it supports global or domestic rather than local operations”.

Some reasons of offshoring innovation which are related with product development activities are securing strategic advantages (Holmes et al., 2013; Delios and Henisz, 2003) and accessing to skilled workforces (D’Agostino et al., 2013; Ernst, 2006; Thursby and Thursby, 2006). Moreover, it allows a firm to have an access to local knowledge not readily available at home, and to learn complementary technologies (Kalinic et al., 2014; Florida, 1997; Zander, 2002). Some examples of motivations for small-sized entrepreneurial firms are the need to grow, or speed to market, or survival (Kenney et al., 2013; Dossani and Kenney, 2007; Rangan and Schumacher, 2006). Dunning (1993) identified three motives for developing foreign operations (market seeking, resource seeking and efficiency seeking).

Outsourcing innovation
Within many industries such as aerospace and software, product development has been fundamentally deemed as a function that is dispersed across collaborating firms (Dahan and
John 2002; Quinn, 2000). Relationships with suppliers associated with new product
development are different from those of typical channel (e.g. material supply, distribution),
partially due to the requirement of considerable degree of creativity from external suppliers
(Soukhoroikova et al., 2012; Carson, 2007). Furthermore, Carson (2007) found that “the
creative nature of the task negatively moderates the relationship between ex post client
control and supplier performance”. And:

[...] the protection of creativity is an important governance objective even in inter-organizational
relationships, in which the risk of opportunism might otherwise prompt firms to retain tight
control of external suppliers.

Some potential advantages and motivations behind outsourcing are higher returns on
investment, cost savings (e.g. development costs), shortened time to market, lower employee
requirement, improvement in flexibility and accessibility to the specialized resources, skills
and creativity of external suppliers (Gobble, 2013; Chesbrough and Teece, 1996; Deutsch,
2004; Linder, 2004; Lynch, 2004; Dahan and John, 2002; Quinn, 2000). However, outsourcing
innovation might result in Imitation and substitution of core competencies, and opening the
market to new entrants (Scott and Davis, 2015; Porter, 1980; Piachaud, 2005).

For instance, a third-party supplier or a collaborating firm might have unique or specific
knowledge which is a source for innovation activities and is difficult to acquire. Some
studies argued that acquiring knowledge skill through collaboration has been considered an
effective and efficient way of successful innovation (Holt, 2013; Adams et al., 1998; Moorman
and Rust, 1999; Madhavan and Grover, 1998; Li and Calantone, 1998; Han et al., 1998;
Cooper, 1992). Cavusgil et al. (2003) suggested that, among two types of knowledge (explicit
and tacit), because tacit knowledge is not equivalently available across competitors,
obtaining such knowledge from outside the firm is an efficient way to improve innovation
capability. In addition, they consider the pressure from market and technological changes,
reasons why innovation gets more costly and risky; therefore, knowledge from partners and
improved innovation capability could reduce costs of innovation, shorten the development
cycle and achieve effective innovation. Quinn (2000) discussed that common reasons
companies of any size are increasingly benefiting from outsourcing particular aspects of
innovation are resource limits, specialist talents and multiple risks.

In some of cases, MNCs may outsource their innovation function to the third-party
suppliers to take advantage of high-quality workforces, lower labor costs and accessibility
to foreign markets. Calantone and Stanko (2007) showed some examples of outsourcing
innovation in their article which seeks drivers of outsourced innovation; P&G is targeting to
increase the proportion of new ideas generated from outside of the company from 20 to 50
per cent by 2010 (“Connect and Develop”) (Berchicci, 2013; Calantone and Stanko, 2007;
Carson, 2007); designs for Dell are mostly not from in-house for its offerings; Hewlett-
Packard develop new products with partner firms; GlaxoSmithKline and Eli Lilly outsource
new product research on the purpose of cost savings. Calantone and Stanko (2007) found
that elements such as, profit margin, employee sales efficiency (in short term) and inventory
turnover (negatively) are related with the propensity of a firm to outsource innovation
activities.

Offshore-outsourcing innovation

MNCs can choose offshore-outsourcing either as a contingent strategy of new product
development plan or as an onset strategy of new product development. A fairly broad
deinition of offshore-outsourcing is “a firm’s delegation of in-house value chain activities
to independent suppliers located in low-cost environments outside its home country”
MNCs have outsourced and built close supplier relationships in offshore market for their capabilities of innovation (new product development) and strategic flexibility (Carson, 2007; Kotabe and Murray, 1990; Yalcinkaya et al., 2007). Also, offshore-outsourcing creates avenues for inter-firm learning and provides for global leverage (Griffith et al., 2009).

Partnerships with offshore suppliers for new product development allow buyers to have the following advantages: the ability to increase product variety; decrease of necessary resources for new product development; cost reduction rusted from bringing new products into a market; high velocity of the introduction of innovative products to a market; increased efficiency of R&D; greater depth and width of knowledge; improved quality and reliability; focus on core activities; and stimulating internal R&D (Schmeisser, 2013; Griffith et al., 2009; Paju, 2007).

Nonetheless, there are disadvantages or risks that MNCs should be aware of, namely, supplier–buyer dependence, leakage of tacit know-how, loss of knowledge-based capabilities, loss of direct control over main value-added activities, increased cognitive distance to new partners, unexpected costs occurrences, loss of competitive edge and limiting the provider’s innovativeness (Schmeisser, 2013; Heide and Weiss, 1995; Stremersch et al., 2003; Maskell et al., 2007; Paju, 2007). However, recent literatures have not really argued or addressed the process issue related to dynamic and/or change in governance, over time. TCE will provide an effective theoretical framework for understanding governance in a cost context.

Governance: transaction cost economics

TCE works to explain how firms set boundaries on activities (Williamson and Ghani, 2012; Williamson, 1975). TCE divides uncertainty into two categories which are environmental and behavioral. Environmental uncertainty is to be featured by unpredictability of surroundings of exchange (Anderson, 1988; Heide and John, 1990). Behavioral uncertainty has been conceptualized as the degree of difficulty associated with assessing the performance of transaction partners (Rindfleisch and Jan, 1997, p. 43). The last aspect of TCE is frequency of transaction. Williamson (1985) posited that if a transaction is likely to occur frequently, firms are benefited by internalization of the activity; in that, involved costs are offset with the frequent recurrence of the activity. Before taking a look distance, issues of offshore-outsourcing in the view of TCE which was treated in previous studies are discussed.

According to TCE, if the performance of specific activities of a firm through the market results in prohibitive transaction costs which exceed the costs which is occurred from the performance of the same activities inside a firm, a firm prefers to internalize those activities. On the other hand, in the case that the transaction costs of performing strategic activities through the market are lower than inside a firm, the exploitation of market governance is favorable (Williamson and Ghani, 2012; Williamson, 1975, 1985).

Transaction costs are categorized into three problems, in terms of opportunism and bounded rationality because transaction-specific assets are involved in the exchange, environmental uncertainty causes inability to clarify surrounding conditions of an exchange and behavioral uncertainty of the exchange partner can be directly or indirectly linked to unwanted additional costs. For the first, adaptation costs refer to the difficulty in modifying contracts when conditions vary. For example, a firm might choose the internalization, in lieu of taking a risk of unwanted costs (e.g. penalty), in the case that there is high probability of modifications of contracts or agreements (Ulset, 1996). Second, according to Pisano (1990), safeguarding costs demonstrates the cost which is caused by the opportunistic action of an
exchange partner after making investments in relationship. The last is measurement costs that are occurred in verification of the completion or fulfillment of contracts as specified (Calantone and Stanko, 2007).

Product development relationship with an outsourced supplier might be highly transaction specific, so the investment into the relationship involves the risk of ex post opportunistic behaviors from an outsourced supplier (Pisano, 1990; Ulset, 1996; Anderson, 1988; Rindfleisch and Jan, 1997).

Heide and John (1990) defined control in the any situation where a firm has authority or influence on decision by another firm. Carson (2007) suggested that there are two primary forms of control in product development relationships. First, ex ante control which is measured by the detail and comprehensiveness of contractual specifications issued for the supplier’s work governs development relationships. The second is ex post client control (e.g. monitoring, reporting requirements) that is ongoing control, during the performance of supplier’s work. Because uncertain and unfolding propensity of development tasks (Pisano, 1990) obstructs perfect anticipation of future situations, ex post control mechanism partakes of ex ante contracts. Associated with control issue, Robinson and Toby (2003) argued that the level of ex post control is relying on mostly ex ante agreements.

In sum, TCE argues that the relationship which results from outsourcing of product development should be controlled with relatively high extent to safeguard the transaction specific investments of the outsourcing firm, in that, this is mostly one-sided investment pattern (Williamson and Ghani, 2012; Williamson, 1985).

There are two different views:

1. Environment uncertainty is positively related with ex post but negatively with ex ante, due to incompleteness of a contract to promptly response to variances of a market. In other words, more frequent modification or adjustment in a contract, higher risk of opportunistic behavior, and then stronger control (ex post) for safeguarding investments; and

2. On the contrary, some other studies (Crocker and Kenneth, 1993; Galbraith, 1977) argue that the outsourcing firm should decrease the level of control (ex post) to acquire strategic flexibility and smooth information processing.

Carson (2007) concluded with own study that:

[...] the creative nature of the task appears to be a more significant consideration in predicting inter-organizational governance arrangements in these models, and clients may sacrifice some level of safeguarding to protect the supplier’s ability to perform creative tasks.

Distance
Cultural distance is one of major cost factors and of the most complicated elements, in international business. In the decision of entry mode for a firm, the concept of distance is related with transaction costs; in other words, the greater distance leads to the higher costs, due to the cost of information, and the difficulty of transferring competencies and skills (Sousa and Bradley, 2008). In other words, costs result from high level of environmental and behavioral uncertainties. According to Sousa and Bradley (2008, p. 469), if a firm goes to the country which has similar (low distance between home and host countries) cultural traits or norms, the information-acquisition costs are close to zero. This is also counted in the issue of sourcing; that is, it is one of the factors which increase threat or risk of offshore-outsourcing of innovation for a firm (Griffith et al., 2009).
In general, “distance” has two levels; the one is cultural distance (national level), and the other is psychic distance (individual level). According to Johanson and Vahlne (1977, p. 24), psychic distance is “the sum of factors preventing the flow of information to and from the market”. Later, some studies argue that psychic distance is to be perceived at individual level and should be measured at that level, and the revised definition is suggested. For example, Sousa and Bradley (2008) distinguished the psychic distance concept which refers to “Individual’s perception of the differences between the home country and the foreign country” from the cultural distance concept which is depicted as “the degree to which cultural values in one country and different from those in another country” and which has applied to national level assessment. Moreover, they introduced and postulated that psychic distance is influenced by cultural distance.

Dow and Larimo (2009) argued that many sources of distance construct have been overlooked in studies and that international experience should be concerned, in lieu of general experience. In particular, they brought three more elements (i.e. language distance, institutional distance and other forms of distance) on the top of national cultural distance (Hofstede’s national cultural dimensions), as psychic distance stimuli (say, national-level exogenous differences). As studied so far, distance is to be determined by various elements; some are explicit (e.g. language, political/legal system) but others are implicit (e.g. moral code); or some are observable but others are unobservable. At times, elements might take somewhat ambiguous positions. For example, for language, the problem could be occurred due to differences in ways of saying. In Japan and Korea, often times, positive answer can mean totally opposite meaning.

This article makes such arguments (similar with ones from Dow and Larimo, 2009) that, in the process of decision-making by managers, perceptions over individual level perceptions over environments are to be based, and that perceived individual level distance is influenced by aspects of national level distance that are psychic distance stimuli.

**Propositions**

**Relationship between distance and autonomy**

Firm’s innovation is usually located in the vicinity of its targeting markets; owing to have quick updates of market information that involves customers (e.g. tastes and preferences) and competitors (e.g. new product launching, new technology, comparatively advantageous resources) and then to promptly and strategically respond to variances of markets. Host country in which firm’s innovation is located might be culturally homogeneous or heterogeneous with home country. However, because it is impossible to be perfectly homogeneous or heterogeneous to each other, what matters is the extent of heterogeneity in elements of distance (e.g. language, religion, industrial development, education, political system, etc.).

Noting that market information is indispensable and a crucial element for the innovative function of the firm, the greater the heterogeneity that exists between the location of the innovation and the home market, the greater advantage to the MNC of its internationally located innovation. However, the extent of heterogeneity of distance has the positive relation with the level of uncertainty (environmental and behavioral). Suppose that an MNC has full responsibility and authority over its innovation and high level of distance exists. The high level of distance between home and host country would result in highly market-specific information and high environmental and behavioral uncertainty; therefore, by a headquarter having full control, potential problems occur. To have flexible and quick strategic responses to market (e.g. product reconfiguration, new product launching) is evident to be profitable and successful in a market. In
proposed market state, processing market information to making strategic decision would be costly in light of money and time, due to high probability of misunderstanding information, difficulty in deciphering information, time-consuming reporting process, etc. Ultimately, to reduce unwanted costs and be profitable in global market, the certain level of autonomy on innovation function to its outsourcing party (i.e. less control) needs to be granted:

\[ P1. \] The level of heterogeneity in national-level differences (psychic distance stimuli) is positively related to the level of autonomy to the outsourcing third party.

**Relationship between autonomy and transaction costs**

Whereas, the granted autonomy enables a firm to make astute responses to variances of a market, increased autonomy also increases its transaction costs. The logic underlying this is that increased transactions costs arise from increased environmental uncertainty of a market (more limited information) and increased probability of behavioral uncertainty of its partner (opportunistic behaviors) as the firm grants greater levels of autonomy. To overcome environmental uncertainty in a given market, how to monitor partner’s activities and what is appropriate level of monitoring are important issues. To decrease the level of behavioral uncertainty, along with monitoring, appropriate evaluation and reward mechanisms are evident. Those caused additional efforts in time and money might be invested into more effective and efficient strategic actions:

\[ P2. \] The level of autonomy of innovation centers is positively related to the level of transaction costs.

**Relationship between transaction cost and outsourcing**

Overall, TCE explicates how a firm organizes its outset of outsourcing, by using the extent of transaction-specific investments and the uncertainty from bounded rationality of a firm and opportunism of a supplier (Griffith et al., 2009). High level of TC caused by given discretion makes a firm impossible to keep benefits from new product development and strategic flexibility in a given market. This article argues that outsourcing firm’s innovation to the third supplier will reduce the level of TC and give a firm better effectiveness and efficiency in new product development by partnering with the third party. Then, the next question is “what will be advantages and disadvantages, in the view of TCE”. As discussed in the earlier section, by outsourcing innovation, newly contracted partnership help a firm increase new product assortment, decrease resource necessity, improve the velocity of new product introduction, acquire new knowledge and technology, reduce costs of new product development (which includes increased TC by distance and autonomy) and improve quality and reliability in the market. However, the extent of dependency of buyer to supplier is related with the extent of transaction-specificity with the level of investment which is usually unilateral in this case. Due to high level of transaction-specificity, there is the probability of unfavorable ex post opportunistic behaviors from a supplier; therefore, to safeguard buyer’s investment, ex post control is necessary. In addition, there are other disadvantages (risks or threats), such as lose of direct control toward activities of new product development, leakage of tacit knowledge, occurrences of unexpected costs, etc. However, by using appropriate level of ex ante and ex post control, building strong relationship with partner, most of risks or threats might be neutralized. Also, in this case of offshore-outsourcing of product development, a firm’s past experience and information
might enable the firm to release some degree of bounded rationality and environmental uncertainty:

\[ P3. \] The level of transaction costs is positively related with the decision of outsourcing of innovation centers (Figure 1).

### Discussion

As addressed, the main issue of this study is that, when MNC’s innovation is located in a country where highly heterogeneous traits from home country are seen and also certain discretion of innovation function is necessary, whether a firm is better to outsource the innovation function not to have high level of TC. Noting that market information is indispensable and a crucial element for MNC’s innovation, the greater the heterogeneity that exists between the host country and the home market, the greater the advantage to the MNC with locating its innovation in host country. However, the extent of heterogeneity of distance has a positive relation with the level of uncertainty (environmental and behavioral) and the level of specificity of market information. Ultimately, to reduce unwanted costs and be profitable in global market, a headquarter should grant certain level of autonomy to ICs; hence, the greater distance, MNC’s headquarter less desire the full control on innovation function in its host country. Whereas, the granted autonomy to locally situated innovation enables it to make astute responses to variance in host country market, and its transactions costs will be also increased which is to be caused by the increased level of environmental and behavioral uncertainty. Finally, it is argued that if MNC’s innovation is located in a highly heterogeneous host country market and the level of discretion of innovation is to be increased, the MNC will make governance decision of innovation (i.e. whether its innovation function is outsourced to a third-party supplier situated in host country market.). This study, in the deeper sense, extended the ramification of TCE on specific issue of offshore-outsourcing of MNC’s innovation function. Also, for managers who are charge of innovation, the general idea will be a useful normative guideline for making the sourcing decisions.

![Figure 1](image_url)

**Notes:** The level of global focus refers to whether a firm’s goal is more globally focused than locally focused or vice versa; value of innovation refers to the relative importance of a function of product which is going to be developed to other remaining function of a product; industry trend is determined here from change in competition intensity and change in consumers’ needs and taste.
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Cultivating entrepreneurial behaviour: entrepreneurship education in secondary schools

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Abstract

Purpose – The purpose of this paper was to investigate the degree to which Entrepreneurship Education (EE) was being provided to secondary school students following changes to the Secondary School Curriculum in 2010 by the New Zealand Ministry of Education. Under these changes, secondary schools were charged with following an “entrepreneurial” approach to school instruction that would develop entrepreneurial behaviors in students.

Design/methodology/approach – The study used a qualitative methodology focused on gauging the reaction by teachers, students and their parents to this new teaching approach. The sample comprised ten secondary schools situated in Northland, New Zealand. A series of focus groups were used to solicit data among three levels under study in each school, i.e. teachers, students and parents. Individual semi-structured interviews were used to collect data from school principals to determine overall reactions to EE by the rest of the school.

Findings – Teachers reported benefits in terms of reduced direct teaching workload, increased participation from students and significantly improved scholastic results compared to targets set in the curriculum. Students reported positively on the greater degree of flexibility allowed under this teaching approach, while parents reported changes in attitude and more engagement in school activities and projects.

Research implications – The continuing evolution of classroom education at secondary school level has long-term repercussions for student learning, engagement and retention as we move to the digital age. Similarly, there are also consequences for the evolving role of teaching, curriculum design and delivery.

Originality/value – The value of this research lies in a closer examination of the effects traditional teaching practices have had on secondary students entering the digital age. Furthermore, it investigates an alternative teaching approach through EE and the impact it has on student learning, retention and engagement.

Keywords Engagement, Education, Entrepreneurship, Student retention, Entrepreneurial behaviour, Teacher facilitation

Paper type Research paper

Introduction

Entrepreneurship Education (EE) is not a new concept. From the early 1980s in New Zealand and throughout the world, Western governments recognized that an entrepreneurial orientation may lead to economic growth, job creation, international competitiveness and technological advancement (Jack and Anderson, 1999; Audretsch...
EE has met with varying degrees of success suggesting that not only is there no one single approach to achieving an Entrepreneurial community through EE but also there are other variables at work about which little is known. These can significantly influence the success or failure of building a community based on a philosophy and practice of entrepreneurship. One such variable is “culture”, perhaps the most difficult of all to influence and adapt. The reference to culture in the context of this study is an important one, particularly when consideration is given to the profound impact that EE has had on the secondary schooling system. The custodians of community culture are its educators, those tasked with perpetuating the values of a community through the provision of education. To build an entrepreneurial community, it is necessary to fundamentally alter traditional strategies and teaching methods in such a way that learning takes on new meaning, not only for students but also for other community stakeholders as well.

Programs specifically focused on a narrow portion of the population with defined outcomes introduced over short time frames do not succeed in making the “gut wrenching” and pervasive cultural shifts required to improve an organization’s or a community’s overall performance (Armstrong, 2011). To bring this into an education context, programs such as Young Enterprise Scheme (YES), Young Entrepreneurs Program (YEP), Biz4Kids and so on are good examples of programmatic adaptation. They are successful tools for generating momentum, but they lack fundamental appeal at a broad cultural level. Their specific focus on subjects such as economics, accounting, finance and business practice often reinforce the view held by many of this study’s participants that they are finite, strictly business-oriented programs, “designed to capture those few talented individuals with a flair for entrepreneurial behavior” (Holmes, 2005).

The creation of an entrepreneurial community or an entrepreneurial school cannot be achieved solely by introducing EE. The formula for successful cultural adaptation to “Entrepreneurship” lies in participation, inclusion, sharing and support across all community stakeholder groups. These factors were found to be key considerations of the EE project team at implementation. EE follows a specific process, shared by many successful organizations throughout the world, by focusing stakeholders and teachers on problems associated with education, skills shortages, community needs, economic decline, relevant learning, pupil stimulation and community sustainability. EE specifically diverts attention away from culture and focuses on shared problems occurring in the community and in education. This process encourages students to explore creative solutions through a structured framework. The biggest barrier to successful cultural adaptation is the prevailing culture itself – leave it alone and it successfully adapts of its own accord, challenge it and often insurmountable problems occur.

The successes encountered in this study through EE have been the result of three primary factors:
firstly, each school where the project had been initiated had a clearly defined vision of what EE should be and the results it should deliver;

secondly, leadership in those schools facilitated the inclusive formulation of a joint strategy that involved all community stakeholders; and

third an incremental implementation process was used that invited and encouraged participation from key community stakeholders, professional teaching staff and the students themselves.

In the relatively short period since the implementation of this project, school principals, teachers, students and parents have reported significant positive results by way of improved student attitude and behavior, renewed teaching enthusiasm and closer positive relationships within their immediate community. Most schools report that EE has been about bringing an entrepreneurial spirit into the school. Others have seemingly been engaged in the process of entrepreneurship for a number of years and rightly claim, that their success as an institution is largely founded on principles and values associated with an entrepreneurial culture. Still others have strenuously emphasized that EE should not be seen as a destination but as a journey toward introducing continuous, innovative improvements in teaching practice.

The primary objective of this study was to conduct an initial analysis of the dynamics, effectiveness and benefits of EE at selected secondary schools. Seven secondary schools were selected in the North Island of New Zealand to participate in this study. These schools have all been involved in EE to varying degrees over the past three years. Many of these schools have also participated in other enterprise development programs such as the YES, YEP and the GATEWAY program. School personnel comprising principals, staff and students were interviewed or participated in focus group discussions. Members of community groups, student’s parents, local businesses and other interest groups were also engaged in the study. All comments, statements and opinions were given freely and anonymously. These contributions are acknowledged as representative of the larger community voice.

Entrepreneurship education in context

New Zealanders have a strong popular identification with the ideals of entrepreneurship. On at least two occasions, the Global Entrepreneurship Monitor (Reynolds et al., 2001, 2004) has placed New Zealand highly in total entrepreneurial activity. New Zealanders are told and encouraged through the popular press to buy into the paradigm. For example, the book by John et al. (1998), later made into a television series, celebrates the popular notion of the innovative nature that resides in the average New Zealander. The New Zealand School Curriculum for example has as one of its vision statements that students will be “Enterprising and entrepreneurial” (MOE, 2007, p. 8).

In 2007, the New Zealand Ministry of Education (MOE) released a draft secondary school curriculum which was intended to go some way to addressing the development of entrepreneurial talent. The vision of the School Curriculum was “for young people [to be developed] who will be creative, energetic and enterprising” (MOE, 2007, p. 8). In the curriculum, it was made clear that teachers in New Zealand High Schools would be expected to pursue programs of study that encouraged innovation and entrepreneurship. It has been acknowledged by several sources that entrepreneurial qualities can be developed through the education system (Gibb, 1987; Klapper, 2004).

While this study focuses specifically on EE, it also investigates the central role of educators in the development of entrepreneurial communities. The assumption is made that
the success of EE and achieving positive outcomes through entrepreneurial teaching cannot be accomplished through one single stakeholder. Rather, it is the key role of the educator and the promotion of education that should become the domain of the community at large. This is particularly relevant in local communities because they contain the socio-administrative structures and cultural background to facilitate the drawing together of diverse groups into strong entrepreneurial partnerships.

A sense of what might constitute “Entrepreneurship Education” can be developed by referring to definitions closely related to it, such as those which describe “learning communities”, for example:

A community in which business and industry; schools, colleges, universities; professional organizations and local government co-operate closely into making it a physically, economically, culturally and mentally pleasant place to live (Longworth, 1999, p. 6) or;

A learning community addresses the learning needs of its locality through partnership. It uses the strengths of social and institutional relationships to bring about cultural shifts in perceptions of the value of learning. Learning communities explicitly use “learning” as a way of promoting social cohesion, regeneration and economic development which involves all parts of the community (Yarnit, 2000, p. 3).

These are broad definitions based on a belief and, more fundamentally, on a culture that lifelong learning, community partnerships and economic growth are mutually inclusive and socially desirable objectives (Porter, 2005).

At a more focused level the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA, 2002) in Australia, notes EE is:

[...] learning directed towards developing in young people those skills, competencies, understandings and attributes which equip them to be innovative, and to identify, create, initiate and successfully manage personal, community, business and work opportunities, including working for themselves (Erebus Consulting Partners, 2004, p. 1).

This is one useful starting point as a working definition of EE where contextual emphasis is placed on the importance afforded to “culture”.

The key themes emanating from these definitions indicate the importance of EE in developing close partnerships with multiple stakeholders. Education and its various institutions are central to the establishment and ongoing development of entrepreneurial communities. Indeed, research has shown that quality teaching practices (and by implication highly skilled teachers) are seen as an integral part of an entrepreneurial community (OECD, 2005, para. 5, cited in Porter, 2005). The literature on empirical growth positively correlates economic growth with education (Krueger and Lindahl, 2001). In particular, it specifies economic growth as a function of the initial level of education. Other important research findings suggest that education should change its focus from “teaching” to “learning” – something that would require a change in teaching practice, structures and culture (Freed, 2005). In contrast to the traditional education system, an entrepreneurial education system is strongly associated with diversity among individuals possessing different backgrounds, interests, opinions and qualities and with the ability to recognize opportunities in an uncertain environment. These differences are considered valuable, as variety is important for not only the efficient functioning of modern societies but also to make a contribution to economic growth (Verheul and Thurik, 2001). Although there is considerable debate about the extent to which entrepreneurial qualities can be taught, i.e. about the “teach-ability” of entrepreneurship, several authors agree that entrepreneurial qualities can be developed through education at an early age (Kourilsky and Hirshleifer,
A key underlying theme of the above definitions and other studies conducted in this area (OECD, 2005, cited in Porter, 2005) demonstrates that an “entrepreneurial” attitude and approach to education leads to greater social cohesion, learning and economic growth.

New Zealand’s track record in entrepreneurship education

New Zealand does not have a good track record of cultivating entrepreneurial behaviors in the formal education sector (GEM, 2004). Some initiatives aimed at encouraging entrepreneurial behavior have met with a degree of success but have not led to any reported, sustainable entrepreneurial behavior past formal schooling. The Entrepreneurship Teaching Project instituted in this study is a relatively new initiative following the changes made in the secondary school curriculum (MOE, 2007). It has demonstrated through several early successes that it has the potential to overcome the sustainability problem by strengthening the ties between formal education, community and business through the application of an entrepreneurial learning approach to secondary school cross-curricular delivery. The question arises whether this approach to learning, embedded in the culture of a school, can lead to the sustained development and practice of entrepreneurial behaviors across all subject areas, which deliver positive benefits to stakeholders in a specific community. In view of the above discussion and the evidence from this study, it is acknowledged that EE is not a programmatic initiative but rather one that progressively builds on previous successes in such a way as to become embedded in the cultural fabric of the school. The tangible successes, particularly in the area of entrepreneurial behavior, are widely acknowledged as having been supported by an entrepreneurial philosophy and approach.

The origins of new venture start-ups and entrepreneurship in New Zealand can be traced in several instances to a secondary school level particularly in the later stages of formal education (Forms 6 and 7) as students prepare to enter the world of work. The Global Entrepreneurship Monitor (GEM, 2004) criticizes the education sector in New Zealand for not doing enough to provide nascent entrepreneurs with the skills and knowledge necessary to develop new venture start-ups that will ultimately grow into successful enterprise.

Traditionally, the education system has generally inhibited, and may in fact have prevented, the development of nascent entrepreneurs because it teaches young people to obey, reproduce information and seek employment once completing school. Current teaching practice confines the development of entrepreneurial attitudes and behavior to the delivery of business-related subjects such as economics and accounting. There is also no high-level strategy in place that specifically focuses on integrating the elements associated with entrepreneurship into other subject areas in the secondary school system. By contrast, entrepreneurs tend to rely primarily on their own judgment, learn through making mistakes and create their own independent forms of work by using a wide range of skills and knowledge from various subject areas. Furthermore, the current education system focuses on developing critical and analytical thinking skills, whereas entrepreneurs rely heavily on their creative ability and heuristics (Kourilsky, 1990).

Teaching in entrepreneurship is equally underdeveloped at graduate and post graduate level in tertiary institutions. While many tertiary providers offer some development in entrepreneurship at a post graduate level, only one university attempts to build on this talent in a cohesive and meaningful way by offering entrepreneurship as a major topic in its undergraduate business degree. The consequence of programmatic initiatives, lack of formal strategy and the limited recognition of business subjects at secondary school level is a fragmented approach to developing those attitudes and behaviors necessary to sustain economic activity in communities. Furthermore, it results in the ad hoc identification of
entrepreneurial talent exiting the secondary school system and a disjointed approach to entrepreneurial development that does not allow for the expression of or participation in new venture creation. Those individuals that do display a flair for entrepreneurial activity are either lost to overseas opportunities or are simply absorbed into traditional employment options where such behaviors are not necessarily welcome.

Entrepreneurship education in Northland
Northland schools operate against a backdrop of small rural communities, comparatively high levels of unemployment, fewer job opportunities and a number of social imbalances that make good quality education a distant and sometimes unachievable goal for most families. A key factor contributing to higher than normal drop-out rates in Northland schools has been the question of “relevance”, i.e. teenagers in particular cannot see the relevance of their learning in a practical context because they believe it leads nowhere and will not secure them any future employment. This perception is, however, not limited to lower decile schools or pupils from difficult socio-economic backgrounds. Reasonably mature and intelligent students will share much the same attitude if they are not sufficiently stimulated or challenged. Whereas disadvantaged students cannot perceive the relevance of their studies, advantaged students become bored and end up experiencing the same social problems encountered by their disadvantaged colleagues.

Economically, the situation does not improve. Population demographics of Northland provide evidence of a high number of 15- to 19- and 50- to 69-year olds with most of the intervening ages either at university, overseas or at least working in the bigger cities where there are more job opportunities (www.stats.govt.nz). This is a sign of lagging economic growth and a lack of integration between businesses, education and other community groups. While Northland is an attractive tourist destination, it lacks overall vibrancy and opportunity as an economic investment destination because it still needs to determine what unique features it can use to attract entrepreneurs and a broader business base.

EE was introduced into Northland schools as a means of overcoming the lack of relevance and to stimulate flagging interest in school by encouraging partnerships with local business and community groups. EE is more than a relationship building tool. It is a culture with embedded entrepreneurship values which uses various methods to foster closer ties with local community, businesses, social agencies, local government and educational institutions. Cultural adaptation, as it was encountered in this study, is at best an arduous process that results in few successes. However, in its short history, EE has demonstrated a number of positive results indicating that educators, community groups, local business and enterprise agencies can work together to achieve better economic/social outcomes.

To place this study in the proper context, the assumption is made that schools with an integrated entrepreneurial orientation can be evaluated and placed on a continuum. An entrepreneurial school (and by extension a community) is characterized by energy and enthusiasm where its members are venturesome, resourceful, ambitious and are willing to take on new initiatives. A non-entrepreneurial school (and community) would be the exact opposite, characterized at the extreme by despair and inertia where its members have succumbed to an attitude of survival, are unimaginative, unmotivated and unwilling to jeopardize what little stability there is by taking on new projects. Consequently, entrepreneurship functions on a continuum with socio-economic success and full community engagement at one end and potential socio-economic collapse at the other. The schools
surveyed in this study have been labeled “A” through “G” and placed on this continuum (Figure 1).

The position of these schools on the continuum is based on an evaluation of the degree to which the school emphasizes EE in the delivery of the school curriculum and was primarily assessed along the following three broad dimensions:

1. the degree to which “entrepreneurship” is embedded in the school’s culture and how this is reflected in the school’s documented strategy;
2. the belief system (values) that drives an entrepreneurial culture and the degree to which this is behaviorally demonstrated throughout the school by teachers and pupils; and
3. the degree to which “entrepreneurship” has been integrated into the teaching/learning approach across all curricular subjects at secondary level.

As can be seen from the above figure, most of the surveyed schools tend toward the entrepreneurial side of the continuum, although no one school represents a full integration as would be intended by EE. The reasons preventing full integration are explored in greater depth below under common themes and concepts solicited during this study.

Goals and objectives of this study. The significant issues to be addressed in this study were whether EE was instrumental in not only generating positive changes in teaching practice, which lead to improved student behavior and attitude, but also whether the approach could be used across all subject areas, not just those related to business. The objective was to establish the effect these altered behaviors, attitudes and perceptions had on student retention, engagement and scholastic achievement.

The broad methodology used in this study was qualitative. A series of semi-structured interviews was combined with focus groups which provided evidence of common themes and concepts across several different categories of individuals currently engaged in EE. Information from these interviews strongly supports an EE approach in schools, and there is tangible evidence of improved student learning, motivation, attitudinal and behavioral adaptation among the studied population.

The primary goal of this research was to establish whether EE was a useful learning methodology for the delivery of cross-curricular secondary school teaching that leads to
benefits for all stakeholders in the community. Specific objectives of this study were as follows:

- to establish what changes in students’ and teachers’ behaviors had occurred since introducing EE;
- to establish whether there had been a shift in attitude among students toward school and learning, i.e. can students grasp the relevance of their learning and can they ably transfer this into applied outcomes which benefit themselves and their communities;
- to determine whether there had been a shift in teaching practice for “entrepreneurial” teachers as opposed to “non-entrepreneurial” teachers;
- to determine whether an entrepreneurial teaching approach led to improved learning outcomes for students; and
- to establish the degree to which entrepreneurship had been integrated into other subject areas throughout the school curriculum.

Research design
The broad thrust of this research was exploratory and based on qualitative techniques to uncover the underlying themes and concepts associated with EE at secondary school level. The theoretical position of this study is one of applied social research which is most commonly used to solve problems and explore specific phenomena within a social context. The findings of this study would ultimately be useful in compiling recommendations for educational institutions and may be used to further develop educational policy.

A number of concepts are associated with the notion of an EE approach. It was important to discover what these were, their underpinning themes and the consistency of their application across several diverse groupings. Once these were established, more rigorous testing using quantitative methodologies would be used in follow-up studies. This study followed three stages of development:

1. Data were gathered through semi-structured interviews and focus groups.
2. The findings were consolidated to establish common themes, notions and concepts.
3. Content analysis was used to establish trends and describe the characteristics of an EE approach.

Methodology and demographics
Seven schools located in Northland (as defined above) involved in EE formed the basis of this study. Four are decile 5 schools, and the balance, one each of deciles 6, 7 and 8. The total student roll for the seven schools amounts to 6,123 students of which 2,830 are boys and 3,304 are girls. Maori represent 24.7 per cent of the total population.

The source of information has come from those identified schools in the Northland area that have engaged in EE. Specifically, the study sought to gather information from school principals, teachers, students and parents associated with these schools. Participants were asked to consider their involvement with, and the effects of, the EE only. Other initiatives and programs were excluded from the interview process. Qualitative data from specific categories of school personnel were sourced as follows:
- **School principals:** The type of information sought at this level was aimed at establishing the degree of involvement/participation/sponsorship in EE; their perceptions of its efficacy in curriculum delivery; their role in the approach; and benefits that have accrued to the school from the outside community.

- **Entrepreneurial teachers:** Information sought from teachers involved in the process included; details of entrepreneurial delivery, frameworks and references, behavioral and attitudinal responses from students, obstacles encountered and how they were overcome, current difficulties in delivery and evidence of positive learning results.

- **School students:** Data sought from students included their perceptions of EE delivery, opinions concerning efficacy, assessment of behavioral and attitudinal change, evidence of improved learning outcomes and comparative comment on traditional delivery versus entrepreneurial delivery.

- **Parents:** Where possible, feedback from parents was used to verify data collected from students and teachers and to assess any attitudinal or behavioral changes outside the school environment.

Semi-structured interviews were used to collect data from school principals independently of the focus groups organized for the teachers, students and parents. Teachers and students not involved in EE were excluded from the interviews, as there was already sufficient comparative evidence available from the Education Review Office (part of the MOE) concerning traditional teaching methods and the results achieved through them.

**Common themes and concepts**

One of the most striking features encountered in this study with schools who have almost fully integrated EE into their curriculum delivery, was the level of “energy” displayed by students and teachers alike. Students, teachers and leaders in these schools display an enthusiasm and focused commitment that one rarely encounters in a large majority of educational institutions. Students are focused, concentrating on the task and virtually oblivious to outside interference. Teachers act as coaches and mentors, facilitating the learning process with students and demonstrating a passion for their subjects. Principals push everything else aside and freely enthuse about the refreshing changes and positive results they are gaining from an EE approach.

A second and no less important feature among students was their dedication to task and their focused commitment to achieving a superior result. What were particularly interesting were the increasingly consistent suggestions from students for ways of making EE more relevant to them and what they wanted from subjects other than business; as one music student put it:

> A few of my mates and I want to start a band, we all know how to read music and play instruments – how many more lessons do we need to do that? What we want to know is how do you go about setting a band up? What are some of the legal things we have to know? How can we protect the work? More importantly, how can we make money? How do we manage the finances? Where do we find contracts? How do we market ourselves? We want the music teacher to tell us these things – not make us play the same old stuff over and over again (Personal conversation, Holmes, 2005).

Clearly, a student at present starts from a radically different learning platform than those of five and perhaps even three years ago. They are more demanding, want challenging, stimulating projects to work on and want to exercise a measure of control over what they
engage in. This places enormous demands on the teacher, who must not only ensure that the required learning outcomes are met in accordance with the curriculum but also balance this with the demands for stimulation and challenge. Anecdotal evidence of this condition has been discovered at university, particularly among domestic students, where it was found that a significant number of students who could choose subjects within the confines of their degree would base their choice on who the lecturer was or who they had heard was the most stimulating and challenging.

Teaching needs to break free of the strict confines of a traditional approach and start considering the aspirations and needs of the student – it is not the teacher complying with a unit standards approach that is of sole importance to education, it is whether the student is actually learning and meeting their goals. In terms of teaching delivery, this was a critical distinction between those who followed the EE approach and those who did not. Those who followed the EE approach found sufficient flexibility within the curriculum structure to allow them to achieve specified learning outcomes while also introducing challenging activities. Those teachers that were new to the EE process and who had not fully integrated it into their respective subject areas found it difficult to balance these requirements, concentrating solely on achieving the specified learning outcomes through a traditional delivery method.

**Entrepreneurship culture**

A consistent theme running through all of the interviews held with principals was the reference to building a culture of entrepreneurship in their schools. Schools “A”, “B”, “C” and “D” had cultures that were further developed and had shown more tangible results than the balance of the sample. There are some distinct features, however, that are common to all of them:

1. **Focused at a strategic level**: All of the principals at the above schools emphasized the absolute necessity for the development of a strategy at the highest level that would accurately define what “entrepreneurship” meant to their school, trustees, staff, students, parents, businesses and community. It was widely acknowledged that failure to gain commitment at this level in the school would ultimately result in failure of the initiative. Discussions and consultations on the strategy were therefore extensive and inclusive of all stakeholders.

2. **Common vision**: It was vitally important for all stakeholders to not only contribute to the development of a common vision but also to share in its advocacy and show physical support for it, i.e. “walk the talk”. It was therefore difficult to conduct any comparative analysis on the culture between schools using the broad definition of entrepreneurship as a common denominator. Each school developed an independent vision of what entrepreneurship meant in the context of their own geographic region and the peculiarities specific to their communities. This did not, however, diminish or detract in any way from the underpinning philosophy of entrepreneurship, only that it was more appropriately interpreted in the context of their specific region. Some schools, for example, moved away from the term “entrepreneurship” because of its association with “business topics” and called their initiatives “innovation” or “authentic learning”. The key in each of these initiatives however was to keep all stakeholders focused on the strategic direction through regular communication and involvement in school activities.

3. **Values driven**: Alignment to a common vision and inclusive consultation at a strategic level are meaningless unless people behave collectively in accordance
with a shared set of values. The success or failure of any adaptation hinges on how strongly people believe in the new initiative and how well they alter their behavior to support it. Several teacher focus groups evolved into excited story telling frenzies of how an entrepreneurial approach to their teaching had made significant and life changing differences to their students, and more importantly to themselves. One teacher, for example, who had been teaching accounting for 30 years, related how the approach had shaken her traditional teaching beliefs and how the subject had taken on new meaning for her. She had been able to adapt her style and delivery in such a way as to allow herself more time to facilitate and mentor students. Student focus groups verified much of this enthusiasm confirming in most cases a significantly noticeable and almost radical change in teaching behavior. Relationships with teachers were more closely developed, subject matter was more interesting, relevant and challenging and they felt more inspired to learn.

Leadership: Transformational initiatives in any organization require strong, focused and committed leadership, even more so when there is the potential for a fundamental shift in the culture of the organization. Those schools plotted further along the entrepreneurial side of the spectrum demonstrated a focus at a strategic level and were more inclusive of stakeholders in the process of adaptation than others further away. Leadership in the sample emphasized the need to communicate at every opportunity what was being attempted, its importance and the benefits that would accrue to the school and community by following the process. Feedback to the school board was also important and the principal’s role is sometimes made doubly difficult because he/she needs to keep trustees focused and committed as well. “Paid” management units appear, albeit anecdotally, to generate better outcomes vs. unpaid management units. The findings suggest this is a factor that needs further consideration. Of more significance, however, is the strength of the strategic intent and the quality of leadership to drive it. Evidence from the interviews suggests the following leadership qualities need to be present among school leadership teams in moving toward EE:

- leaders have a clear picture of the future of the organization, what it looks like, what it will do and the potential benefits that will accrue to the organization;
- they have good persuasive communication skills and can “sell” their strategy to the Board of Trustees, staff, students and the community;
- leaders are highly visible and supportive particularly toward behavior that is aligned with entrepreneurship;
- leaders maintain contact and develop close relationships with the community, local business and enterprise agencies;
- they empower others to act and make decisions that are in line with the strategy;
- they constantly motivate and support the entrepreneurship concept in their staff as well as to outside partners; and
- leaders build critical mass and capacity in line with the vision and entrepreneurship to deliver education services, skills and expertise to the community that are needed and which provide employment opportunities for students.
Witnessing a change in behavior usually results in some suspicion regarding ulterior motives and the purpose for change. Students are no less suspicious, particularly when a new program is introduced. There are consequently serious implications if EE is adopted in a piecemeal fashion. Programmatic adaptation, i.e. relatively short duration programs focused on small portions of the target population can be fatal for an organization seeking overall cultural adaptation. Independent programs focused on selected students, pilot studies and other initiatives that deal with specific, and in some cases exclusive populations within a school context, usually result in the development of fragmented sub-cultures, who ultimately resist wider integration because of the perceived undermining of their recognized exclusivity. For cultural adaptation and ultimately for EE to be successful, it needs to be implemented holistically and across the entire curriculum. Confining entrepreneurship to the realm of business subjects only (economics, accounting, etc.) or bolt-on electives outside mainstream curriculum will not achieve sustained student involvement or contribute to cultural adaptation. Without that adaptation, EE results will be short lived, and the approach will be relegated to a passing fad, eventually becoming extinct.

A key distinction for the classification of schools on the entrepreneurship continuum was the degree to which entrepreneurship had become embedded in the culture of the school. Those who have followed the above process from strategy, through visioning to values driven implementation, are clearly generating more substantial and tangible results than others. School “A” for example was originally founded on the principles of entrepreneurship, and these have permeated right through its strategies, structure, teaching and culture. It is still, however, not at the extreme of the continuum above because not all subjects in the curriculum are integrated into an entrepreneurship delivery mode. School “B” although in operation for a number of years made a conscious strategic decision to pursue an entrepreneurship approach, and while clearly showing tangible improvements and substantial successes, it still needs to fully integrate entrepreneurship into the remaining curricular activities and subjects offered by the school.

In summary, it appears that full adoption of EE in schools is successful when a conscious decision to adapt has been made at senior management/trustee level and inclusive consultation is held with all immediate stakeholders. Alignment to a common and jointly developed vision is imperative, as is the development of a shared value base to drive toward successful implementation. Committed and visible leadership are required to ensure that critical mass is built internally and staff encouraged to extend EE throughout the school. Most principals agreed that the road to successful implementation is arduous and can sometimes feel regressive, but ultimately it is a worthwhile journey. Cultural adaptation will occur over time, but it is a case of how it is approached and how long it takes for everyone to get on board. Many therefore suggested an incremental approach and support the establishment of a “cell” or small, committed group of individuals to start with, provided this does not become an icon of exclusivity. All teachers should be made aware of the schools’ overall strategy, vision and values. There will be resistance no matter how inclusive the original consultation, however, a clear message needs to be delivered and followed if the strategy is to be fulfilled.

Teaching delivery
A visitor walking into a Year 9 class would see students totally engaged in an “authentic task”. The classroom has two computers in one area, where three students are working: two carrying out research on their task and one checking the class email for responses to a community survey. In another area four students are working around a table drawing visual maps to organize their
ideas and decide what steps need to be taken for the rest of the day. At the side of the room another group has newsprint spread out with paints and brochures. Outside the room two students are on the phone ringing the hospital board about an inquiry for their investigation. At the back of the classroom a different group is scanning photographs and making modifications of a proposal to the local district council. In the middle nest of tables a group of three students is sorting out their digital photos to see which ones capture the essence of what they are trying to portray. At that time the teacher is not in the classroom. When asked, any student will tell the visitor that the teacher is with another group of students who are videoing an interview with a local shop keeper about teenage activities. This is the second day of the “authentic task” which needs to be completed by the end of the third day. Groups of students are required to develop a proposal for improving an aspect of the local community and then present their findings. They need to evaluate the level of success experienced, show goal setting, identify potential problems and recommend future actions. The proposal needs to be submitted to the appropriate personnel. The task is to be used in assessing the key concepts covered in English, Health, Mathematics and Effective Learning during the first term (Personal conversation, Holmes, 2005).

EE in the sample schools is structured around a “cell” of entrepreneurial teachers (more often than not engaged in business subject delivery), headed by a coordinator. The purpose of the “cell” is to develop the concept of EE and embed it in the culture of the school by sharing experiences and engaging others in professional dialogue. By applying EE in the classroom, developing innovative projects and demonstrating renewed engagement with learners, it is anticipated that other teachers will become interested and start integrating the values and practices associated with successful EE into their own subject areas. The intent with growing the “cell” is to achieve critical mass, i.e. that point where there are more teachers and students engaged in EE than those that are not. Once critical mass has been reached, cultural change occurs almost automatically provided it is supported by strong and committed leadership. If not, action by teachers could be construed as mutinous. By the same token, even if leadership is engaged, there could be policy/system constraints that prevent full integration of the concept, for example curricular formalities and unit standards, rigid assessment criteria and inflexible compliance requirements.

A general obstacle to encouraging participation from other teachers was their perception that EE was solely focused on business subjects. Some schools went so far as to avoid using the word “entrepreneurship” and chose “authentic learning” instead. Still others simply referred to it as “good teaching practice”. Furthermore, there is a belief that there are no significant or insurmountable problems concerning the continued use of “entrepreneurship” in the context of the initiative and that any objections are easily remedied by providing a clearer definition which is not specifically aligned with business, for example:

Entrepreneurship Education is an innovative teaching process that engages students who are venturesome, resourceful, energetic and ambitious who are motivated to undertake new initiatives.

At an individual level, the obstacles become more complex. We discovered four main barriers to teaching performance in EE:

1. **Teacher’s perception of students**: The teacher’s perception of students, particularly those who have been involved for some years in education, was one of “they are empty vessels – they come here to be taught and be filled up”. Entrepreneurial teachers on the other hand have a vastly different perception, one that recognizes individuality, prior learning, maturity, capability and a sense of the valuable contribution students can make of their own accord.

2. **Role definition**: Traditional teaching roles emphasize that students need to be taught. Entrepreneurial teachers emphasize that students need to learn.
Traditional teachers see themselves as subject experts imparting their knowledge to students. Entrepreneurial teachers perceive themselves as partners, facilitators and mentors encouraging students to figure it out for themselves. Traditional teachers emphasize critical and evaluative thinking skills; entrepreneurial teachers encourage creative and innovative thought. Traditional teachers assess student performance against preset criteria; entrepreneurial teachers assess performance against authenticity and real-life experience. Traditional teachers disengage at the end of the lesson; entrepreneurial teachers assist in post-activity reflection and remain engaged and supportive. Traditional teachers follow a curriculum and strict delivery guidelines. Entrepreneurial teachers review the curriculum and use their creativity to develop innovative and relevant projects.

(3) **Control**: Traditional teaching dictates that the teacher must be in control of the class at all times. This makes the transition to entrepreneurship teaching enormously difficult for those bound by rules and regulations that typically restrict creativity and innovation. The situation is no different in many organizations governed by rules driven management. When things need to be done in a particular sequence, within a certain time following a predetermined process, being in control is a natural characteristic to developing a reputation for getting things done. This barrier is perhaps the most difficult for traditional teachers to cross, particularly those who see themselves as subject experts and still believe in “filling up empty vessels”. Entrepreneurial teachers at all focus group sessions related situations where they often had to grit their teeth and physically restrain themselves from intervening when they could see a student group about to make a mistake or fail to take some action. Repeatedly, in retrospect, they said it had been the best thing they could have done judging by student reaction and the learning that took place. By allowing students to progress their learning by making mistakes in a safe and controlled environment, teachers were able to use these as learning opportunities for others and act as a safety net providing support, rather than penalizing students for something that was omitted or done incorrectly.

(4) **Innovation**: For entrenched teachers following a given curriculum and who have extensive notes on how to deliver particular subjects, innovative approaches and creative projects are not the norm. While several of the entrepreneurial teachers gave us the impression that ALL teachers operated the way they did, there was ample evidence to the contrary. Entrepreneurial teachers were found to be more proactive in sharing ideas and information concerning novel approaches to situations and projects.

To summarize, there was notable enthusiasm and dedication among the entrepreneurial teachers who adopted this new approach to their teaching. There is also often a misconception that EE focuses solely on business subjects. This can be overcome by adopting a broader definition of entrepreneurship and the context within which it is applied. Changes are needed in teacher’s attitude toward students and the conflicts that arise in understanding the role entrepreneurial teachers need to adopt to succeed in gaining the confidence of students. Teachers need to “lose authoritarian control” and become less controlling under an entrepreneurship mantle, allowing students to make mistakes and to use these examples as learning opportunities for others. Creativity and innovation in curriculum delivery are critical components to EE delivery and with more professional sharing and cross fertilization of ideas this could be accomplished relatively easily. There is
an understanding that personal time encroachment is fairly commonplace when this approach is applied. However, personal time involvement actually diminishes as teachers become more accustomed to the method. There was an appeal for more formalized professional development and release time to accommodate this.

**Student response.** One of the key reasons for initiating EE was the difficulty experienced by students of perceiving the relevance of their studies. Students are disengaged from the teaching process because they do not perceive or appreciate the relevance of what they are supposed to be learning in a real and practical environment. Considering technological advancements in all aspects of their lives, from television, news, communication, computers, social networks, games and so on, it is not unrealistic to assume that the general intelligence level and applied capability of the students has shifted quite dramatically over the past few years. This begs the question as to whether teaching practice has kept pace with this general growth and advancement. For example, there are teachers in the survey who do not possess a smart phone, yet the very students they teach (many younger than the age of 13) send as many as 2,000 and more text messages a week. Traditional teaching methodologies are failing to stimulate and challenge learners in the same way they used to many years ago. Consequently, a teacher who follows a traditional teaching approach, who perceives students as “empty vessels” and who see themselves as subject experts will invariably fall into the trap of believing that disengaged students simply do not want to learn, when in actuality, nothing could be further from the truth.

The “brighter” or more insightful student who “gets it”, is afforded more time and personal effort from the teacher, who invariably sets more complex tasks to keep them engaged. If the teacher reverts to activities that bring the rest of the class up to the same level, they run the risk of disengaging the brighter students. It becomes a question of balance, an additional responsibility placed on the shoulders of the teacher who is constantly required to deliver across a wide spectrum of individual learning capability whilst complying at the same time with a perceived rigid subject prescription.

The rapid development of technology in the classroom and multiplying information sources through the internet has had a significant impact on student learning capability, something which is believed to be greatly underrated by traditional teaching approaches. The research team was constantly impressed throughout all student focus groups discussions with the level of general intelligence and maturity displayed by participants. Feedback from students concerning an entrepreneurial teaching approach revealed the following key perceptions across all schools:

- **Engagement:** While entrepreneurship had been somewhat hesitantly approached in the initial stages by most students, it did not take long to realize that there were significant differences between what they had been exposed to previously and this new approach. All students in the groups expressed overwhelming positive comment on how this approach made connections with real life situations, wider community issues and the practicalities in applying their learning. Behaviorally, they were more attentive and focused on achieving a positive result. Teachers were perceived as “coaches” and sources of expertise to be used as necessary. They appreciated not only the sense of independence and being left to accomplish tasks on their own without close supervision but also the flexibility of being able to consult and discuss issues with the teacher when needed.

- **Resourceful:** Students appreciate the freedom associated with being able to apply their learning to practical, real-life, community-based opportunities. This was labeled as “student directed” learning, i.e. primarily driven by requests from students for information concerning task accomplishment and advice, rather than
teacher directed/curriculum-driven teaching. Where difficulties were encountered in task completion, advice and direction was freely available and acted upon. Many of these tasks are group/team based. Students consistently reported that the key to success in team initiatives was understanding the strengths and weaknesses of each team member. Shared responsibility and accountability was critical as was seeking advice when confronted by obstacles. These are all characteristics of high performance work teams in a real business environment.

- **Attitude**: Again, the team was struck by the energy displayed in the discussions with students. After the initial ice-breaking, discussions flowed in much the same way as the teacher groups, with considerable enthusiasm and students vying to top each other’s stories with how EE had affected their outlook on life. Students fed back evidence of improved self-confidence, a greater sense of self-esteem and a closer alignment to the values of the school. This latter point was an interesting one, particularly as students stated they had developed a greater appreciation for what their school stood for, what it believed in and why this was important to be reflected in their behavior toward the community.

In summary, EE has had a profoundly positive effect on students. Students display greater ownership and responsibility for the learning process, an increasing level of maturity as they are exposed to real-life, community-based experiences and a welcome demonstration of creativity and initiative. There is a greater sense of independence and an appreciation of their own self-worth as individuals and as part of a team. There are fewer examples of disruptive behavior, higher numbers of merit outcomes and an overall attitude that exudes confidence, enthusiasm and energy.

**Parent reaction.** There was less opportunity in this study to gain a substantive feel for the effects of EE on parents; however, one of the schools has investigated this area fairly thoroughly (Holmes, 2012) and comments from parents have thus been incorporated to verify the limited findings. Overall response to the study from parents has been positive with all participants reporting changes in behavior and attitude in their children consistent with those encountered in school. Children who were previously subdued, shy or even mildly deviant have become more self-confident and focused on the school accomplishments.

Comments have included:

My daughter has had a positive, happy Year 9 and has thoroughly enjoyed the atmosphere and learning experiences, and now has so much more confidence. The positive reinforcement of learning can only help these students in leaps and bounds!

My son has two older brothers who often tell him he gets off easy being the youngest and he can do what he wants. I think he believed it, particularly when he started getting into mischief. Since he’s been involved in this program though, things have changed quite dramatically. His brothers don’t tease him anymore, they actually listen to what he has to say, he’s much more confident and acts more like an adult than a fifteen year old.

It is an excellent transition between Intermediate and High School and I have already expressed praise to other parents. The chance for your child to have fewer teachers is great and we have shared this with others.

My daughter would come home and sit in front of the TV or go off to the mall with her friends. Homework was a mission to get her to do. She started year ten and has been involved in this “entrepreneurship” at school. Homework comes first, she rarely sits in front of the TV and her closest friends are in her team. She goes to their house or invites them here to work on their school projects. I’m stunned!
Feedback from parents indicates that even the entrepreneurial schools, as good as they are, need to focus some attention on communication with parents and drawing them closer to school affairs. Some parents regarded EE with some reservation until the process was more fully explained to them. This could be used as a promotional initiative and additionally fulfils a requirement for inclusive consultation with the community.

Many parents feel they can make additional contributions to their child's learning and want to be more involved in facilitating the process but do not know how to approach this. This is an issue that needs careful consideration in the context of overall strategy as well as the operational dynamics involved in making it happen. A broad suggestion would be that perhaps wider and more frequent consultation between entrepreneurial teachers, students and their parents needs to occur. This would enable further integration of the methodology and embed it in the culture as discussed above.

In summary, parents were overwhelmingly impressed with the approach, the outcomes and more importantly the behavioral and attitudinal changes that have occurred in their children as a consequence of their involvement.

**Notable issues.** The following provides a summary of some of the key downside issues noted during the discussions with each of the groups. These are not insurmountable problem areas however, if they are appropriately attended to, will contribute greatly to the overall sustainability and growth of EE in schools:

- **Recognition of business subjects:** it is the understanding that general business subjects, apart from accounting and economics, are not accorded the same recognition in the secondary school curriculum as other subjects, such as English, Mathematics and Science. Unfortunately, the current complaint by businesses that school leavers are unreliable, unskilled and expensive to accommodate, is not being addressed. The result is economic inertia—school leavers cannot gain employment and business cannot grow. Recognition of business subjects in the secondary school curriculum improves the entire supply chain (including step up into university), "business readiness" and potential trade talent of the general labor pool. Students need to see learning pathways beyond school. Failure to show how subject matter applies in a real context can and will simply reinforce the “relevance” argument and continue to cause a high drop-out rate.

- **Transitioning teachers to EE:** Just as students need to see pathways for application of their skills in the market, teachers also need to see a pathway of transition from traditional delivery to entrepreneurial methods. Development initiatives that point out the flexibility of curricular learning outcomes need to be addressed without diminishing the standards that must be achieved. This flexibility needs to be interpreted into entrepreneurship delivery templates that can be incorporated as training modules for professional development.

- **Professional development:** Teachers overall requested further development in entrepreneurial teaching methodologies and some form of training intervention that would allow them to jointly share experiences and expertise. Transitioning teachers, in particular, requested further information on entrepreneurship within their specific subject areas as an aid. This information could be shared through regional coordination and fed back into the curriculum if adjustments need to be made.
In summary, it is noted that for there to be concerted effort to follow an entrepreneurial approach in schools, consideration will need to be given to ways of showing how to use the flexibility in curriculum prescriptions without sacrificing education standards. Teachers making the transition need further professional development and guidelines on how to implement EE into their particular subject areas.

Conclusions
The major objective in this study was to establish whether an EE approach was effective in bringing about changes to teaching practice in secondary schools that resulted in improved student outcomes, behavior and attitude. The findings from the spread of schools researched lead to the general conclusion that the move to an entrepreneurial approach to secondary education is a mid- to long-term strategy that generates significant positive changes in student behavior and attitude. It was found that schools could be plotted on a continuum of “entrepreneurship” with some schools further advanced due to the degree to which entrepreneurship had been embedded in the value structure and strategy of the school. There was no evidence that any one school had achieved full integration of the entrepreneurship concept across all subject areas in the secondary curriculum. This highlights the incremental nature of the adaptation process and suggests that it may take several years to achieve a high degree of entrepreneurial integration based on current definitions of the concept and the cultural differences encountered in each school.

Specific conclusions based on interview information and document reviews in each of the research schools are as follows:

School leadership
A consistent message across all schools was the positive view held of EE among leadership teams. Whether it was directly referred to as EE, “authentic learning” or an “innovation program”, school principals concurred that it had positively enhanced the learning experience for their students. Proof of this has been demonstrated by an in-house study conducted in one school which tracks the scholastic progress of participants involved in entrepreneurship over several years.

Furthermore, those involved in EE stressed the need for entrepreneurial values to be embedded in the belief system and culture of the school. An issue that needs attention is that EE/teaching needs to become an integral part of the strategy formulation and planning process at the highest level, i.e. at Board and senior management levels. Without representation and visible support from leadership, EE will not survive. It also needs time to become established and to build sufficient critical mass (community stakeholders, leadership, teachers and students) to become embedded in the culture of the school. The process of adaptation is best kept at an incremental level rather than as a transitional or transformational initiative because of the latter’s often disruptive effects. However, it was found that the pace of that incremental evolution will differ based on the readiness of the school to adapt, the urgency with which it needs to change and the willingness of the community to support its initiatives.

Finally, broad community representation at Board level and enthusiastic principal support for EE leads to greater cultural integration within the school and significantly more positive commitment from the community. The principal’s role has evolved in EE schools to one where there is a much closer relationship with the wider community and all of its stakeholders, ensuring that, as far as possible, needs are identified and met through education strategies suited to that locality.
Teaching
There is significant, widespread positive support for the EE initiative and that this is gaining momentum. Attitudinal and behavioral change in teachers was witnessed and supported not only by their own admissions but also by information gathered from students and their parents. Of note was the hesitation with which newcomers to the approach initially respond to EE and their request for guidance and assistance in being able to integrate their subject matter into an entrepreneurial format.

A barrier to full integration of all secondary curriculum subjects into EE remains the general perception that “entrepreneurship” is solely confined to business subjects. It was speculated that this could be a consequence of other programmatic initiatives introduced at schools to further develop entrepreneurial talent which have had a measure of success and are consequently more widely promoted/celebrated than similar behaviors in other subject areas. There was further speculation that a narrow definition of entrepreneurial behavior that focuses solely on business subjects is more easily understood and accepted by teachers and students alike. The danger of this perception is however that it could prevent a wider demonstration of entrepreneurial behavior in other subject areas and stop the integration of entrepreneurship into the school’s culture.

It was noted with schools that were closer to the ideal entrepreneurship concept that formal professional development programs were planned as part of the school’s future strategy. This is an example of the importance of being entrepreneurial at all levels within the school’s environment and demonstrates how the concept has become part of the school’s culture.

Student learning
A primary objective was to establish whether EE made any difference to student outcomes in terms of their attitude toward learning, their behavior and their scholastic achievements. The response from all student focus groups was overwhelmingly positive. In particular, students commented consistently on how their perspective of learning had changed and how they felt more engaged in the process. Of note were the comments made concerning relevance, applied learning, engagement with the teacher, the learning process and the fact that they felt they had a valuable contribution to make to the wider community.

It was concluded that student learning outcomes, student behavior and attitudes are significantly improved through EE. Comments consistent with this finding include students feeling a greater sense of personal achievement, the opportunity to direct their own learning and their ability to control the learning process for themselves without close supervision. Attitudes toward teachers had changed with students viewing them as coaches and facilitators rather than traditional directive authoritarians.

Observation of the learning environment whilst students were engaged in projects leads to the conclusion that it is more focused, yet relaxed. There is a sense of dedication to task but also a greater degree of personal responsibility toward self and others. Teachers perform a mentoring role and are more engaged with their students on a personal and group level.

From this study, it was established that there has been a considerable positive shift in teaching practice and student behavior in response to an entrepreneurial education approach. Shifts in student attitude from one of disengagement and boredom to greater connectedness and involvement in projects that have relevance not only for the school but also for the wider community have been observed. Renewed energy and enthusiasm was encountered from teachers who have adopted the approach and who now act in the capacity of “coach”, “mentor” and “facilitator” as opposed to being the subject matter expert. Shifts in perceptions were also encountered toward students to one where there is a closer supportive relationship. Tangible evidence of improved learning outcomes was experienced through a
comparative study between “entrepreneurial” students and others demonstrating the impact EE had in certain schools.

There was insufficient data to support a claim that full integration had occurred across the entire spectrum of the secondary school curriculum. On the contrary, EE has mostly been confined to the delivery of business related subjects. However, concerted effort is being made to break away from the pure business orientation into other subject areas. This is furthermore supported by the school’s strategy which sees this as the next natural stage in development toward a fully integrated entrepreneurial school. Further follow-up will be necessary through action research to further substantiate the results of this next phase and explain how this enables integration into a wider community context.

References


Further reading


Global Entrepreneurship Monitor (2004),


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Abstract

Purpose – In this volatile and increasingly fast-revolving world, it has become crucially important to monitor, measure and manage nation image and its dynamic changes in real time. However, few studies have been conducted on a model to measure the image and/or its changes. The purpose of this paper is to find an economically affordable methodology to measure nation image and its changes online in real time.

Design/methodology/approach – The study took an approach to build dynamic ontology that may reflect to change nation image in real-time. With it, the authors attempted to measure nation image in real-time.

Findings – Among many social media, the authors found that Wikipedia is particularly suitable for the purpose of measuring nation image. An ontology of nation image was built from the keywords collected from the pages directly related to the big three exporting countries in East Asia, i.e. Korea, Japan and China. The click views on the pages of the countries in two different language editions of Wikipedia, Vietnamese and Indonesian were counted.

Originality/value – The study confirms the objective: the data from a social media service, Wikipedia, may work very well as an economically affordable real-time supplement to offline nation image indices that are currently used.

Keywords Vietnam, Ontology, Indonesia, Social media, Nation brand image, Wikipedia click views

Paper type Research paper

Introduction

As many countries compete fiercely in trying to draw investments and travelers from foreign countries and to entice customers in overseas to export more products and goods than before, governments and their commissioned entities attempt to manage their nation brand image to maintain the competitiveness over competing nations and countries (Kotler and Gertner, 2002). According to Park (2010), a nation image must be managed because it plays an important role as an external clue that influences customers’ decisions at the time of purchase. Especially, several previous studies on the country-of-origin effect (also known as COE) showed that consumers often judge a product’s quality, its value and its perceived-risks by nation image and COE. Those significantly affect consumers’ purchase decisions.
(Kaynak and Kana, 2000; Tse and Gorn, 1992; Wang, 1978). Furthermore, Cho et al. (2007) found that a nation image has positive relationship with the evaluation of a product’s quality, regardless of its brand image. He also found to be true that the favorable attitudes to the country of origin show positive relationship with image evaluation.

Traditional methodology of measuring nation image has been showing some limitations because it relies heavily on person-to-person interviews. As measuring nation image has to be done on a global scale, it is prohibitively difficult and expensive. Researchers often compromise with the reality. Somewhat mediocre outputs have been produced.

To make the situation worse, nation image changes dynamically continuously. Ideally, it must be monitored repeatedly in real time. To overcome these limitations, some consulting firms maintain over tens of thousands panel pools around the world to run near real-time surveys. Maintaining tens of thousands panel pools in global scale should be very difficult and costly.

A new methodology using big data, in response to such needs, of measuring nation image online in real time is desperately sought: it must produce reports analyzing people across the world anytime needed; it must be less costly than its traditional counterpart, and, lastly but not the least, it must be applicable to different domains.

Big data analytics are frequently mentioned topics in research and practice (Buhl et al., 2013). The term “Big data” is referred to the ongoing expansion of data in terms of volume, variety, velocity and veracity (IBM, 2012). Big data analysis widens and expands the scope of traditional business intelligence (BI) which focuses on integrating and reporting structured data lied in company-internal database, by seeking and adding to extract values from semi-structured or unstructured data originated from Webs, social media and blogs that are external to the company (Debortoli et al., 2014). Big data offer enormous opportunities and also many challenges for businesses (Buhl, 2013). To related with big data, the Mckinsey Global institute states that the USA alone faces a shortage of 140,000 to 190,000 people with deep analytical skills as well as 1.5 million managers and analysts based on their findings (Manyika et al., 2011). The possibilities of big data will continue to evolve rapidly, driven by innovation in the underlying technologies, platforms and analytic capabilities for handling data, as well as the evolution of behavior among its users as more and more individuals live digital lives (Manyika et al., 2011).

This paper presents an attempt to measure nation image analyzing utterances for nations using unstructured data. The researchers made an attempt to measure image from the data that can be obtained in social media and compare them to image collected by traditional offline surveys. Among many social media service providers, the data from Wikipedia well satisfy the constraints for the purpose. Unfortunately, nation image from Wikipedia is partial only limited to its awareness. Even so, the data include surprisingly rich ontological information about nation image in both breadth and depth that offer different aspects to the ones from traditional methodology. The researchers believe that the image driven from Wikipedia can be used as an online real-time supplement to offline expensive traditional models measuring nation image.

1. Literature review

Image of a nation may be a determining factor for travelers to select the countries to travel. Good nation image works as an absolute and necessary element in enticing international capital investments and/or attracting best possible workforce from overseas. Therefore, many governments around the world try to manage their nation image as good as they can be (Park, 2010).
Nation image is defined to be an individual item or a compound of the nation name, emblems, designs, quality, policy, awareness, etc., which differentiate a nation from other nations in the areas of foreign policy, culture, exports, immigration and investments, tourism and so on. Although many have attempted to develop a model to measure nation image and analyze the assets belong to them, neither a standard nor a consensus has been reached.

In general, despite no agreed standard, the index proposed by Anholt (2005) is the first of analytical ranking of the world’s nation brand. Anholt’s NBI (also known as Alholt-Gfk Roper Nation Brand Index) is a result of a survey that is run on a worldwide panel of 28,000 consumers in 35 countries on the perception of nations in cultural, political, commercial and human assets, investment potential and tourist appeal. According to Anholt, nation brand is the sum of people’s perceptions of a country across the six areas of nation’s competence:

Every country has its brand strengths and weaknesses, so there is a different “winner” for each point of hexagons. The overall “Top Nation Brand” is the one with the highest marks across all points of the hexagon (Anholt, 2008).

The Anholt NBI measures the power and appeal of nation’s brand image and obtains the information how consumers around the world see the character and personality of the brand. Also, Country Brand Index (CBI) is maintained by a global brand consulting company, Future Brand (2008). This model surveys a qualitative analysis, expert opinions and statistical data to compute the national rankings. The survey uses “hierarchical decision model” to measure the steps of awareness, familiarity, associations, preference, consideration, decisions/visitations and advocacy.

Samsung Economic Research Institute (SERI) and Presidential Council of Nation Brand (PCNB) in Korea jointly developed Nation Brand Double Octagon (NBDO) measure substance and image: Substance is measured using 125 statistical data offered by many institutes and governments in the world such as IMD, WEF, World Bank, UNESCO, etc.; image is computed from a survey from 13,500 opinion leaders in 26 countries (Lee, 2012).

Although offering researchers, marketers and policymakers rich insights, Anholt NBI, Future Brand’s CBI and SERI-PCNB’s NBDO models all share similar limitations:

- Collecting and maintaining a global pool of consumers is prohibitively costly. Although it can be done and is being done, customers of the companies, which are countries and cities, may have difficult time to justify the expenses. An affordable way to analyze a nation brand is needed.
- The traditional models are for offline and hardly provide real-time analysis. In the rapidly changing global economy, a true sense of real-time analysis for nation brand is desperately needed.
- Perhaps the most critical issue among the above limitations so far, the models are designed for off-line interviews and surveys and not well suited for on-line analysis. A model for on-line analysis for the data that can be obtained in the internet must be developed.

A methodology for nation brand analysis to overcome the limitations listed above must meet the following constraints:

- The resulting reports must depict the nation brand as good as Anholt NBI and Future Brand CBI models would. That is, the nation image must give as insightful, useful and important information as traditional nation brand image did, to researchers, marketers and policy-makers.
The resulting reports must be automated that an analysis may be run in real-time to repeatedly produce objective and consistent results.

- It must reflect the characteristics of data that may be obtained in the internet. Particularly, the methodology must deal with utterances that are determined by the characteristics of social media services.
- In addition, the resulting reports must be affordable enough so that many small to medium local governments and individuals run their own at will.

2. Analysis of country image in Wikipedia

To develop a model to analyze country image, the characteristics of data obtained from various social media are discussed in the Subsection 3.1. From this, the reason why Wikipedia is determined to be suitable for the study is discussed.

Wikipedia offers two different kinds of data: page edits and click views. In the Subsection 3.2, the researchers discuss why and how the page edits used in pursuit of developing a model satisfying constraints for this study. The page edits were used to construct an ontology model. The discussion includes how it was built from the edits, from Wikipedia English edition, directly related to countries in focus. The countries are chosen for the study are the big three exporting countries in East Asia, South Korea, China and Japan.

Having the set of ontology built from Wikipedia English edition, it was translated and applied to categorize the page views in Wikipedia Vietnamese and Indonesian editions. As the page views indicate how people perceive about focused countries, the researchers attempted to have a close look into the page views of the big three exporters and compare them against each other. From this, the researchers conclude that they show the awareness of nations among the users of a Wikipedia language group. Although the data sets themselves from Wikipedia are somewhat limited, because word selections are neutral, they give insightful information, and it is worthy for nations to monitor and manage. The researchers propose to call them the awareness of a nation image.

2.1 Social media services and the characteristics of their data

To compute a real-time online nation brand image or something similar, the characteristics of social network services in a global scale are investigated. They are Facebook, Twitter, YouTube and Wikipedia.

The data from Facebook are not easy to draw because it allows a third party business application to access to only the one that obtains a user’s permission. As the research team cannot even get the data, Facebook is ruled out. As for YouTube, it is difficult to analyze video clips with comments. YouTube for analysis is also ruled out.

Twitter data are readily available, as tweets can be easily collected and analyzed, although difficulty exists as a large portion of the data uses cants and slangs in addition to acronyms and emoticons. The most serious problem of all is that the data show users’ turbulent emotional cornering that are heavily inconsistent. Such cornering and inconsistency may be useful when the emotional changes of a group are the concern. Therefore, Twitter for the research is also ruled out.

As for Wikipedia, the data are consisted of two kinds: the number of edits and the number of clicks:

1. The number of edits is the concerns of experts which effectively close to experts’ opinions in Delphi method; and

2. Editing in Wikipedia is tightly controlled to ensure the quality of article content.
Wikipedia strongly encourages editors to take neutral point of view:

Editing from a neutral point of view (NPOV) means representing fairly, proportionately, and, as far as possible, without bias, all of the significant views that have been published by reliable sources on a topic. All Wikipedia articles and other encyclopedic content must be written from a neutral point of view. NPOV is a fundamental principle of Wikipedia and of other Wikimedia projects. This policy is nonnegotiable and all editors and articles must follow it (http://en.wikipedia.org/wiki/Wikipedia:NPOV).

For this reason, Wikipedia articles present words showing neither emotional affinity nor loyalty, which are the attributes that general nation brand indices depend on. Concerning this, the researchers decided to limit the study only to measure what is dictated by the data of Wikipedia. This limitation turned out to be a blessing for the study because the fact that the data set is more objective and consistent than other data sets from many other social media, such as Twitter, added significant and exciting values to the final output of the study.

While the number of edits shows experts’ opinions, the number of clicks shows the concerns of average users.

Also, while the number of edits may be arbitrary and controlled, the number of clicks is spontaneous and voluntary. In measuring the dynamic shifts of average people’s concerns (or awareness) to a nation, the researchers find the number of clicks ideal.

2.2 Nation image Wikipedia ontology
Traditionally, the equity types of country brand proposed and accepted by many are composed of awareness, performance, emotional affinity, and loyalty. Awareness represents familiarity to a country, while performance measures qualitative evaluation. Emotional affinity means a user’s personal liking or sympathy to a country. Finally, loyalty comprises visiting loyalty and purchasing loyalty, which means that a person wants to visit a country and to buy a country’s product, respectively.

To make sure that the model constructed from this study is sound and complete, models used in other approaches were inspected, compared and incorporated. In particular, the categories used in the models of future brand CBI, Anholt’s NBI (Nation Brand Index), city brand index and SERI-PCNB’s NBDO were carefully examined.

As shown in Figure 1, the researchers measured the number of edits in Wikipedia English edition. The most frequently edited pages directly related with the focused countries from the top are collected. Four hundred keywords for each country and 1,200 keywords altogether were collected. The keywords then were mapped into four categories: politics, society, economy and culture.

Future brand CBI was partly used because it was not directly comparable to all other models.

Each category was then divided into subcategories. For example, the politics category is divided into president, military, government, administration and foreign relation. The society category is divided into geography, education, history, language, religion and people. The economy category is divided into industry, welfare, finance, infrastructure and science and technology. Finally, culture is divided into art, music, film, sport, cuisine and entertainment. Considering the subcategories, the edited pages (i.e. keywords) were divided into 22 subcategories which became the building blocks of an ontology set named Nation image Wikipedia (NI-Wiki) ontology.

Then, the number of page views of each article was collected. As stated, the number of edited articles represents experts’ interests about a nation, while the number of page views
represents general interests in it. The articles are classified according to NI-Wiki ontology. NI-Wiki ontology maps the Wikipedia articles into both the four main categories and the specialized classification mentioned above. The sum of page views of each category shows awareness of the category.

2.3 Comparisons of South Korea, China and Japan

2.3.1 Nation image Wikipedia ontology to the page views of Wikipedia English edition. The page click views during a year period from June 2012 to May 2013 are counted. Table I shows the page views of each country. Interestingly and somewhat surprisingly, the page views of Japan are the lowest. The views about China show as twice as those about Japan.

As for the background information, the total numbers of pages related to the three nations in the English Edition of Wikipedia are as in the Table II. It shows South Korea has the lowest number of pages. The pages about China are as three times as the ones about South Korea, whereas the ones about Japan is as twice as them.

As shown in Figure 2, NI-Wiki ontology extracted from English edition, three countries have different page views according to the four main categories. Among the main categories, South Korea shows politics 37 per cent, economy 1 per cent, society 33 per cent and culture 29 per cent; China shows politics 57 per cent, economy 1 per cent, society 36 per cent and culture 6 per cent. Finally, Japan shows that politics 14 per cent, economy...
2 per cent, society 62 per cent and culture 22 per cent. All of the three countries show the lowest number of page views in economy. The highest page views are all different in each country. In the case of South Korea and China, politics has the highest, while in the case of Japan, society has the highest. Also, it is worthy of attention that in the case of South Korea, politics, society and culture have similar page views:

Focusing on the culture category, Figure 2 shows that heavy click views for South Korea compared to the views for Japan and for China. The researchers were able to find several reasons. Some of them are well-known to many: for example, Gangnam Style, a Korean pop music, was a world-wide sensation for the period the study was taken.

Some are not well-known and even surprising to many: for example, Running Man, a weekly entertainment series from a South Korean TV station broadcasted in Korean, gets enormous click views week after week as shown in Figure 3. In fact, it is ranked 602nd in traffic among all pages written in English Edition of Wikipedia. Running Man is not the top entertainment program series in Korea, but it is on the top of the many other competing programs in its kind in the world. This may be unknown to most of the people around the

Table II.
The pages in the English edition of Wikipedia (as of May 31, 2013)

<table>
<thead>
<tr>
<th></th>
<th>South Korea</th>
<th>China</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total pages</td>
<td>43,899</td>
<td>132,566</td>
<td>107,832</td>
</tr>
</tbody>
</table>

Figure 2.
NIWI-English: South Korea, China and Japan

Notes: (a) South Korea; (b) China; (c) Japan

Figure 3.
Running Man click views
world. Perhaps, even the people producing the TV series may not know what is happening in Wikipedia, therefore in the world. This kind of phenomena is something that cannot be easily pinpointed because the popularity is NOT as big a global syndrome as seen in Gangnam Style. It is moderate and yet significant enough to look into because it is enough to change the dynamics of a nation image. This kind of popularity that changes in a nation image cannot easily be spotted.

Figure 4 shows that the sub-categories of the culture category comparing the NI-Wiki-English of the three countries reveal detailed information. South Korea gets more click views in the music sub-category than the other two, whereas China gets more in film and cuisine.

2.3.2 NI-Wiki ontology to the Vietnamese and Indonesian edition. NI-Wiki ontology was translated and applied to Vietnamese and Indonesian Editions to obtain NI-Wiki Vietnamese and Indonesian for the three countries. The researchers attempted to show how the countries are perceived differently by the people in the language groups.

Table III shows the Vietnamese Edition. The people using Vietnamese language clicked more on China that the other two countries. Among the three nations, South Korea shows that the nation is very strong in its culture category.

The click views for the period from June 2012 to May 2013 show the significant differences ($p < 0.0001$). This is visualized in Figure 5.

To visualize the differences of awareness, the researchers used multiple corresponding analysis. Figure 6 shows the result of the corresponding analysis in Wikipedia Vietnamese Edition. As shown in the Figure 6, the three countries get different number of clicks for different subcategories to the users of the Edition: Korea gets more clicks, therefore more awareness from the users, on music, finance and entertainment than the other two; Japan on military, infrastructure and cuisine; China on language, geography, people, foreign relations and so on.

Table IV shows the numbers of click views in Wikipedia Indonesian Edition of the big three countries. It shows the three countries show significant differences ($p < 0.0001$). The people using Indonesian language click more on Japan.

As for South Korea, society and culture categories show large portions of click views at 52.8 and 40.4 per cent, respectively. On another hand, China gets a large portion of click views.
views to society at 82.6 per cent, followed by culture, politics and economy at 13.9, 3.0 and 0.5 per cent, respectively. As for Japan, it shows society at 78.9 per cent, culture at 19.3 per cent and politics at 1.7 per cent. In summary, clicks on South Korea show balanced clicks between culture and society but China and Japan show.

Figure 5.
Number of click views of the big threes in Wikipedia Vietnamese edition

Notes: (a) Japan; (b) China; (c) South Korea

Figure 6.
Corresponding analysis of the click views in Wikipedia Vietnamese edition
Figure 7 visualizes the number of click views in Wikipedia Indonesian Edition. As shown in it, South Korea is more balanced between society and culture categories than other two countries.

To visualize the differences of awareness, the researchers once again used corresponding analysis. Figure 8 shows the result of the analysis in Wikipedia Indonesian Edition. As shown in the Figure, the three countries get different number of clicks for different subcategories to the users of the Edition: Korea gets more clicks, therefore more awareness from the users, on entertainment, film, sport, and geography than the other two; Japan on music and military; China on science and technology, language, people and so on.

3. Conclusion and future studies
In this study, the researchers attempted to find a way to measure nation image online real time, whereas the traditional way heavily depend on offline face-to-face surveys.

Considering data from many different social media, the ones from Wikipedia is particularly well-fit for nation image. The data from Wikipedia are somewhat limited because Wikipedia encourages its editors to take neutral positions on issues. Even though the selected words are neutral, data from Wikipedia offer insightful information, which is worthy to give an attention. The researchers attempted to find a way to measure an online real-time nation image that may supplement traditional nation image.

Nation image from Wikipedia is partial only limited to click views. Even if partial, it includes surprisingly rich ontological information in both breadth and depth that help to understand how people in a language group perceive about a country. It gives as insightful, useful and important information as traditional nation image would offer.

Taking a close look into the click views of the big three exporters and comparing them to each other, the researchers found that they offer interesting facts in the Wikipedia editions. The corresponding analysis revealed that the users of Vietnamese edition and the users of Indonesian edition have difference in their perception toward the big three exporting countries chosen in the study as the number of clicks are somewhat different.

<table>
<thead>
<tr>
<th></th>
<th>Politics</th>
<th>Economy</th>
<th>Society</th>
<th>Culture</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Korea</td>
<td>64,023 (3.1)</td>
<td>74,996 (3.7)</td>
<td>1,080,683 (52.8)</td>
<td>828,044 (40.4)</td>
<td>2,047,746 (100)</td>
</tr>
<tr>
<td>China</td>
<td>48,181 (3.0)</td>
<td>7,424 (0.5)</td>
<td>1,323,658 (82.6)</td>
<td>223,037 (13.9)</td>
<td>1,602,300 (100)</td>
</tr>
<tr>
<td>Japan</td>
<td>71,355 (1.7)</td>
<td>3,417 (0.08)</td>
<td>3,289,958 (78.9)</td>
<td>803,007 (19.3)</td>
<td>4,167,737 (100)</td>
</tr>
<tr>
<td>Total</td>
<td>183,559 (2.4)</td>
<td>85,837 (1.1)</td>
<td>5,694,299 (72.8)</td>
<td>1,854,088 (23.7)</td>
<td>7,817,783 (100)</td>
</tr>
</tbody>
</table>

Table IV. Number of click views of the big threes in Wikipedia Indonesian edition

Notes: (a) Japan; (b) China; (c) South Korea

Figure 7. Number of click views in Wikipedia Indonesian edition
Yet, looking close to the keywords (subcategories), categories are somewhat similar. Korea gets clicks on entertainment and film. Those are keywords related with Korean pop culture that has become very popular recently among the young people in the both language groups. On another hand, Japan gets clicks on military and China on people and language.

The findings gave the researchers enough to assert that measuring the number of clicks in Wikipedia editions is an affordable candidate to monitor real-time awareness of a nation. However, it must be noted that they offer neither performance and emotional affinity nor loyalty, each of which is considered as an important part of equity to nation brand.

Clearly, data obtained from Wikipedia are advantageous over traditional methodologies because it may be repeatedly run in real time and does produce consistent and dynamic results. For this, it may well qualify to be used supplement to traditional nation brand image.

As for the future study, it would be ideal to find a way to get other kinds of brand equity that are missing from Wikipedia which are performance, emotional affinity and loyalty. The researchers would like to continue to search ways to find those other kinds of brand equity.

As for the limitation of this particular study, we, the researchers, admit that we could not develop an algorithm for automated ontology construction. In another research, however, we were successful in developing such an algorithm. The work was reported in another paper (Lee, 2016).

References


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Relationships between golf range users’ participation motivation, satisfaction, and exercise adherence intention

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Abstract
Purpose – This paper aims to identify the relationship between participation motivation, satisfaction and exercise adherence intention of golf range users on the basis of self-determination theory.

Design/methodology/approach – For this purpose, the authors proposed research questions and a conceptual research model as well. Then, the authors surveyed users of golf ranges located in Seoul Metropolitan City and Gyeonggi-do province.

Findings – By applying convenience sampling, the authors received a total of 313 questionnaires. Results were as follows. First, among the participation motivation sub-factors, health-oriented motivation, achievement motivation, pleasure-oriented motivation and self-displayed motivation had a significant effect on emotional satisfaction, while achievement motivation and pleasure-orientation motivation had a significant effect on performance satisfaction. Second, the following participation motivation factors had a significant effect on exercise adherence intention: health-orientation motivation, achievement motivation and pleasure-orientation motivation. Third, among the satisfaction factors, emotional satisfaction and performance satisfaction both had a significant effect on exercise adherence intention.

Originality/value – This is one of the first papers to examine the relationships that exist between golf range users’ participation motivation, satisfaction and exercise adherence intention.

Keywords Satisfaction, Golf range users’ participation motivation, Exercise adherence intention

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Introduction

Golf has become increasingly popular for people of all ages and skill levels. According to Seo (2013), there are more than 460 million golfers, the largest for a single event sport, around the world. Golf not only provides a means of sports and recreation but also can be a method of improving fitness and balance, especially for the old (Tsang and Hui-Chan, 2004). In the past, golf was an aristocratic sport. The costs to learn and enjoy golf were exorbitantly high to even be considered by people with an average household income. Now, however, golf has entered a period where it can be enjoyed by men and women of all ages. With drastic price bubble bursts for golf supplies, the increase in public golf courses that are more affordable than regular country clubs and the prevalence of golf driving ranges that can easily be enjoyed in urban areas, golf has fully become a leisure sport familiar to the general public. As a result, the question of why people participate in golf sports and whether they adhere to them has emerged as a research topic of interest.

Previous researches about golf exercise mainly focus on how to improve golf performance (Burden et al., 1998; Doan et al., 2006; Watanabe et al., 1998). These researches have elucidated that golf performance is influenced by golf club and swing mechanism. Several studies have investigated the effect of golf training programs, based primarily on golf theory and anecdote, and used general conditioning exercises (Doan et al., 2006; Fradkin et al., 2004; Thompson and Osness, 2004). Though these researches identify several key factors for improving golf performance, they underscore the importance of motivation in sport.

The act of participating in sports as a leisure activity and adhering to them depends on the individual’s personal choices, and among them, motivation is recognized as the most fundamental area that determines sports participation (Park et al., 2010). Motivation refers to an inner driving force that causes behavior toward a certain goal (Park and Moon, 2007), and it is especially pronounced in the leisure sector, as it not only helps to understand and analyze why people participate in sports activities in their desired manner but also aids in understanding the results of sports participation (Manfredo and Driver, 1996; Park et al., 2010).

For this reason, there have been studies across a relatively wide variety of sports areas, such as swimming, skiing, yachting, triathlon, track, dance, etc., to identify the relationship between satisfaction and exercise adherence intention through the motivation for, and participation in, particular sports situations (Bu and Yang, 2005; Cho and Ji, 2013; Cho and Kim, 2010; Jeon et al., 2014; Jung and An, 2012; Kim and Ro, 2012); not only have these studies revealed that participation motivation is the reason for participating in sports but also it has a close relationship with satisfaction and exercise adherence intention (Park et al., 2010).

Meanwhile, in the golf sports field, research on increasing the will of participants to participate in exercise has actively been conducted. The studies are largely divided into three areas:

1. the relationship between participation motivation and satisfaction of golf participants (Han and Kwon, 2008, Hur and Shin, 2011; Kim, 2005; Lee et al., 2011; Shin, 2009; Shin and Yoon, 2010);
2. the relationship between participation motivation and exercise adherence intention (Choi et al., 2010; Jeong, 2006; Kim, 2014; Kim and Jung, 2010; Oh, 2007; Shim, 2013); and
3. the relationship between satisfaction and exercise adherence intention (Lee, 2008; Yoo and Ryu, 2010).

However, unlike other sports fields, there is not yet any research that takes an integrated view of the relationship between golf participants’ participation motivation, satisfaction and exercise adherence intention; thus, there is a need for analysis in this area. In particular, the need is
further emphasized, as the golf industry comprises the largest percentage of industrial relations as a single event in the sports sector, and if golf demand decreases, it could lead to decreases in consumption, a large part of the capital market, not to mention in the industry itself.

**Research questions**

The present study attempts to elaborate upon some hypothesized relationships in a golf range user’s behavior context. Based on self-determination theory (SDT), this study aims to identify the relationship between participation motivation and satisfaction of golf range users and investigate the factors that lead to participation satisfaction and foster motivation in golf sports for continuing exercise. Golf range users were selected as research subjects because the golf driving range is the starting point of the golf market and the golf driving range business is obviously closely related to the golf course business. Furthermore, this study aims to enable the people who enjoy golf to use golf driving ranges more frequently and to provide the data required for effective management and market strategy development of the golf industry.

To achieve the study objectives, we established the following research questions:

- **RQ1.** Is there a relationship between participation motivation and satisfaction in golf range users?
- **RQ2.** Is there a relationship between participation motivation and exercise adherence intention?
- **RQ3.** Is there a relationship between satisfaction and exercise adherence intention?

**Self-determination theory: a brief overview**

**Self-determination theory**

SDT is a theory about personality development and self-motivated behavior change. Fundamental to the theory is the principle that human beings have an innate organizational tendency toward growth, integration of the self and the resolution of psychological inconsistency (Ryan, 1995; Ryan and Deci, 2000), and this theory has been applied successfully to education and sport. SDT has shown the important role of different types of motivation factors in inducing various cognitive, behavioral and affective outcomes (Ryan and Deci, 1991; Frederick and Ryan, 1995).

These researchers argue that human behavior can be broadly categorized as intrinsically motivated, extrinsically motivated or amotivated. First, intrinsic motivated behaviors can occur without external rewards and are undertaken out of interest in the activity itself rather than the outcomes of the activity (Ryan and Deci, 1991). Second, extrinsically motivated behaviors can be found when the activity is carried out as a means to an end and not for its own sake. Finally, amotivation, which refers to the situation where individuals perceive no contingencies between outcomes and their action, is evident when people are neither intrinsically nor extrinsically motivated (Vallerand et al., 1992). The current SDT has evolved from early research on the factors shaping intrinsic motivation (Deci, 1971) into different types of motivated behaviors which can be ordered along a self-determination continuum. There are seven types of self-determination from lower to higher levels: amotivation, external regulation, introjected regulation, identified regulation, integrated regulation and intrinsic motivation.

Vallerand (1997) proposed a comprehensive model of motivation which argues that different motivational types are exerted through the satisfaction of certain psychological needs. Based on the proposed model and previous motivation literature in sport, this
research integrates several intrinsic and extrinsic motivations, namely, health-oriented motivation (HOM), achievement motivation (AM), pleasure-oriented motivation (POM), self-displayed motivation (SDM) and relationship building motivation (RBM), and proposes the role of integrated participation motivations (Figure 1).

Method

Research target
In this study, the authors selected users of golf ranges located in Seoul Metropolitan City and Gyeonggi-do province as the research subjects. Data collection was carried out by explaining the purpose and effects of preliminary research to the responsible personnel via phone and e-mail and by collecting data directly by visiting golf driving ranges over a span of two months after receiving approval for data collection. For sample selection, the authors collected a total of 320 questionnaires by applying a non-probability sampling method of convenience sampling. Of the collected questionnaires, the authors excluded 17 that were determined to be unreliable or to have spoiled (blank or double) responses, and 313 questionnaires were used for the actual analysis. The general characteristics of the participants in this study are shown in Table I.

Research tools
The authors used a questionnaire as the research tool for achieving the objectives of this study, and they modified and supplemented the tools that have already been used to test the reliability and validity of questionnaires in previous studies. The self-report questionnaires consisted chiefly of four categories: participation motivation, satisfaction, exercise adherence intention and general characteristics.

For participation motivation, the authors modified and supplemented questions used in Gill et al. (1983)’s study and participation motivation questions used in Kim (2005)’s study to fit the nature of this study and developed a total of 18 questions: HOM (six questions; improving physical strength, weight control, maintaining body balance, body care, alleviation of stress and emotional stability), AM (four questions; improving golf ability, acquiring new golf skill, self-fulfillment and acquiring honors), POM (four questions; fun, delight, happiness and vitality of living), SDM (two questions; self-expression and self-display) and RBM (two questions; promoting friendship and social interaction). For satisfaction, the authors modified and complemented questions used in Beard and Ragheb’s (1980) study to fit the nature of this study and developed a total of six questions: emotional satisfaction (two questions) and performance satisfaction (four questions). Exercise adherence intention consisted of three questions regarding possibility of exercise adherence, “likelihood to continue exercising” and “will to adhere to exercise” based on the questions used in Yoo and Ryu’s (2010) study. General
characteristics of the participants consisted of five questions regarding gender, age, golfing history, driving range usage frequency and golf practice time. In the questionnaire, questions regarding participation motivation, satisfaction and exercise adherence intention were measured on a five-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). The details of the questionnaire configuration are shown in Table II.

<table>
<thead>
<tr>
<th>Item</th>
<th>Item content</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health-oriented motivation</td>
<td>Health-oriented motivation (HOM)</td>
<td>6</td>
</tr>
<tr>
<td>Achievement motivation</td>
<td>Achievement motivation (AM)</td>
<td>4</td>
</tr>
<tr>
<td>Pleasure-oriented motivation</td>
<td>Pleasure-oriented motivation (POM)</td>
<td>4</td>
</tr>
<tr>
<td>Self-displayed motivation</td>
<td>Self-displayed motivation (SDM)</td>
<td>2</td>
</tr>
<tr>
<td>Relationship building motivation</td>
<td>Relationship building motivation (RBM)</td>
<td>2</td>
</tr>
<tr>
<td>Emotional satisfaction</td>
<td>Emotional satisfaction (ES)</td>
<td>2</td>
</tr>
<tr>
<td>Performance satisfaction</td>
<td>Performance satisfaction (PS)</td>
<td>4</td>
</tr>
<tr>
<td>General characteristics of research participants</td>
<td>General characteristics of research participants</td>
<td>5</td>
</tr>
<tr>
<td>Total number of questions</td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>

Table I.
General characteristics of research participants
<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency (N)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>197</td>
<td>65.0</td>
</tr>
<tr>
<td>Female</td>
<td>106</td>
<td>33.0</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 30 years</td>
<td>132</td>
<td>43.6</td>
</tr>
<tr>
<td>30s</td>
<td>44</td>
<td>14.5</td>
</tr>
<tr>
<td>40s</td>
<td>83</td>
<td>27.4</td>
</tr>
<tr>
<td>50s</td>
<td>38</td>
<td>12.5</td>
</tr>
<tr>
<td>Over 60 years</td>
<td>6</td>
<td>2.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Golfer history</th>
<th>Frequency (N)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 2 years</td>
<td>122</td>
<td>40.3</td>
</tr>
<tr>
<td>3 and over ~ under 4</td>
<td>65</td>
<td>21.5</td>
</tr>
<tr>
<td>5 and over ~ under 6</td>
<td>46</td>
<td>15.2</td>
</tr>
<tr>
<td>7 and over ~ under 8</td>
<td>28</td>
<td>9.2</td>
</tr>
<tr>
<td>Over 9 years</td>
<td>42</td>
<td>13.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driving range Usage frequency</th>
<th>Frequency (N)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once a week</td>
<td>46</td>
<td>15.2</td>
</tr>
<tr>
<td>Twice a week</td>
<td>69</td>
<td>22.8</td>
</tr>
<tr>
<td>3 times a week</td>
<td>87</td>
<td>28.7</td>
</tr>
<tr>
<td>4 times a week</td>
<td>59</td>
<td>19.5</td>
</tr>
<tr>
<td>Over 5 times a week</td>
<td>42</td>
<td>13.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Golf Practice time</th>
<th>Frequency (N)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 1 h</td>
<td>91</td>
<td>30.0</td>
</tr>
<tr>
<td>1 and over ~ under 2</td>
<td>124</td>
<td>40.9</td>
</tr>
<tr>
<td>3 and over ~ under 4</td>
<td>73</td>
<td>24.1</td>
</tr>
<tr>
<td>Over 5 h</td>
<td>15</td>
<td>5.0</td>
</tr>
</tbody>
</table>
Validity and reliability of the questionnaire

In this study, factor analysis was conducted to verify the construct validity of the questionnaire. Factor analysis was performed using a principle component analysis and was analyzed using the orthogonal rotation method of varimax rotation. Factors were extracted based on a minimum eigenvalue of 1.0 and only questions with factor loadings greater than 0.60 were selected. Moreover, the reliability of each factor was verified using Cronbach’s $\alpha$ coefficients, which assess the internal consistency of the questions.

Table III shows the results of the factor and reliability analysis for participation motivation. The factor analysis results show that with a total variance of 71.422 per cent, participation motivation consists of five sub-factors: health-oriented, achievement, pleasure-oriented, self-display and relationship building, and the reliability coefficients of participation motivation were satisfactory (0.701-0.876).

Table IV shows the factor and reliability analysis results for satisfaction. According to the factor analysis results, satisfaction consists of two sub-factors, emotional satisfaction and performance satisfaction, with a total variance of 72.248 per cent. The reliability coefficients for satisfaction were relatively satisfactory (0.789-0.836).

Table V shows the factor and reliability analysis results for exercise adherence intention. The factor analysis results show that one factor was extracted with a total variance of 67.185 per cent. The reliability coefficient for exercise adherence intention was 0.751.

Data analysis

Of the completed questionnaires, the authors excluded those deemed to have spoiled responses or low reliability, coded the remaining questionnaires with reliable data and used the following procedure using the statistical program SPSS Win ver. 18.0:

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOM</td>
<td>AM</td>
<td>POM</td>
<td>SDM</td>
<td>RBM</td>
</tr>
<tr>
<td>HOM 1</td>
<td>0.607</td>
<td>0.081</td>
<td>0.407</td>
<td>0.210</td>
<td>0.037</td>
</tr>
<tr>
<td>HOM 2</td>
<td>0.631</td>
<td>0.156</td>
<td>0.314</td>
<td>0.284</td>
<td>0.155</td>
</tr>
<tr>
<td>HOM 3</td>
<td>0.786</td>
<td>0.166</td>
<td>0.139</td>
<td>0.040</td>
<td>0.034</td>
</tr>
<tr>
<td>HOM 4</td>
<td>0.781</td>
<td>0.164</td>
<td>0.125</td>
<td>0.000</td>
<td>0.148</td>
</tr>
<tr>
<td>HOM 5</td>
<td>0.800</td>
<td>0.266</td>
<td>0.147</td>
<td>0.008</td>
<td>0.094</td>
</tr>
<tr>
<td>HOM 6</td>
<td>0.661</td>
<td>0.215</td>
<td>0.202</td>
<td>0.274</td>
<td>0.071</td>
</tr>
<tr>
<td>AM 1</td>
<td>0.181</td>
<td>0.674</td>
<td>0.195</td>
<td>0.230</td>
<td>0.170</td>
</tr>
<tr>
<td>AM 2</td>
<td>0.333</td>
<td>0.765</td>
<td>0.219</td>
<td>0.051</td>
<td>0.023</td>
</tr>
<tr>
<td>AM 3</td>
<td>0.283</td>
<td>0.797</td>
<td>0.166</td>
<td>0.117</td>
<td>0.013</td>
</tr>
<tr>
<td>AM 4</td>
<td>0.080</td>
<td>0.719</td>
<td>0.187</td>
<td>0.029</td>
<td>0.283</td>
</tr>
<tr>
<td>POM 1</td>
<td>0.096</td>
<td>0.233</td>
<td>0.809</td>
<td>0.026</td>
<td>0.167</td>
</tr>
<tr>
<td>POM 2</td>
<td>0.226</td>
<td>0.205</td>
<td>0.820</td>
<td>0.066</td>
<td>0.132</td>
</tr>
<tr>
<td>POM 3</td>
<td>0.323</td>
<td>0.183</td>
<td>0.803</td>
<td>0.080</td>
<td>0.110</td>
</tr>
<tr>
<td>POM 4</td>
<td>0.416</td>
<td>0.200</td>
<td>0.614</td>
<td>0.263</td>
<td>0.041</td>
</tr>
<tr>
<td>SDM 1</td>
<td>0.072</td>
<td>0.062</td>
<td>0.097</td>
<td>0.842</td>
<td>0.168</td>
</tr>
<tr>
<td>SDM 2</td>
<td>0.190</td>
<td>0.196</td>
<td>0.093</td>
<td>0.793</td>
<td>0.139</td>
</tr>
<tr>
<td>RBM 1</td>
<td>0.190</td>
<td>0.068</td>
<td>0.110</td>
<td>0.331</td>
<td>0.802</td>
</tr>
<tr>
<td>RBM 2</td>
<td>0.098</td>
<td>0.241</td>
<td>0.172</td>
<td>0.071</td>
<td>0.846</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>7.415</td>
<td>1.649</td>
<td>1.424</td>
<td>1.305</td>
<td>1.063</td>
</tr>
<tr>
<td>% variance</td>
<td>41.192</td>
<td>9.159</td>
<td>7.912</td>
<td>7.251</td>
<td>5.905</td>
</tr>
<tr>
<td>% Total variance</td>
<td>41.192</td>
<td>50.352</td>
<td>58.264</td>
<td>65.515</td>
<td>71.422</td>
</tr>
<tr>
<td>Cronbach’s $\alpha$</td>
<td>0.876</td>
<td>0.828</td>
<td>0.871</td>
<td>0.701</td>
<td>0.753</td>
</tr>
</tbody>
</table>

Table III. Validity and reliability test results for participation motivation
• a frequency analysis was performed to examine the general characteristics of the participants;
• a factor and reliability analysis was performed to test the reliability and validity of the research tools; and
• a correlation analysis and a multiple regression analysis were performed to examine the relationship between participation motivation, satisfaction and exercise adherence intention.

Results
Correlation coefficients for participation motivation, satisfaction and exercise adherence intention
Correlation analysis was performed to identify the relationship between participation motivation, satisfaction and exercise adherence intention. The results indicated high correlation coefficients between participation motivation and emotional satisfaction (in descending order): AM ($r = 0.683$), HOM ($r = 0.573$), POM ($r = 0.557$), RBM ($r = 0.397$) and SDM ($r = 0.390$). The correlations between participation motivation and performance satisfaction were (in descending order) as follows: HOM ($r = 0.540$), POM ($r = 0.510$), AM ($r = 0.469$), SDM ($r = 0.225$) and RBM ($r = 0.212$). The correlation analysis between participation motivation and exercise adherence intention showed the following results (in descending order): POM ($r = 0.371$), AM ($r = 0.332$), HOM ($r = 0.237$), RBM ($r = 0.161$) and SDM ($r = 0.149$). Finally, in the results of correlation analysis between satisfaction and

<table>
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<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ES</td>
<td>PS</td>
</tr>
<tr>
<td>ES 1</td>
<td>0.821</td>
<td>0.254</td>
</tr>
<tr>
<td>ES 2</td>
<td>0.865</td>
<td>0.176</td>
</tr>
<tr>
<td>PS 1</td>
<td>0.289</td>
<td>0.767</td>
</tr>
<tr>
<td>PS 2</td>
<td>0.109</td>
<td>0.867</td>
</tr>
<tr>
<td>PS 3</td>
<td>0.169</td>
<td>0.795</td>
</tr>
<tr>
<td>PS 4</td>
<td>0.332</td>
<td>0.715</td>
</tr>
</tbody>
</table>

Table IV.
Validity and reliability test results for satisfaction
<table>
<thead>
<tr>
<th>Item</th>
<th>Cronbach’s $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Cronbach’s $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EAI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table V.
Validity and reliability test results for exercise adherence intention
<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Cronbach’s $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EAI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
exercise adherence intention, emotional satisfaction ($r = 0.330$) had the highest correlation, followed by performance satisfaction ($r = 0.259$; Table VI).

**Impact of participation motivation on emotional satisfaction**

Table VII shows the results of the multiple regression analysis performed to identify the impact of golf range users’ participation motivation on emotional satisfaction. According to the results, among the sub-factors of participation motivation, HOM, AM, POM and SDM were shown to have a significant effect on emotional satisfaction at the $p < 0.05$ level. However, RBM did not affect emotional satisfaction. The relative influence of participation motivation on emotional satisfaction was as follows: AM ($\beta = 0.447$), HOM ($\beta = 0.171$), POM ($\beta = 0.155$) and SDM ($\beta = 0.098$). Meanwhile, the explanatory power for the impact of participation motivation on emotional satisfaction was 55.1 per cent ($R^2 = 0.551$).

**Impact of participation motivation on performance satisfaction**

Table VIII shows the results of the multiple regression analysis performed to identify the impact of golf range users’ participation motivation on performance satisfaction. According to the results, among the participation motivation sub-factors, AM and POM had a significant impact on performance satisfaction at the $p < 0.05$ level. However, HOM, SDM and RBM did not affect performance satisfaction. The relative influence of participation motivation on performance satisfaction was as follows: POM ($\beta = 0.298$) and AM ($\beta = 0.203$). Meanwhile, the explanatory power for the impact of participation motivation on emotional satisfaction was 16.4 per cent ($R^2 = 0.164$).

<table>
<thead>
<tr>
<th>Variable</th>
<th>HOM</th>
<th>AM</th>
<th>POM</th>
<th>SDM</th>
<th>RBM</th>
<th>ES</th>
<th>PS</th>
<th>EAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AM</td>
<td>0.555**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POM</td>
<td>0.617**</td>
<td>0.545**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDM</td>
<td>0.376**</td>
<td>0.341**</td>
<td>0.325**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RBM</td>
<td>0.364**</td>
<td>0.396**</td>
<td>0.363**</td>
<td>0.425**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ES</td>
<td>0.573**</td>
<td>0.683**</td>
<td>0.557**</td>
<td>0.390**</td>
<td>0.397**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS</td>
<td>0.540**</td>
<td>0.468**</td>
<td>0.510**</td>
<td>0.225**</td>
<td>0.212**</td>
<td>0.492**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>EAI</td>
<td>0.237**</td>
<td>0.332**</td>
<td>0.371**</td>
<td>0.143**</td>
<td>0.161**</td>
<td>0.330**</td>
<td>0.259**</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: ** p < 0.01

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>B</th>
<th>SE</th>
<th>$\beta$</th>
<th>T</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.245</td>
<td>0.183</td>
<td>0.171</td>
<td>3.198</td>
<td>0.002</td>
</tr>
<tr>
<td>HOM</td>
<td>0.187</td>
<td>0.058</td>
<td>0.447</td>
<td>8.867</td>
<td>0.000</td>
</tr>
<tr>
<td>AM</td>
<td>0.436</td>
<td>0.049</td>
<td>0.155</td>
<td>2.956</td>
<td>0.003</td>
</tr>
<tr>
<td>POM</td>
<td>0.165</td>
<td>0.056</td>
<td>0.098</td>
<td>2.186</td>
<td>0.030</td>
</tr>
<tr>
<td>SDM</td>
<td>0.087</td>
<td>0.040</td>
<td>0.060</td>
<td>1.321</td>
<td>0.187</td>
</tr>
<tr>
<td>RBM</td>
<td>0.053</td>
<td>0.040</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: $R^2 = 0.551$; $F = 72.927$; $p = 0.000$
Impact of participation motivation on exercise adherence intention

Table IX shows the results of the multiple regression analysis performed to identify the impact of participation motivation on exercise adherence intention, and according to the results, among the participation motivation sub-factors, HOM, AM and POM had a significant impact on exercise adherence intention at the $p < 0.05$ level. However, SDM and RBM did not affect exercise adherence intention. The relative influence of participation motivation on exercise adherence intention was as follows: HOM ($\beta = 0.312$), POM ($\beta = 0.237$) and AM ($\beta = 0.195$). Meanwhile, the explanatory power for the impact of participation motivation on exercise adherence intention was 36.6 per cent ($R^2 = 0.366$).

Impact of satisfaction on exercise adherence intention

Table X shows the results of the multiple regression analysis performed to identify the impact of golf range users’ satisfaction on exercise adherence intention. Among the satisfaction sub-factors, emotional satisfaction and performance satisfaction both had a significant impact on exercise adherence intention at the $p < 0.05$ level. The relative influence of satisfaction on exercise adherence intention was the strongest for emotional satisfaction ($\beta = 0.456$), followed by performance satisfaction ($\beta = 0.108$). Meanwhile, the explanatory power for the impact of satisfaction on exercise adherence intention was approximately 25.3 per cent ($R^2 = 0.253$).
Discussion

Anticipated findings and managerial implications

The purpose of this study was to identify the relationship between golf range users’ participation motivation, satisfaction and exercise adherence intention. Following is a discussion focusing on the major findings derived from the correlation analysis and multiple regression analysis.

The authors identified the impact of golf range users’ participation motivation on satisfaction and found that the participation motivation sub-factors of HOM, AM, POM and SDM have a significant impact on emotional satisfaction, while AM and POM have a significant impact on performance satisfaction. Moreover, there is a positive relationship between golf range users’ participation motivation sub-factors, except RBM and exercise adherence intention. Some managerial implications of these findings are that golf driving range personnel should take an interest in HOM, AM, POM, SDM, etc., among the various motivations that users can have in the participation process and devise ways to increase their levels. In particular, intensive focus on inducing users’ AM and POM may be necessary, as among the participation motivation sub-factors, AM and POM were found to be effective in enhancing both emotional satisfaction and performance satisfaction.

The positive relationship among golf range users’ satisfaction sub-factors – emotional and performance satisfaction and exercise adherence intention – indicates that as participants who are satisfied with golf exercise participation are more likely to demonstrate exercise adherence, it may be necessary to enhance the users’ satisfaction. Therefore, to enable users to continue with golf exercise, golf driving range personnel should devise various marketing plans to improve achievement and emotional satisfaction; in particular, the methods and measures to improve the emotional satisfaction of users should be given prime consideration.

Conclusion and suggestions

Conclusion

By analyzing the relationship between golf range users’ participation motivation, satisfaction and exercise adherence intention, this study aims to provide a higher quality service to golf range users and to provide the basic data required for the popularization of golf through increased participation in golf exercise.

To achieve the above objectives, users of golf ranges located in Seoul Metropolitan City and Gyeonggi-do province were surveyed through convenience sampling, and a total of 313 questionnaires were completed. Then, frequency analysis, factor analysis, reliability analysis, correlation analysis and multiple regression analysis were performed using the statistical program, SPSS Win ver. 18.0, through which the following results were obtained:

- among the participation motivation sub-factors, HOM, AM, POM and SDM had a significant impact on emotional satisfaction, while AM and POM had a significant impact on performance satisfaction;
- among the participation motivation sub-factors, HOM, AM and POM had a significant impact on exercise adherence intention; and
- both emotional satisfaction and performance satisfaction, the sub-factors of satisfaction, had a significant impact on exercise adherence intention; in particular, emotional satisfaction had a higher relative influence on exercise adherence intention compared to performance satisfaction.

To summarize the above findings, golf range users’ participation motivation, HOM, AM and POM have a positive impact on improving performance satisfaction and emotional satisfaction. Moreover, performance satisfaction and emotional satisfaction generated by the
comfortable athletic facilities of the driving range, sense of accomplishment, relief of stress following exercise, etc., have a positive impact on exercise adherence. However, SDM and RBM with an objective other than relationships based on friendship did not affect exercise adherence intention. Therefore, to enhance the satisfaction and exercise adherence intention of golf range users, means to induce HOM, AM and POM which should be actively sought.

Study limitations and future research suggestions

Based on the issues encountered during the implementation process of this study, study limitations and suggestions for future research directions are as follows:

- Major limitation pertains to the study context. As data were collected with a limited sample of golf range users in Seoul Metropolitan City and Gyeonggi-do province, it is difficult to completely rule out the possibility that the findings indicate characteristics unique to these groups. Thus, taking into consideration these potential limitations, subsequent empirical research should cover additional sport fields and countries to enhance the possibility of generalizing this study’s findings.

- This study did not consider differences according to the general characteristics of the golf range users such as gender, age, golfing history, golf driving range usage frequency, golf practice time, etc. Therefore, follow-up studies need to analyze the differences in participation motivation, satisfaction and exercise adherence intention according to the socio-demographic, psychological and behavioral characteristics of the golf range users.

- While this study only used a quantitative research method of using a questionnaire as the research tool to identify the relationships between golf range users’ participation motivation, satisfaction and exercise adherence intention, follow-up studies should conduct an in-depth analysis of the relationships between golf range users’ participation motivation, satisfaction and exercise adherence intention through qualitative research methods using in-depth interviews, focus groups, etc.

References


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Influence of innovation competence on firm level competitiveness: an exploratory study

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Shri Mata Vaishno Devi University, University in Katra, Jammu and Kashmir, India, and
Abid Sultan and Nasreen Chashti
Department of Commerce, Islamia College of Science and Commerce Srinagar, Kashmir, India

Abstract
Purpose – The dynamics of the competitive performance of the small medium firms is an evolving field of research in the developing countries like India. The influence of the innovation on the competitive performance of the firms is still an evolving area in India. This paper aims to explore the influence of the innovation on the competitive performance. The study is based upon the agro-food processing industry of the Jammu and Kashmir state of India.

Design/methodology/approach – The paper is based upon the exploratory design. It uses quantitative as well as qualitative method for the firm level analysis of competitiveness. The aggregate index method has been used to construct the innovation competence and total competitive performance index. The regression analysis is used for describing the model based upon the primary data.

Findings – The results of the study provide for a significant relationship between the innovation competence and firm level competitiveness. It describes the position of the agro-food processing firms under study with respect to the innovation competence index score and total competitiveness performance index.

Research limitations/implications – The paper provides for the managerial implications of strategically incubating the innovation-based competence for the firms in specific geographical areas. The policy implications in terms of developing specific clusters and incubators for incremental and radical innovations can be derived, in regional economies.

Originality/value – The paper discusses the issue of interaction of innovation competence and firm level competitiveness of the agro-food processing industry, which is dynamic, specifically in the developing states. The paper discussed unique methodology of using aggregate index method for defining the innovation competence and competitiveness for the firms where the consistency of data is a major issue for such a complex phenomenon.

Keywords Competitiveness, Innovation, Firm level competitiveness, Competitive performance

Paper type Research paper

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The authors acknowledge the support of Indian Council of Social Science and Research for their support in funding the research for Competitiveness of Food Processing Units at Shri Mata Vaishno Devi University, Katra, J&K. The authors would like to thank all the industry participants for generously giving their time and for sharing their information and insights so willingly. The authors would also like to acknowledge their reviewers for their invaluable advice on developing this paper.
Introduction
The competitiveness in the manufacturing sector of developing countries, like India, is based upon creating scope for the strategic interventions through the development of distinct dynamic capabilities (Teece et al., 1997). With the increase in the global competition and changing taste and preferences of the consumers, the agro-food processing firms have a challenge to respond with defining innovations in the product or process. The innovation could be radical or incremental that provides for an either competitive stability or creates a dramatic impact with disruptions in an industry and at the marketplace (Srinivasan et al., 2002; Tellis et al., 2009). The innovations and the capability to innovate with advances in technology, defining product life cycles, dynamic customer activities and re-defining international as well as local competition has become an absolute necessity for defining the competitiveness of a firm. The firms have a challenge of developing the innovation competence (which is same as competence based on innovation) for defining their competitive landscape. The challenge is more for the firms in developing countries where the scope for incubating the innovations by the firms is under intense pressure of competitive performance.

The innovation competence is more of secondary consideration in the industries where strategic decision-making is under the pressure of cost and price competitiveness. The industry sectors where the price-based competition and influence of contributions from the informal sectors are significant call for an attention of creating an approach of developing various capabilities that add to the competence. The dynamic nature of capabilities provides for an evolving resource-based competence which contributes to the competitive performance of the firms in such industry sectors. Innovation competence thus provides the dynamic capability to the firms which help them to define their competitiveness. For firms in such industry, however, the influence of innovation competence on the firm level competitiveness is an area that needs to be explored. The paper, therefore, is based upon the exploratory study conducted to understand whether innovation competence can be instrumental in defining the firm level competitiveness. The unit of analysis for the study is the agro-food processing firms in the state of Jammu and Kashmir (J&K) in India. The study is significant in terms of creating an argument to consider the incubation and development of innovation competence in strategic decision-making. This would be instrumental in providing competitiveness to the firms that are in a fragmented industrial sector, i.e. agro-food processing industry. The industry has high influence of an unorganised sector and price-based competitive pressures. Also, the changing social and economic fabric of the Indian society is pushing the demand for the processed foods. The Indian agro-food processing industry is highly fragmented and heterogeneous.

The paper is divided in four different sections:

1. the first part discusses the status of agro-food processing industry in India;
2. the second part is the review of literature;
3. the third part discusses the research methodology; and
4. the last part discusses the findings of the research, i.e. how innovation based competence has an influence on the competitive performance of the agro-food processing firms in the state of J&K in India.

The structure of agro-food-based processing industry in India
Indian domestic food market is expected to grow by 40 per cent and will have market size of US$344bn by 2025 (Singh et al., 2012). The Indian food processing sector offers significant
potential for the value addition which can lead to the income and employment generation as well (Ali et al., 2009). The share of Indian food processing industry in Indian manufacturing in terms of an income and profit is 5.86 and 11.95 per cent, respectively (Annual Survey of Industry, 2012/2013). However, in the Indian food processing industry, only 2 per cent of India’s total agricultural and food produce is processed. It accounts for less than 1.5 per cent of international food trade. Ministry of Food Processing in India, in its Vision document 2015, has estimated the processing level of perishable products to increase from 6 to 20 per cent, value addition to increase from 20 to 35 per cent and India’s share in global food trade to increase from 1.5 to 3 per cent. The performance of the agro-food processing in Indian food processing industry is summarized in Table I.

The agro-processing industry is still in an infancy stage in a promising and growing industrial sector of India. However, the agro-food processing industry in India is facing certain challenges such as road connectivity, electricity, transport, cold storage, capital, warehouses and professional management (Ali et al., 2009; Majumdar, 2012). India can take advantage of this promising industry by recognizing and developing the states that are rich in natural endowments as well as have advantages in terms of climate and soil. States like J&K, which is the highest temperate fruit producing state of India, with its rich agriculture and horticulture produces, offers immense economic opportunities to the agro-food processing.

With more than 70 per cent of the population dependent upon the agriculture and horticulture, the state of J&K offers scope for the agro-food processing and can establish niche markets for its products at regional, national and international level, based upon the geo-climatic advantages of its produce (Table II).

The contemporary geo-political environment is propelling the growth of entrepreneurial activities in the state of J&K, but still there is a significant scope for the growth and development. The agro-food processing units of the State are in an emergent need of a

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Food processing industry (FPI)</th>
<th>Agro-food processing (AFP)</th>
<th>Percentage share of AFP in food processing industry</th>
</tr>
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<tbody>
<tr>
<td>Fixed capitala</td>
<td>35,095</td>
<td>31,925</td>
<td>90.97</td>
</tr>
<tr>
<td>Gross value addedb</td>
<td>13,398,580</td>
<td>11,643,564</td>
<td>86.9</td>
</tr>
<tr>
<td>Incomec</td>
<td>6,634,905</td>
<td>5,457,234</td>
<td>82.25</td>
</tr>
<tr>
<td>Profitd</td>
<td>4,212,637</td>
<td>3,333,353</td>
<td>79.13</td>
</tr>
<tr>
<td>Employment (no.)</td>
<td>1,990,478</td>
<td>1,580,092</td>
<td>79.38</td>
</tr>
<tr>
<td>Fixed capitalb</td>
<td>1,547,183</td>
<td>1,314,442</td>
<td>84.96</td>
</tr>
</tbody>
</table>

Note: Value in Rs. Lakh
Source: ASI data for year 2012-2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Crop</th>
<th>Area</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Food crops</td>
<td>1037.50 (000 hectares)</td>
<td>1,587,200 MT</td>
</tr>
<tr>
<td>2</td>
<td>Fresh fruit</td>
<td>230,409 (hectares)</td>
<td>1,929,349 MT</td>
</tr>
<tr>
<td>3</td>
<td>Dry cultivation</td>
<td>110,963 (hectares)</td>
<td>2,157,752 MT</td>
</tr>
</tbody>
</table>

Source: State Digest of Statistics (2012-2013)
strategic reinforcement for their survival and growth. There is a requirement to create, build and sustain competitiveness of the agro-food processing firms in the State. Manufacturing units of the agro-food processing sector provide for the potential in providing for the diverse requirements of the consumers and generation of value-based employment in the state as well as at the national level. The firms of J&K are in the process of defining their dynamic capabilities and competitiveness. The challenges of innovation-based competence for the agro-food processing firms are the highly heterogeneous industry structure and an increasing competition with international and national players redefining the competitive landscape in the food processing industry. The innovation competence and firm level competitiveness are required to be understood in reference with the available literature.

Review of literature

Despite of having a large availability of rich resource base, the concept of competitiveness is still without any standard definition, determinants and methods of measurement. This is mainly due to the lack of consensus among the academicians, economists, practitioner and researchers about the definition of the competitiveness and its measurement method (Chaudhuri and Ray, 1997; Siggel, 2006). Competitiveness measurement is still a developing area of research. Studies often adopt their own definition and choose a specific measurement method or composite scale, depending upon the objectives of the study (Latruffe, 2010). The review of literature reveals three levels of competitiveness – nation, industry and firm level. Lately, firm level competitiveness has been regarded as an important base for building the industry and nation level competitiveness (Porter, 1990; Chaudhuri and Ray, 1997; Ambastha and Momaya, 2004). Firm level competitiveness depends upon the competencies of the firm, and these competencies are internal to the firm (Ambastha and Momaya, 2004; Porter, 1990; Nelson, 1992).

The review of literature available in the field of strategic management, strategy and economics, based upon the relevance and high citations, provides a range of variables and resources that are internal to the firm and have potential for contributing toward building, sustaining and maintaining competitiveness at the firm level. These variables include both tangible as well as intangible variables like firms’ strategies, structures, competencies and capabilities to innovate, the ability to market, supporting marketing and distribution systems, technology, productivity, human resources infrastructure, operations management, innovation, supply chain management, quality systems, etc. (Prahalad and Hamel, 1990; Nelson, 1992; Ambastha and Momaya, 2004 and Chaudhuri and Ray, 1997). Among the various variables, innovation has become a compelling necessity for the firm level competitiveness, especially in the agro-food processing industry.

The importance of the innovation competence in the economic rent generation was first highlighted by the Schumpeter during 1940s followed by Solow (1957). Innovation refers to the changes in the processes and products (Priede, 2013), with inputs like financial resources, commitment, R&D, etc., and output in terms of new products, number of patents, new manufacturing processes, etc. (Murimbika and Urban, 2014). Innovation is the way for the firms to respond to the market changes, technology changes, customer changes and competition (Dougherty, 1992). Innovation, incremental as well as radical, is one of the major reasons for the success of firms in present competitive arena. It is an instrumental in creating a firm’s responsiveness toward dynamic business environment. The responsiveness can in the form of finding innovative ways to the routine operations of the
manufacturing. As pointed by Dougherty and Hardy (1996), competitive firms link innovations to the organization in three manners:

1. make innovation a part of organization strategy;
2. second collaboration with structures and processes to face challenges creatively; and
3. last ensuring the availability of the resources.

De Jong and Marsili (2006) advocated that the innovation is not a responsibility of a team or department but a job of everyone in the firm and is reflected by the management planning, attitude and external orientation. The review of literature supports that the firm’s innovative behavior provides for growth, competitive advantage and competitiveness in the long-term perspective (Dougherty and Hardy, 1996; Grinyer et al., 1988; Philip and Wen, 1998).

The definition of competitiveness has been varying over the years on the industry and market basis. Along with the definition, there is not a single measure for the competitiveness measurement. Competitiveness is often defined as the output determinant business performance of the firms. The literature of operation strategy and competitiveness suggest a composite measure for evaluating the firm’s competitive performance. This is in view of the fact that a single measure fails to evaluate all the dimensions of the performance (Buckley et al., 1988). The literature provides for four factors for measuring the competitive performance of the firms that are cost, quality, flexibility and dependability (Kumar et al., 1999; Shahnawaz, 2015; Hung et al., 2015; Prester, 2013). Cleveland et al. (1989) held inclusion of the financial parameter and marketing parameter important for determining the competitive performance of the firms. Based upon the various parameters, an aggregate measure for the competitive performance over these parameters could be developed for defining the competitiveness at the firm level. There are literature describing innovation-based competence as well as competitiveness with reference to the definition, resource base, but the interaction between both innovation and the competitiveness for the manufacturing units in the developing areas required further exploration. Hence, the present research paper explores the innovation competence with respect to competitiveness among agro-food processing industries in developing region like J&K in India.

**Research methodology**

Based upon the gap determined in the literature the objective of the paper was to examine the influence of innovation competence on the total competitive performance of the agro-food processing firms and evaluate the level of innovation competence among the existing agro-food processing units of the J&K state in India. To understand the phenomena of influence and unexplored status of these manufacturing firms in terms of their innovation capabilities, an exploratory research design has been adopted. A total of 75 agro-food-based manufacturing units were surveyed, of which data from 61 firms was found to be accurate for the data analysis. Data have been collected through a well-structured questionnaire based upon the five-point Likert scale.

To have a uniform standard for the innovation competence, a questionnaire was prepared to record the innovations of the firms based upon the various parameters such as new products introduced during the past five years, innovations introduced in human resource and team management, facilities in the firm for quality enhancement of existing products and facility in the firm for identification of the new manufacturing process (Table III). Cronbach’s coefficient alpha of these statements was found to be 0.749 and hence validates the questionnaire. The responses obtained were aggregated to get a composite score which was defined as the innovation competence index (ICI). An index in this study
represents a single composite measure by aggregating different variables by taking averages or summation (Fischer and Schornberg, 2007; Momaya, 1998).

Keeping in view the review of literature regarding competitive performance, six variables have been used to define the total competitive performance of the firms, i.e. sales performance, profit after tax performance, cost, quality, flexibility and dependability. Based upon the literature review, cost, quality, flexibility and dependability variables were defined through the statements for each and every unit. The detail of the items and their descriptive mean values are tabulated in Table IV. The data pertaining to the profit after tax (PAT) and sales was collected in absolute values and was transformed into the likert scale to form PAT index and sales index. The competitiveness is not based upon a single factor. The role of one individual factor of business performance cannot be a basis for the pursuit for business goals. Hence, to have a broader measure of business performance for defining the competitiveness, factors have been aggregated to formulate single composite index, called as total competitive performance index (TCPI) (Cleveland et al., 1989). This index has been used as a proxy for the firm level competitiveness. To infer the influence of innovation competence on the firm level competitiveness of the selected units, a hypothesis is formulated i.e.:

$$H_0.$$ Innovation competence does not influence total competitive performance as a proxy for firm level competitiveness.

$$H_1.$$ Innovation competence influence total competitive performance as a proxy for firm level competitiveness.

The competitive performance index, i.e. the proxy for firm level competitiveness, has been regressed with the ICI to know the influence of innovation competence on the TCPI, i.e. firm level competitiveness (Cleveland et al., 1989). The TCPI, i.e. firm level competitiveness, is taken as dependent variable over the innovation competence as an independent variable. The validity of the model is found to be statistically significant at 5 per cent level of significance with $F$ value of 26.72.

Further, to explore the status of the firms under the research with reference of the TCPI and ICI, the firms are arranged in the four categories i.e. low, low medium, medium high and high (Avella et al., 2001). The cross-table description explains the status of firms under survey and their respective indexes.

**Discussion**

The state of J&K derives heavily out of its agriculture and horticulture produce as discussed earlier. With high geo-political disturbances and less developed industrial sector, the scope

<table>
<thead>
<tr>
<th>Statements of innovation competence index</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>New products introduced on an average period of past five years</td>
<td>61</td>
<td>0.00</td>
<td>0.48</td>
<td>0.1239</td>
<td>0.15832</td>
</tr>
<tr>
<td>Innovation(s) introduced in human resource/team management on an average period of past five years</td>
<td>61</td>
<td>0.00</td>
<td>0.48</td>
<td>0.0325</td>
<td>0.10134</td>
</tr>
<tr>
<td>Facility in the firm for quality enhancement of existing products</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.0738</td>
<td>0.14131</td>
</tr>
<tr>
<td>Facility in the firm for identification of the new manufacturing process</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.0246</td>
<td>0.09942</td>
</tr>
</tbody>
</table>

**Table III.** Descriptive statistics of statements used for innovation index

**Source:** Author’s calculation based upon primary data
<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Variables</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Established quality testing procedure in the firm</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.2459</td>
<td>0.1540</td>
</tr>
<tr>
<td>2</td>
<td>Level of quality acceptance in the final products of the firm</td>
<td>61</td>
<td>0.00</td>
<td>0.70</td>
<td>0.2957</td>
<td>0.1321</td>
</tr>
<tr>
<td>3</td>
<td>Acceptance level of product quality by distributors/retailers/customers</td>
<td>61</td>
<td>0.00</td>
<td>0.70</td>
<td>0.2692</td>
<td>0.1614</td>
</tr>
<tr>
<td>4</td>
<td>Level of quality certifications assimilated by the firm</td>
<td>61</td>
<td>0.00</td>
<td>0.70</td>
<td>0.1521</td>
<td>0.2053</td>
</tr>
</tbody>
</table>

**Cost index statements**

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Statements</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Capability of the firm to procure raw materials at low cost</td>
<td>61</td>
<td>0.00</td>
<td>0.48</td>
<td>0.2061</td>
<td>0.1552</td>
</tr>
<tr>
<td>2</td>
<td>Capability of the firm to keep costs low based upon quality interventions</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.1210</td>
<td>0.1832</td>
</tr>
<tr>
<td>3</td>
<td>Capability of the firm to keep costs low based upon inventory management</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.2061</td>
<td>0.1736</td>
</tr>
<tr>
<td>4</td>
<td>Capability of the firm to keep costs low based upon capacity management</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.0592</td>
<td>0.1325</td>
</tr>
<tr>
<td>5</td>
<td>Effectiveness of sound working capital management in the firm</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.2159</td>
<td>0.1609</td>
</tr>
</tbody>
</table>

**Dependability index statements**

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Statements</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ability of the firm to deliver products in the specified time</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.3069</td>
<td>0.1175</td>
</tr>
<tr>
<td>2</td>
<td>Ability of the firm to deliver products in the specified price</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.0246</td>
<td>0.0994</td>
</tr>
</tbody>
</table>

**Flexibility index statements**

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Statements</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Provision for operating on high volume on consistent basis</td>
<td>61</td>
<td>0.00</td>
<td>0.48</td>
<td>0.0946</td>
<td>0.1505</td>
</tr>
<tr>
<td>2</td>
<td>Planning and control system in the firm for production</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.2023</td>
<td>0.1527</td>
</tr>
<tr>
<td>3</td>
<td>Scheme for maintaining optimum inventory level and forecasting requirement in the firm</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.2188</td>
<td>0.1730</td>
</tr>
<tr>
<td>4</td>
<td>Standard system for standard procedure to be followed in production in the firm</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.3049</td>
<td>0.1608</td>
</tr>
<tr>
<td>5</td>
<td>Standard system for standard procedure to be followed in sourcing of raw materials in the firm</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.1332</td>
<td>0.1604</td>
</tr>
<tr>
<td>6</td>
<td>Provision for adjusting the packaging size in the firm as per demand</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.3127</td>
<td>0.1573</td>
</tr>
<tr>
<td>7</td>
<td>Provision for supplying as per variations as per buyers’ requirements</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.2690</td>
<td>0.1420</td>
</tr>
<tr>
<td>8</td>
<td>Facility in your firm for managing the market environment</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.0769</td>
<td>0.1481</td>
</tr>
<tr>
<td>9</td>
<td>Ability of the firm to respond short run changes in schedule</td>
<td>61</td>
<td>0.00</td>
<td>0.48</td>
<td>0.1657</td>
<td>0.1555</td>
</tr>
</tbody>
</table>

**Descriptive analysis of various index constructs**

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Statements</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quality-based competitive index</td>
<td>61</td>
<td>0.00</td>
<td>0.67</td>
<td>0.2225</td>
<td>0.1412</td>
</tr>
<tr>
<td>2</td>
<td>Cost-based competitive index</td>
<td>61</td>
<td>0.00</td>
<td>0.58</td>
<td>0.1616</td>
<td>0.1234</td>
</tr>
</tbody>
</table>

(continued)
for development streams out of the immense pecuniary prospects in the agro-food processing and allied activities. The State holds distinction in the domestic and international markets for its various produce such as saffron, apple, cherry, walnut, etc. The State needs to leverage the opportunity through building upon the innovative competence of the manufacturing firms. Over the survey, it is found that the incremental as well as radical innovation in terms of new processes and new technology, respectively, has been absolutely negligible for the firms in J&K. The firms have been comparatively rated low in terms of introducing new products; yet, they are innovating in terms of new packaging, innovative products and defining new market segments, i.e. more of an incremental innovation. The ICI is found to be uniformly low across the sample firms. More than 50 per cent of the firms under the survey are in the range of low ICI. There are 13 firms which have high ICI; yet, the score of ICI is below one that indicates very low aggregate score of the innovation indices (Table V). The innovation competence is an underinvested and underestimated area of the agro-food processing firms in J&K. Barring few, most of the firms are launching the product on the basis of either intuition or imitation of the international and national products. The innovation is being carried on the basis of rule of thumb without collection of information from low-cost available information sources like internet, magazines, publications from government agencies, etc.

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Variables</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Flexibility-based competitive index</td>
<td>61</td>
<td>0.00</td>
<td>0.57</td>
<td>0.1974</td>
<td>0.10664</td>
</tr>
<tr>
<td>4.</td>
<td>Dependability-based competitive index</td>
<td>61</td>
<td>0.00</td>
<td>0.60</td>
<td>0.1990</td>
<td>0.09943</td>
</tr>
<tr>
<td>5.</td>
<td>PAT-based competitive index</td>
<td>61</td>
<td>0.00</td>
<td>0.70</td>
<td>0.4010</td>
<td>0.26416</td>
</tr>
<tr>
<td>6.</td>
<td>Sales-based competitive index</td>
<td>61</td>
<td>0.00</td>
<td>0.70</td>
<td>0.4092</td>
<td>0.25271</td>
</tr>
<tr>
<td>7.</td>
<td>TCPI</td>
<td>61</td>
<td>0.22</td>
<td>3.82</td>
<td>1.5892</td>
<td>0.73813</td>
</tr>
<tr>
<td>8.</td>
<td>ICI</td>
<td>61</td>
<td>0.00</td>
<td>0.50</td>
<td>0.0651</td>
<td>0.09726</td>
</tr>
</tbody>
</table>

**Table IV.**  
*Source: Author’s calculation based upon primary data*

<table>
<thead>
<tr>
<th>TCPI (0.22 to 3.81)</th>
<th>Low</th>
<th>Medium low</th>
<th>Medium high</th>
<th>High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICI (0 to 0.49)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>Firm 17</td>
<td>Firm 1</td>
<td>Firm 32</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Firm 37</td>
<td></td>
<td>Firm 43</td>
<td></td>
</tr>
<tr>
<td>Medium high</td>
<td>Firm 49</td>
<td>Firm 11</td>
<td>Firm 51</td>
<td>Firm 51</td>
<td>0</td>
</tr>
<tr>
<td>Medium low</td>
<td>59</td>
<td>Firm 35</td>
<td>Firm 33</td>
<td>Firm 50</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Firm 41</td>
<td>Firm 51</td>
<td>Firm 50</td>
<td>Firm 34</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firm 29</td>
<td>Firm 51</td>
<td>Firm 30</td>
<td>Firm 46</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firm 38</td>
<td>Firm 51</td>
<td>Firm 46</td>
<td>Firm 46</td>
<td></td>
</tr>
<tr>
<td></td>
<td>58</td>
<td>Firm 60</td>
<td>Firm 36</td>
<td>Firm 57</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firm 42</td>
<td>Firm 52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table V.**  
*Relative positioning of surveyed firms on TCPI W.R.T. innovation competence index (ICI)*  
*Source: Author’s estimation based upon primary survey*
However, with reference to the competitive performance of the targeted firms, TCPI provides an insight of high variability of competitiveness among the firms under the study. The distribution is normally spread over 61 firms. The score is above 2.5 for more than 50 per cent of the firms. Hence, the average competitiveness of the firms is above average TCPI score. However, the challenge for the firms is equally poised for the similar numbers of firms are struggling with the low level of competitiveness and hence are impeding the competitiveness of overall industry within the state. Competitiveness of the targeted firms is attributed mainly out of its price and market-based competitiveness with higher mean score in PAT index and sales index.

Ironically, the cost-based competitiveness is marginally compromised, which may be attributed to the difficult terrain as well as high cost of labor and low technological investments by the firms. The capacity of the firms in terms of cost optimization is also low. The geopolitical conditions act as constrain in defining the consistent performance of the firms and hence offers low flexibility in term of yielding high volume based upon the performance on consistent basis. These firms hence have issues in terms of providing the products in a consistent price range due to the variability in the price of factors of productions including the raw material. However, the aggregate TCPI is above one and has uniform distribution across the firms. Though, the range of distribution of TCPI across the sample firms is wide considering the small size of the sample.

To understand the spread of firms with the level of innovation competence as against the performance-based competitiveness and henceforth the positions of the firms, the firms are placed over the grid (Table V). The TCPI of the firms under survey is comparatively high as against the ICI. The grid provides for the specific firms which are comparatively high in TCPI as well as ICI are only 7 of 61, which is only 11.47 per cent of the total firms under survey, while as 18 per cent of firms are in low category in both the areas. The scope for improvement is for nine firms which can further improve their ICI and TCPI, as they lie in the category of high and medium high (Firms 8, 9, 10, 39, 45, 14, 21, 27 and 28). The four firms (Firms 4, 12, 26 and 56) are high on TCPI but have a very low ICI score. The firms can capitalize over its strength and improve upon the ICI through adequate investment in innovation capabilities.

The interaction of the ICI and TCPI is further explained with the relationship through empirical estimation of the regression analysis. The $R$ value of 0.56 describes the significant relationship between the exogenous and endogenous variable. The 0.312 value of the $R$-square describe that the independent variable, i.e. ICI explains almost 31 per cent variability in the dependable variable, i.e. TCPI. The model thus in the case of measure of competitiveness is fit to be explained as:

$$Y = c + aX_1$$

where:

$Y = \text{Competitive performance as a proxy for firm level competitiveness.}$

$X_1 = \text{Innovation competence.}$

$a = \text{coefficient of innovation competence.}$

$c = \text{constant.}$

Thus, the relation is explained as:

$$TCPI = 1.313 + 4.238X_1$$
The test statistics conclude the overall goodness of fit of the model. With reference to the findings, the null hypothesis stands to be rejected in terms of the influence of innovation over the firm level competitiveness. Hence, innovation competence does influence total competitive performance as a proxy for firm level competitiveness for the firms in agro-food processing in the state of J&K in India. The innovation holds a positive relationship with competitive performance, and with one unit investment in innovation competence, the competitive performance will increase by 4.238 units and thus will result in competitiveness of the firm in long run.

During the survey, it is observed that the agro-food processing entrepreneurs are keen toward improving innovation capabilities of their firms. It was also found that the limit of the innovation capabilities has been restricted to the products only, and most of the time entrepreneurs imitate the products of the national and international firms. Most of the entrepreneurs follow hit-and-trial method in their approach as well. However, there are certain business establishments who are consistently thinking of bringing new products or entering new market segments. One such firm, i.e. M/s Sarveshwar Overseas, with its concentrated focus was able to bring scented rice in the market. Scented rice is an exotic product of Kashmir, and during the past few decades, it was becoming almost extinct. The market for scented rice is huge both at national and international level as well as at regional levels. The firm was able to leverage on this market segment with its innovation capabilities and investment in R&D. However, not many of such examples could be found for innovations among the firms in agro-food processing units of J&K. It may be inferred that the agro-food processing firms of the State have failed to create a niche for its products, despite having the availability of the resources. The firms have the scope of investing and channelizing resources for building and sustaining the firm level competitiveness. Majority of the surveyed agro-food processing units in J&K are family-oriented business and have traditional approach toward their business performance. Also, some of the units are in transition from first generation to the second generation entrepreneurs. The lack of strategic orientation and competitive motivation are hampering the success and growth of these firms. Further, the underutilization of the resources and information is also adding to the obstructions. All these factors are creating a challenge in using capabilities and hence improving and building competitive performance/firm level competitiveness. The careful investment in the innovation competence shall create a case for the increasing competitive performance. In such cases of firms where it is established empirically, that the competitiveness at firm level has an influence of innovation competence, a strategic approach in building innovation capabilities through incubation of various product and process activities can be taken up, both at structural as well as facilitating agencies. The results of the paper derive an insight for the firms to manage their competence and explore their innovation capabilities to remain competitive.

**Conclusion**

The present study reveals a positive relationship between competitiveness of the firms and innovation competence of the firm. With the help of the agro-food processing industries in the state of J&K, it is established that the innovation competencies do influence the firm level competitiveness. Competitiveness of the firms is based upon creating distinct competencies and requires strategic interventions. The findings of the research paper reveal the fact that the agro-food processing firms in J&K in India, which is a potentially resource-rich state, need strategic intervention in terms of scientific, product, technological as well as process-based innovation competencies that can lead to a non-price-based competitiveness for the firms in the state. Due to its distinct geo-political status, the firms in the State need to
create a niche for its agro-food-processed products. The niche is based upon developing non-price competencies, which can be developed through incubating certain incremental as well as radical innovations. The paper discussed the innovation competence of the firms with their respective status as well as comparative position.

This paper has managerial and policy implications for the firms in developing states, where the challenges are multifold. The innovation capabilities in such firms can provide for the competitive leverage to a certain level. Also, the innovation competence is based upon the product innovation as well as process innovation at incremental level as well as radical level. However, the innovation competence with respect to the developing firm level competitiveness could be only one of the parameters; still, it cannot be ignored for the firms in such geo-political status. The managers and policy makers have to consistently identify the sources and means for nurturing innovation competence. The resources and the innovations need to be incubated for competitive performance of the firms. The study provides valuable cues to the policy makers in devising the appropriate polices for improving the performance of the agro-food processing industry as well as for formulating the policy initiative/schemes for building the innovation competence of the agro-processing firms. The paper also develops upon the methodology for defining the aggregate measure for competitiveness and competence and validates with the help of its results. The aggregate measure, based upon the quantified qualitative assessment, is a way out in exploring the unknown in the absence of any uniform data for multiple units of a sample. However, one cannot ignore the limitations of biasness in the data. Hence, the observations in the papers may not be generalized for all the industry sectors across the world. The aggregate measure and development of composite index has its limitations in terms of the periodicity and ethnicity of the data. Therefore, the results may be studied carefully.

The paper provides for an insight in terms of developing innovation competence and its influence on firm level competitiveness, which may be validated further in various other industry sectors. There remains a scope of future research for deliberating and defining the measure for innovation competence for respective industry sectors as well as incubating the same for defining the same for competitiveness of the industry.

References


**Further reading**


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Entrepreneurship intention in agricultural sector of young generation in Indonesia

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Abstract
Purpose – This paper aims to discuss Indonesia as a country having a young generation resource crisis in agricultural sectors, and this crisis contributes more than 32.9 per cent higher unemployment than other sectors. Therefore, creative youths are needed to build the sector through entrepreneurship activities.

Design/methodology/approach – The low condition of youth entrepreneurship intention in agricultural sectors leading the Agriculture Ministry of Indonesia launches an Agricultural Young Entrepreneurship Growing Program 2016 (Program Penumbuhan Wirausaha Muda Pertanian, PWMP 2016). Intention in growing phase is critical to avoid the program failure.

Findings – This research was aimed to analyze entrepreneurship characteristics and factors affecting the intentions. The research was conducted in three cities, Bogor, Lampung and Bandung, with 189 respondents who accepted business support from the PWMP in 2016. The accumulated data were then analyzed using descriptive analysis and structural equation model. Respondents have highly average trends on behavior belief, normative belief, motivation to comply, control belief, control belief power and intention. While, only the evaluation of the consequence to give the medium trend is about 50.26 per cent.

Originality/value – Factor affects to the entrepreneurship intention in agricultural sectors is a subjective norm or external factor, and both the attitude toward behavior and perceived behavioral control factors do not affect entrepreneurship intention in the agricultural sector.

Keywords Entrepreneurship, Intention, Agriculture, SEM

Paper type Research paper

1. Introduction
Indonesia is a country that has a high unemployment of about 7.24 million of its population and is increasing by 90 thousand compared to the previous year (BPS, 2014). This phenomenon is dominated by youth unemployment which is increasing by years. The unemployment is prominently dominated by labor force in rural areas with averaged growth of about 9.8 per cent (Sakernas, 2012-2014). Moreover, rural areas of Indonesia are
mostly dominated by agricultural sector that has an employment level of about 32.9 per cent (BPS, 2016). The sector contributes higher idleness number in Indonesia than other sectors. This higher contribution indicates that agricultural employments are not able to accommodate those amount workforces or moving to other sectors. Youth interest in agricultural sector is decreasing year by year. Furthermore, 35 per cent of those who are working on agricultural sector have a low productivity, and most of them are small-scale farmers and elderly.

The low contribution young generation phenomenon in agricultural sector above is also correlated positively on decreasing national income on the sector. Hence, creative youths are required to develop the sector through entrepreneurship activities. Entrepreneurs are people who are action oriented, having high motivation and daring to take risks and future motivation (Pambudy et al., 2005).

As an agrarian country with tremendous natural resources, agricultural sector of Indonesia is a very potential business area to be developed by youths. Developing agricultural entrepreneurship is needed to drive human resource productivity of the sector. According to Central Bureau of Statistics/BPS (2014), business actors in agricultural commodity are only about 44.20 million people (0.17 per cent) of the Indonesian population. The low number of entrepreneurs is indicated as a gap between human resources and education problems in famer’s level. Colleges play an important role in creating young agricultural entrepreneurs which is a crucial issue in this country. The colleges are responsible on increasing growth of graduated scholar to be unemployment about 14.5 per cent in period 2012-2015. There is low intention of those scholars for being entrepreneurs in agriculture due to financial factors which needs huge financial capital (Boateng et al., 2014; Pande, 2015). Even people from agricultural background are more interested to do business in non-agricultural sector (Parcel, 2003).

The low intention of youth entrepreneurs on agricultural sector induced Agricultural Ministry of Indonesia for launching an Agricultural Young Entrepreneurship Growing Program 2016 [Program Penumbuhan Wirausaha Muda Pertanian (PWMP) 2016]. This program is launched with an aim to answer the graduated campus unemployment and lack of human resources in the sector. Most of these programs are targeted to agricultural graduates by distributing capital assistance as long as 3 years to those graduates so they able to overcome the lack of financial capital. The needed initial evaluation of the program is intended to presume how successful the program is in the first year to increase entrepreneurship intention. Intention is a high fellow feeling to carry out entrepreneurship activities in agricultural sector. This intention is closely related to attitude toward the behavior, subjective norm and perceived behavior control. The importance to know intention on the first-year program is to avoid program failures.

This paper reveals Indonesian researchers’ level of understanding on youth entrepreneurial issues. First, this paper aims to analyze young entrepreneurs’ characteristics. Second, this paper proposes to analyze some factors affecting entrepreneurs’ intention on agricultural sector. Discussion is presented in the third section, while recommendations are in the last section.

2. Review of literatures
Entrepreneur intention is identical with individual competency that refers to a willingness to conduct a certain behavior. Intentions of youth entrepreneurship in Chnai agricultural sector is influenced by the attitude factor. The intention basically is an acceptance on a representative relationship, like has been explained in the theory of planned behavior (TPB), between cognitive and conative behavior of readiness of individuals to perform certain act.
It plays as a determinant and disposition of behavior, until the individual has proper opportunity and time to display the act in a real situation (Fisben and Ajzen in Yuliana, 2004).

In the TBP proposed by Ajzen (1991), intention is assumed as a portrait of motivation factor which affects an act. This indicates how hard a person tries to formulate his/her behavior. As of, intention highly correlated with behave (Figure 1). According to the theory above, it is influenced by some factors such as attitude toward the behavior, subjective norm and perceived behavioral control.

- **Attitude toward the behavior** refers to how far an individual assess something favorable and unfavorable.
- **Subjective norm** is a social pressure that is experienced to do an act or behave.
- **Perceived behavioral control** is a perceiving easiness or trouble that is formed from assuming based on past experience and anticipating obstacles and barriers.

TBP can be used as the basis for the analysis of entrepreneurial intentions. A study by Sommer (2011) prove that the TBP can be used to analyze the intention of entrepreneurship and its impact on past behavior. Van Gelderen et al. (2008) suggested that to investigate in detail about the intentions of entrepreneurs, TPB is required where the intention is regarded as a result of the attitudes, perceived behavior control and subjective norms. According to Zampetakis et al. (2013) and Devi (2015), this variable attitude toward the behavior is an influential variable in an young entrepreneur’s intention in agricultural sector. The same way with Saheed and Kavoos (2016) suggested that youth entrepreneurship in Africa has a positive attitude that is active and ready to take risks and standalone. Similarly, Ahmad (2014) suggested that attitude is the strongest factor affecting the intention of entrepreneurship among students from Nigeria at Utara Malaysia University. Intentions of youth entrepreneurship in Chinese agricultural sector is influenced by the attitude factor (Devi, 2015).

Second factor is proven by Shiri et al. (2012) who express that subjective norm has significantly affected young student entrepreneurs that have an educational background in

**Figure 1.**
Theory of planned behavior

**Source:** Ajzen (1991)
agriculture; perceived behavioral control factor is being a factor influencing young entrepreneur’s intention. A similar study conducted in Indonesia by Arisandi (2016) suggested that entrepreneurial intentions Bogor agricultural University (IPB) Graduate students in the agricultural sector are influenced by subjective norm factors. However, other factors are attitude toward the behavior and behavior control perceive no effect on entrepreneurial intentions IPB graduate students in the agricultural sector. Entrepreneurial intention was positively correlated with extraversion, openness and support of people nearby who are part of the subjective norm factor (Ismail et al., 2009). Contrary to Robledo et al.’s (2015) research, perceived behavior control and attitudes affect entrepreneurial intentions, while subjective norm does not affect entrepreneurial intentions. In addition, the findings indicate that the moderating effect of gender has a positive effect for women to development entrepreneurial intentions (Yeasmin and Latif, 2015).

The study of Wijerathna (2015) in agriculture faculty of Srilangka State University proved that subjective norms and attitudes are the greatest factors that influence entrepreneurial intentions agricultural students in Sri Lanka. Contrasted with Nabila and Haryani (2015) research that entrepreneurial intentions of students in Malaysia is formed by the control behavior and support relationships of an entrepreneur. These findings indicate that not all factors affect youth entrepreneurial intention. However, the third factor in TPB allowed to jointly affect youth entrepreneurial intentions. In Public Malaysia University, the third factor (attitude, subjective norm, perceived behavioral control) affects entrepreneurial intentions with the strongest factors of subjective norms and attitudes (Soon et al., 2016). This is in line with Masoomi et al.’s (2016) research that proves that subjective norms, perceived behavior control and attitude are highly correlated with entrepreneurial intentions of students in agriculture at the University of Shiraz, Iran. Likewise, the students from Nigeria, on Muhammad et al.’s (2015) study, found that attitude, subjectif norm and control behavior power all together influence the entrepreneurial intention of Nigerian students.

A comparison study with different country (Indonesia, Japan, Norwegia) by Indrianti (2008) shows that entrepreneur’s intention among students and the affecting factors are different among those countries. Educational background to be a main factor influences entrepreneurial intention of among those students. The correlation analysis indicated that youth entrepreneurial intentions are positively correlated to their personality traits (risk taking propensity, innovativeness and tolerance of ambiguity), and social learning (knowledge and experience and family upbringing) (Tateh et al., 2014). Entrepreneurship education program has affected student behavior control and anticipation of positive and negative impacts (Zampetakis et al., 2014). This research shows that educational background in agriculture is highly affecting entrepreneurship intention in agricultural aspect. Movahedi et al. (2013) show a motive of a bachelor candidate to work in agricultural sector. Hence, this entrepreneurial intention tends to be prominently dominated by agriculture graduates. Respondents with agriculture background are more likely to become agri-entrepreneurs compared to the ones with social science backgrounds. (Mohamed et al., 2012). Results of the analysis found students’ perception regarding the prospects of agribusiness enterprises in Ghana to have a statistical significant influence at both 1 and 5 per cent levels of significance on students’ intention to take up agribusiness as a future self-employment avenue (Zakaria et al., 2014). However, it is contrasted with research conducted by Aziz and Naem (2013) on youth interests on agricultural entrepreneurship in Malaysia, which shows that knowledge and education background are not significantly affecting those youths to be entrepreneurs.

Agricultural sector is less favorable for young people. Utsugi (2012) in his research in organic agricultural area of Brattleboro states that there are not many young people in
Brattleboro wishing to choose organic agriculture as their carrier of work. Research result expresses that those people consider to work in organic agriculture especially as financial factors. They also need to determine that organic agriculture is able to make a decent living or not. It is no more different with researches conducted by Boateng et al. (2014) and Pande (2015) which state that youths perceive lack of capitals, skills, supports, market opportunities and risks to be main obstacles for intending entrepreneurships. Financial condition tends neither capital lack nor business return causing hampered entrepreneurship of the youths (Ahmed et al., 2010; Azwar, 2013; Herawati and Sambharakreshna, 2015). Agricultural sector assessed has high risk so that investment and return are being a sensitive issue recently. Many young agricultural graduates tend to do business in other sectors (Parcel, 2013). This condition attains to become a research reference where agriculture is less interested because of financial problems. Financial support to some PWMP participants should be a respond for youth entrepreneurial crisis in agricultural sector which is later parallel with entrepreneur’s intention of agriculture.

3. Hypothesis and conceptual modes

Hypothesis in this research was based by previous research and the constructed TPB. The based TPB hypothesis more refers to affecting factors young entrepreneur’s intention on agricultural sector. The TPB in this context, intention is influenced by some factors such as attitude toward the behavior, subjectif norm, and perceived behavioral control:

H1. The attitude toward the behavior factor influences positively entrepreneur’s intention of PWMP participants.

The attitude toward the behavior refers to how far an individual assesses something that favorable and unfavorable. This factor is a crucial for an entrepreneur. Zampetakis et al. (2013) and Devi (2015) found that attitude factor on the behavior is a variable that highly affects entrepreneur’s intention of youth in agricultural sector. In their measurements, there are some indicators of the attitude. The attitude toward the behavior factor has some indicators such as appreciation, creativeness, risk taking, tolerance, independence, proactive-innovativeness, focus and self-confidence, time appreciation, hardworking, integrity, toughness, autonomy, leadership, spiritualism, knowing, achieving targets, mental toughness, future orientation, flexibility and diligence (Mohavedi et al., 2013; Arisandi, 2016; Ulfa and Maftakhatusolikhah, 2015).

It is contracted to the research conducted by Azwar (2013) found that indicators of the attitude toward the behavior are autonomy/authority, economic challenge, self-actualization, filling trusted, safety, work load, avoiding responsibility and social carrier. In this study, an element of the attitude toward the behavior variable is to seek a work with challenges and high economic values (economic opportunity). While indicator of the attitude toward the behavior is stated by Adetayo (2006) more towards to socio-economic factors such as experience, education and motivation:  

H2. Factor of subjective norm affects positively on entrepreneur’s intention of PWMP participants.

This factor is social pressure that is sensed to do an act or not. In the research conducted by Shiri et al. (2012), subjective norm has significant influence on entrepreneur’s intention of students who has agricultural education background. In latent variables, construction stating that belief toward normative referent of hope and motivating on normative hope are keys for forming indicators. While research was carried out by Arisandi (2016) added that indicator in belief toward normative referent of hope constitutes of believing on
organization, parents, family, teacher/lecturer and friends expectations. Latent variable of motivation to be obeying on normative referent of hope has motivation on the above expectations:

**H3.** Factor of *perceived behavioral control* predisposes positively on entrepreneur’s intention of PWMP participants.

*Perceived behavioral control* is easiness or that can be perceived or formed difficulty of behavior which is assumed referring on past experiences and anticipating obstacles. In forming these latent variables, it was stated that belief on easiness level of behavior and a control power on easiness level are main keys for framing indicators. Research conducted by Arisandi (2016) states that indicators in belief on easiness level of behavior consists of easy/difficult belief on accessing to financial institution, overcoming fatigue and boring, resolve entrepreneurship complexities and fulfilling agreements. While, control power latent variable on easiness level has indicators as same as previously mentioned above.

### 4. Methods

#### 4.1 Research design

This research was conducted on three cities, Bogor, Lampung and Bandung by delivering online questionnaires and direct interview to PWMP participants. Determining research locations was carried out by purposive sampling to consider distributing participants about 59 per cent of all PWMP participants. Data were collected from August to September 2016 with qualitative technique. Primary and secondary data were gathered based on research needs. Primary data were taken directly both through questioners and interviews about PWMP program, and secondary data were compiled from related institutions such as Central Bureau of Statistics Republic of Indonesia (Badan Pusat Statistik, BPS), local labor offices, PWMP data and Ministry of Agriculture. Total respondents were 198 who are bachelors of agriculture and receiving financial support for the PWMP program in 2016 at those locations. Those gathered data are then analyzed using descriptive analysis and structural equation model (SEM) (Figure 2) (Table I and Table II).

![Figure 2. SEM model](image-url)
5. Results and discussion

5.1 General overview of respondents

5.1.1 Age, ethnic and gender. Youth is a group of people with productive age between 15 and 35 years. In this research, respondents are in aged ranged from 19 to 35 years. The respondents aged 23 years have higher proportion among others.

Ethnic group of respondents are varied such as Melayu, Batak, Minang, Sundanese, Javanese, Betawi, Chiness and Bugis. Most respondents are Sundanese and Javanese about 43.9 and 32.8 per cent, respectively. This condition indicates that Sundanese respondents are dominant in research location mostly in West Java. Javanese also is

<table>
<thead>
<tr>
<th>Latent variables</th>
<th>Manifested variable</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1. Attitude toward the behavior</td>
<td>X1.1 Behavior beliefs</td>
<td>Z1 Consequence belief on appreciating time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z2 Consequence belief on bearing to take risks</td>
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<td></td>
<td></td>
<td>Z3 Consequence belief on integrity</td>
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<tr>
<td></td>
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<td>Z4 Consequence belief on confidence</td>
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<td></td>
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<td>Z5 Consequence belief on creativeness</td>
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<td></td>
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<td>Z6 Consequence belief on innovativeness</td>
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<td>Z7 Consequence belief on autonomy</td>
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<tr>
<td></td>
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<td>Z8 Consequence belief on leadership</td>
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<td></td>
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<td>Z9 Consequence belief on diligence</td>
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<td></td>
<td></td>
<td>Z10 Consequence belief on discipline</td>
</tr>
<tr>
<td>X1.2 Evaluation of that consequences</td>
<td></td>
<td>Z11 Evaluating consequence of appreciating time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z12 Evaluating consequence of bearing to take risks</td>
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<td></td>
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<td>Z13 Evaluating consequence of integrity</td>
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<td></td>
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<td>Z14 Evaluating consequence of confidence</td>
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<td>Z15 Evaluating consequence of creativeness</td>
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<td>Z16 Evaluating consequence of innovativeness</td>
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<td>Z17 Evaluating consequence of autonomy</td>
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<td></td>
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<td>Z18 Evaluating consequence of leadership</td>
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<tr>
<td></td>
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<td>Z19 Evaluating consequence of diligence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z20 Evaluating consequence of discipline</td>
</tr>
<tr>
<td>X2. Subjective norm</td>
<td>X2.1 Normative beliefs</td>
<td>Z21 Belief on organization’s expectation</td>
</tr>
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<td></td>
<td></td>
<td>Z22 Belief on parents’ hope</td>
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<tr>
<td></td>
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<td>Z23 Belief on family’s expectation</td>
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<tr>
<td></td>
<td></td>
<td>Z24 Belief on teacher/lecturer’s expectation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z25 Belief on friend’s expectation</td>
</tr>
<tr>
<td>X2.2 Motivation to comply</td>
<td></td>
<td>Z26 Motivation to comply on organization’s expectation</td>
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<tr>
<td></td>
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<td>Z27 Motivation to comply on parents’ hope</td>
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<td></td>
<td></td>
<td>Z28 Motivation to comply on family’s expectation</td>
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<tr>
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<td></td>
<td>Z29 Motivation to comply on teacher/lecturer’s expectation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z30 Motivation to comply on friend’s expectation</td>
</tr>
<tr>
<td>X3. Perceived behavioral control</td>
<td>X3.1 Control belief</td>
<td>Z31 Easy/difficult belief on accessing financial institution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z32 Easy/difficult belief in overcoming tired/boring</td>
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<tr>
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<td>Z33 Easy/difficult belief in surmounting entrepreneurship difficulty</td>
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<td></td>
<td></td>
<td>Z34 Easy/difficult belief in satisfying agreements</td>
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<tr>
<td></td>
<td></td>
<td>Z35 Control power on accessing financial institution</td>
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<tr>
<td></td>
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<td>Z36 Control power on overcoming tired and boring</td>
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<tr>
<td></td>
<td></td>
<td>Z37 Control power on surmounting entrepreneurship difficulty</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z38 Control power on satisfying agreements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y39 High intention of entrepreneurship</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y40 High intention of entrepreneurship in agricultural sector</td>
</tr>
</tbody>
</table>

Table I.
Explanation for the SEM model

Y. Intention
considered dominantly after the Sunda. This is due to Javanese mostly live either in Lampung or West Java.

Gender of respondents is constructed by the following proportion: 66.1 per cent for male and 33.9 per cent for female (Table III). This condition exhibits that man has high interest to follow PWMP program than woman.

5.1.2 Marital status. Married respondent has a low proportion about 14.3 per cent, and the single respondent has a high proportion about 83.7 per cent (Table IV). This situation indicates that the single respondent is more dominant than the married one. Other reason is that the young people do not have orientation to marriage yet before owning established life.

5.2 Descriptive analysis
A descriptive analysis is a technique used for describing sample characteristics. Characteristics of the research are able to be reflected by such variables X1.1, X1.2, X2.1,

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operational definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude toward the behavior</td>
<td>How far individual assesses something can be profitable</td>
</tr>
<tr>
<td>Behavior beliefs</td>
<td>One’s perceived beliefs on behavior, and it will push to be an attitude</td>
</tr>
<tr>
<td>Evaluation of that consequences</td>
<td>Individual’s positive of negative evaluation on certain behavior based on his/her beliefs</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>Perceived close social pressure for doing an act or not</td>
</tr>
<tr>
<td>Normative beliefs</td>
<td>Perceptive representation of important people on one’s and affects how his/ her behavior should be</td>
</tr>
<tr>
<td>Motivation to comply</td>
<td>One should show his/her certain behavior and motivation for obeying to referenced hopes/ expectations</td>
</tr>
<tr>
<td>Perceived behavioral control</td>
<td>Formed easiness or difficulty of behavior that is assumed based on past experiences and anticipating obstacles</td>
</tr>
<tr>
<td>Control belief</td>
<td>Belief on opportunity and resources that are owned by an individual to conduct a behavior</td>
</tr>
<tr>
<td>Control belief power</td>
<td>Power or capability that is owned by one to control perceived factors for facilitating or obstructing a behavior</td>
</tr>
<tr>
<td>Intention</td>
<td>A sense on something or business activity in agricultural sector among fields such as upstream, on-farm, downstream, and supporting fields</td>
</tr>
</tbody>
</table>

Table II. Operational definition

| Age (year) | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Total (people) | 1 | 0 | 10 | 34 | 49 | 24 | 21 | 14 | 12 | 6  | 5  | 2  | 0  | 0  | 4  | 2  | 3  |
| (%)        | 0.5 | 0.0 | 5.3 | 18.0 | 25.9 | 12.7 | 11.1 | 7.4 | 3.2 | 2.6 | 2.6 | 1.1 | 0.0 | 0.0 | 2.1 | 1.1 | 1.6 |

Table III. Age, ethnic and gender of respondents
X2.1, X3.1, X3.2 dan Y[0].1, Y.2. The used techniques in descriptive statistics are percentage, average and deviation standard (Table V).

Analysis of the result descriptively shows that most respondents have high significant average on behavior beliefs, normative beliefs, motivation to comply, control belief, control belief power and intention. These evidence that:

- respondents surely believe that such entrepreneur’s behaviors, such as appreciating time, taking risks, integrity, self-confidence, innovative, autonomy, leadership, diligent and discipline, have to be owned by an agricultural entrepreneur;
- respondents are very confident that expectation coming from parent, family, friends and supervisor are verily motivated to conduct business;
- respondents express that entrepreneurship motivation based on the expectation coming from parent, family, friend and supervisor;
- respondents are sure that getting easy to, having access for financial institutions, overcoming tired condition, subduing entrepreneurship difficulty easily and fulfilling agreements increase intention in entrepreneur activities;
- respondents have an ability to access financial institution, overcome tired, subdue business’s difficulty and meet agreement (negotiation); and
- respondents of PWMP have a high entrepreneur's intention on agricultural sector.

Furthermore, there is only the evaluation of that consequences which gives medium tendency about 50.26 per cent. This is pointed that respondents do not maximize yet to adjust entrepreneur’s behavior such as appreciating time, taking risks, having integrity, self-confidence, creative, innovative, autonomy, leadership, diligent and discipline.

5.3 Structural analysis of equation model
5.3.1 Overall model fit. Based on the table above, overall model result criteria which fulfill the requirement for goodness of fit means that the resulted model is good fit. The root mean

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Total (People)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>27</td>
<td>14.3</td>
</tr>
<tr>
<td>Single</td>
<td>162</td>
<td>85.7</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>High</th>
<th>% Inclination</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1.1</td>
<td>43,80423</td>
<td>4,393998</td>
<td>90.48</td>
<td>8.99</td>
</tr>
<tr>
<td>X1.2</td>
<td>39,67196</td>
<td>5,032692</td>
<td>43.92</td>
<td>50.26</td>
</tr>
<tr>
<td>X2.1</td>
<td>21,95238</td>
<td>2,674318</td>
<td>86.77</td>
<td>12.70</td>
</tr>
<tr>
<td>X2.2</td>
<td>21,56085</td>
<td>2,735261</td>
<td>81.48</td>
<td>17.99</td>
</tr>
<tr>
<td>X3.1</td>
<td>18,14815</td>
<td>2,113598</td>
<td>92.59</td>
<td>6.88</td>
</tr>
<tr>
<td>X3.2</td>
<td>14,51852</td>
<td>2,838925</td>
<td>50</td>
<td>47</td>
</tr>
<tr>
<td>Y</td>
<td>9,296296</td>
<td>1,160996</td>
<td>94</td>
<td>5</td>
</tr>
</tbody>
</table>

Table IV. Marital status of respondents
Table V. Descriptive data
square error of approximation (RMSEA) criteria results in ranged values of \(0.055 \leq 0.08\) meaning that the resulted model is good fit (Table VI). The use of other goodness of fit criteria such as goodness of fit (GFI), comparative fit index (CFI), normed fit index (NFI), non-normed fit index (NNFI), incremental fit index (IFI) and relative fit index (RFI), results value \(>0.90\) means the resulted model is good fit. So does another criterion of root mean square residual (RMR) resulting value about \(\leq 0.1\) which means the resulted model is good fitted. Because of all criteria infer the model is good of fit, testing the hypothetic theory can be done. This represents that resulted questionnaire data are able to answer the built theory.

5.3.2. Measurement model fit. Model fit theory of measurement was conducted based on validating indicator variables on its latent variables. An indicator variable is able be told valid when it has standardized loading factor more than its tolerated loading factors about \(\geq0.50\) (Igbaria et al., 1997). Figure 3 shows that loading factors is higher than 0.5 pointing that all variables have met valid requirement.

5.3.3 Analysis of factors affecting intention. According to the resulting analysis of SEM, it is gained that path coefficients for X1, X2 and X3 are \(-0.39, 0.58\) and \(0.22\), respectively. While, the resulted \(t\)-value for each X1, X2 and X3 are 1.32, 2.28 and 0.62, respectively (Figure 4) (Table VII).

<table>
<thead>
<tr>
<th>Goodness of fit</th>
<th>Cut-off-value</th>
<th>Result</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMR</td>
<td>(\leq 0.05) atau (\leq 0.1)</td>
<td>0.046</td>
<td>Good fit</td>
</tr>
<tr>
<td>RMSEA</td>
<td>(\leq 0.08)</td>
<td>0.055</td>
<td>Good fit</td>
</tr>
<tr>
<td>GFI</td>
<td>(\geq 0.90)</td>
<td>0.94</td>
<td>Good fit</td>
</tr>
<tr>
<td>CFI</td>
<td>(\geq 0.90)</td>
<td>0.96</td>
<td>Good fit</td>
</tr>
<tr>
<td>NFI</td>
<td>(\geq 0.90)</td>
<td>0.98</td>
<td>Good fit</td>
</tr>
<tr>
<td>NNFI</td>
<td>(\geq 0.90)</td>
<td>0.99</td>
<td>Good fit</td>
</tr>
<tr>
<td>IFI</td>
<td>(\geq 0.90)</td>
<td>0.99</td>
<td>Good fit</td>
</tr>
<tr>
<td>RFI</td>
<td>(\geq 0.90)</td>
<td>0.97</td>
<td>Good fit</td>
</tr>
</tbody>
</table>

Table VI. Measurement model fit indices

Figure 3. Standardized loading factor diagram
The resulted SEM data processing on attitude toward to behavior factors shows the result is insignificant meaning that $H_0$ is accepted and $H_1$ is refused. This infers that the attitude toward the behavior factor has no effect on youth entrepreneur’s intention in agricultural sector. Entrepreneurship attitude cannot determine how big intentions for entrepreneurs in agricultural sector. Hence, the created entrepreneur’s behavior is not based by attitude toward the behavior. In line with a research conducted by Arisandi (2016) expressing that attitude toward the behavior does not give any positive influence on entrepreneur’s intention in agribusiness sector.

The subjective form shows a significant result on young entrepreneur’s intention in agricultural sector meaning that $H_0$ is refused and $H2$ is accepted. This factor shows how far social pressure from some sides can increase entrepreneur’s intention. Supports coming from parent, family, friends, consultants and business team affect the high intention’s value. This condition is called as external factors of respondents, and it collaborates positively with entrepreneur’s intention. Confirming research conducted by Shiri et al. (2012), it is expressed that someone who has agricultural education background is highly influenced by the subjective norm.
The perceived behavioral control is an easiness or difficulty are perceived sense that is built from behavior assuming based on past experiences and anticipating obstacles. The research result shows that the perceived behavioral control is not significant, where H3 is rejected by 5 per cent of confidence. Moreover, the perceived behavioral control has no influence on entrepreneur’s intention in agricultural sector. Without any behavior controls, respondents surely believe that entrepreneurship’s intention can be appeared from their self. This refers to Arisandi (2016) which expresses that the perceived behavioral control has no influence on entrepreneur’s intention in agribusiness sector.

6. Conclusion and recommendation
Most respondents have high averaged tends descriptively on behavior beliefs, normative beliefs, motivation to comply, control belief, control belief power and intension. Only the evaluation of that consequences gives a medium tend of about 50.26 per cent. Factor affecting entrepreneur’s intention in agricultural sector is subjective norm or external factor. Nevertheless, the attitude toward the behavior and perceived behavioral control have no effect on entrepreneur’s intention of the sector.

Recommendation of this research is formulated based on likely causes of high entrepreneur’s intention in agricultural sector. Main target of entrepreneur’s intention growth is external factor of the young. Hence, the role of business team, family, parent, friend and business consultant (supervisor) are crucial to determine the intention. Further, the government runs the PWMP program which should pay attention on those excellent factors that there is a strengthening on facilitating external factor for growing more youth entrepreneur’s intention in agricultural sector. There are three development planning of external factor for young entrepreneurs through PWMP program as describing below.

- Shaping and directing young entrepreneurs of PWMP program in team work system. Supporting from the team work can strengthen intention’s growth. Furthermore, introducing some activities that nourish the togetherness either in the team work or among teams are important to bridge communication of PWMP participants closely.
- Conducting socialization toward parent and community about the importance of growing entrepreneurship in agricultural sector to recover the nation.
- Escalating workshops for consultants and controlling on consultants to give supports for the program participants. There is a need for an incentive enhancement for business consultants due to their work hours getting higher in line with the increasing of entrepreneurship’s intention in agricultural sector.

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Establishment path and management innovation of mutually beneficial nonprofit organization (MBNPO)
A study based on integrated marketing communications (IMC) theory

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Business School, Nankai University, Tianjin, China

Abstract
Purpose – Research about the modern mutually beneficial nonprofit organizations (MBNPOs) has great value because of the increasingly important role that the MBNPO plays in society. The establishment and management of MBNPOs are critical for its development.
Design/methodology/approach – Integrated marketing communications (IMC) theory is applied to the research on establishment and management innovation. The establishment of MBNPOs needs four sequential steps: identifying the target group, providing services to meet the demand of stakeholders, designing appropriate communication tactics and deploying proper organizational structure to accomplish efficient communication.
Findings – Three types of approach enable traditional enterprises to transform into MBNPOs: product innovation, operational innovation and synergetic development. The application of IMC theory accomplishes management innovation of MBNPOs in three aspects: leading market-orientation specific to stakeholder-orientation, making management innovation systematic in MBNPOs and clarifying targets of management innovation in MBNPOs.
Originality/value – This is one of the first examinations of establishment path and management innovation of MBNPO based on IMC theory.

Keywords Mutually beneficial nonprofit organization (MBNPO), Integrated marketing communications (IMC), Establishment path, Management innovation

Paper type Research paper

Introduction
Mutually beneficial nonprofit organizations (MBNPOs) become increasingly important in the continuously developing society. They provide large amount of public service. They are
much more than merely supplementary section for market but play an irreplaceable critical role instead of market mechanism. MBNPOs bear more social responsibility than traditional enterprises, and they are restrained more strictly on developing model and market competency, which leads to two vital issues:

1. comparatively small amount of MBNPOs cannot meet the demand of society; and
2. simple management pattern of MBNPO organization cannot improve the operation efficiency.

Research on these two current problems of MBNPOs and finding resolutions for them benefit MBNPOs’ thriving development and society progress.

Integrated marketing communications (IMC) theory is applied in solving the two current problems mentioned above. The core idea of IMC is concentrating on reasonable demands of stakeholders and comprehensively using resources to meet them. IMC ideas assist MBNPOs to make a full inspection of stakeholders who, from inside and outside, aim at analysis and exploitation of stakeholders’ demands, so as to set up comprehensive united operation strategy. That is beneficial for MBNPO establishment and improving management performance.

Related theories and conceptions are introduced first, such as IMC theory, MBNPO and management innovation, etc., making analysis chiefly on concept, connotation and social value of MBNPO at the beginning of this article. Second, establishment path of MBNPO is researched, especially the transmit path for traditional enterprises to MBNPO. Based on IMC theory, the research elaborates the mechanism and steps of MBNPO management innovation.

1. Research background

1.1 Integrated marketing communications theory

The core idea of IMC theory is that it is a communications strategy centered on Marcom Manager. It is based on an outside-in strategic point of view, which is used to effectively communicate with stakeholders and interest groups. It attempts to foster close and organized communication and activities with consumers, employees, investors, competitors and other interest groups, as well as with the community, mass media, government, social groups and other stakeholders (Shin, 2013).

Academic views about the definition of IMC occur in three main stages. The first stage defines IMC's denotation and connotation mainly from a tactical level, and its key viewpoints may be summarized as follows: using the outside-in concept as guidance, and based on an understanding of the needs of customers and stakeholders, it is appropriate to comprehensively apply company marketing communication methods to integrate an identified idea in a single voice.

The second stage mainly discusses IMC implementation levels from a strategic level, to combine a company’s marketing activities, strategies, positions and mission; this approach pays more attention to integrating internal interests and strives to achieve a win–win situation. IMC theory in these first two stages was based on the 4Cs marketing mix theory that was proposed by Schultz et al. (1994). The third stage has gradually formed the framework of the new IMC theory, including the 5Rs stakeholder communication strategy, Marcom Manager’s IMC team and a flat organizational structure centered on a database; this IMC theory has gradually become a new management paradigm. Schultz (2000) further proposed the 5Rs framework as a means of connecting with customers and stakeholders, guiding responsiveness, laying out how Marcom Managers can respond to customer demand rapidly and effectively. Schultz further discusses how the 5Rs framework resolves
The implementation of IMC strategy occurs in three steps. In the first step, the IMC is an outside-in oriented concept, starting from the survey and research of the company’s customers and stakeholders and a comparative analysis of the customers’ and stakeholders’ experiences and information. In the second step, the company determines its strategic position and marketing objectives, coordinates between communication activities and strategy, defines the relationship between mission and marketing strategy. Then, based on the situation of the company, IMC helps the company determine what resources are necessary and then obtains the resources to implement the IMC strategy (Luxton et al., 2015). The third step is the implementation of the IMC communication activities, and the effective feedback of the information to the company. Overall, organizations must flexibly change quickly enough to track customer behavior and use customer data to evaluate marketing results (Shin, 2013).

IMC theory is a theoretical tool that may provide methodological guidance for a company’s operations and management. IMC theory was developed through iterative observation of the interaction among numerous market factors, driven by recognition that companies must efficiently interact and communicate with stakeholders and fully integrate various marketing means, such as external marketing, internal marketing, database marketing, transaction marketing, relationship marketing to achieve the best marketing effect.

1.2 Mutually beneficial nonprofit organization

The concept of a nonprofit organization (NPO) originally comes from the American “National Tax Law” that lays out the terms of a 501c3 organization, which is an organization that does not pay taxes because it works for the public interest. Other terms, such as non-governmental organization, Third sector and civil society have similar meanings, though these organizations evolve from different sources and have slightly different meanings (Erkoc, 2016). Thomas Wolf indicated that an NPO should have the mission of offering a public service, file its status with the government and obey national laws and regulations. He said it should be a non-profit or charity group, and its operational structure must exclude private possessions and interests. Its operation is tax-free, enjoys a special status in law and any donations it receives are also free of tax duty. A professor from the Johns Hopkins University, Salamon (1999), defined five characteristics of an NPO based on his study of NPOs in 42 countries: organizational, non-profitable, non-governmental, autonomous, voluntary. From China’s perspective, Shin and Lee (2007) deem that an NPO is a kind of corporate organization aiming to provide a public service without the goal of making a profit, and argue that it should enjoy the right of free or reduced tax, the profit of which is not allocated to its internal members, and should also enjoy partial civil independence.

The definition of a MBNPO is necessary because of the demand for applying IMC theory in NPO marketing management. Hansmann (1980) divided NPOs into two types according to organizational control and capital sources. Hansmann believed that the capital of an organization typically comes from donations and self-employed income, while the control modes include sponsor control and board control. By interactively combining these factors, four types of NPOs can be identified, as seen below in Table I. The commercial
entrepreneurial NPOs (like civilian-run non-profit hospitals and civilian-run universities and colleges) raise capital mainly through fee for service work that produces income. This makes these NPOs sensitive to the market and interested in building and maintaining stable relationships with stakeholders, especially service payers. Also, this type of NPO generally has a board of directors that is similar to those of for-profit corporations; such boards typically have a division of ownership and control rights, making the NPO able to appoint appropriate staff and construct effective inner governance. From the perspective of the commercial entrepreneurial NPO, the author of this paper defines an MBNPO as shown below.

An MBNPO is a kind of independent public service agency with corporate capacity, not aiming to make a profit, and mainly running on income from fee for service work, despite various other sources of capital; thus, it is stakeholder-oriented.

There is a similar concept called a mutual-benefit nonprofit corporation (MBNPC). An MBNPC – also called a membership corporation – is a kind of organization that is established, organized, sponsored and run by a specialized group and provides service within that group, like a country club. The MBNPC does not enjoy the tax benefits of a 501c organization, as it is not considered to be a charitable organization. The MBNPO and the MBNPC differ mainly in two respects:

1. the MBNPC must pay income tax, while the MBNPO is tax exempt; and
2. the MBNPC is mostly owned and operated by its sponsors, which aim to benefit themselves, while the MBNPO is usually operated by a board and its services are intended for public use (Bassous, 2015).

Aside from the basic characteristics of the NPO, the MBNPO also involves certain other issues, as enumerated in this section:

- *Issues related to formality*: Cheng and Ma (2008) do not consider organizations without formal registration, to be NPOs. The MBNPO must be registered formally and legally with a formal management structure and running system. Organizations without formal registration, or those that are registration-free, registered as enterprises and so on should not be listed as MBNPOs.

- *Issues related to mutual benefits*: “mutual benefit” means organizations provide services or products and receive pay from them directly; this income is the primary income for the organization, pushing it to stress the interests of stakeholders and to build robust relationships with customers. Mutual benefit causes the MBNPO to value the market response, which gives the MBNPO the features of both NPOs and enterprises. This means that the MBNPO emphasizes relationship building with stakeholders, strengthens two-way communications, integrates and coordinates marketing and communications

<table>
<thead>
<tr>
<th>Classification basis</th>
<th>NPO types</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital source</td>
<td>Donative NPO</td>
<td>Capital comes from the donors like the Red Cross</td>
</tr>
<tr>
<td>Capital source</td>
<td>Commercial NPO</td>
<td>Capital comes from service payments, such as from private schools and hospitals</td>
</tr>
<tr>
<td>Organization control</td>
<td>Mutual NPO</td>
<td>Controlled by sponsors, as in country clubs</td>
</tr>
<tr>
<td>Organization control</td>
<td>Entrepreneurial NPO</td>
<td>Controlled by the board like most hospitals and commodity exchanges</td>
</tr>
</tbody>
</table>

Table I. The classification of NPO
and ensures the effectiveness of applying IMC. Deng (2006) made a comparison between civil non-enterprise units and societies. The results showed that 95.7 per cent of the income of civil non-enterprise units comes from services and products, while clubs, associations and societies derived only 54.6 per cent from these income sources. Mutual benefit assures the organization’s sensitivity to the market.

- **Issues related to autonomy**: Capital sources directly influence the organization’s autonomy. Generally, if the funds of an NPO come from the government, then the autonomy of the NPO may be affected by government interference; if the capital comes from enterprise, then its autonomy would be manipulated by the enterprise; if the capital is derived from a foreign NPO, then it will be influenced by factors from overseas; and if the NPO is funded largely by offering services and receiving pay, the autonomy of the organization may be protected. The capital source of the MBNPO typically comes mostly from fee for service work, which provides the organization with autonomy.

- **Issues related to normalization**: The MBNPO has the features of autonomy, public benefit and interest in developing management, remaining flexible in terms of its inner governance, being sensitive to the market and paying attention to efficiency (Shin, 2014b).

### 1.3 Management innovation theory

Overall, modern management theories argue that management innovation is an effective paradigm to integrate resources to accomplish organizational goals and responsibilities and assimilate certain resources or goal formulation. From the view of basic management ideology, management innovation can be divided into three parts:

1. management innovation focuses on inner organizational structure and inner management;
2. management innovation reinforces operational institutions; and
3. management innovation is enhanced by the corporation’s culture and management philosophy.

From the perspective of management science, management innovation plays an important role in improving the management performance of corporations and other organizations (Damanpour and Aravind, 2012).

Innovation theory in economics is derived from Bear Peter’s innovation theory, which holds that the purpose of management innovation is to acquire the maximum economic benefit. There are two ways to promote economic benefits: the first is increasing production at a constant cost, and the second is decreasing costs while keeping production constant. From the perspective of input-output, the function of management innovation toward increasing economic performance considers three factors:

1. management innovation decreases the scale of capital occupation;
2. management innovation saves the expense of materialized labor; and
3. management innovation reduces the expense of living labor.
Reduction of living labor expenses helps corporations decrease living labor cost per unit of product or creates more production per unit of time expense; either of these may improve labor productivity (Petroni et al., 2012).

Management innovation has three principles:

- **Principle 1. Management innovation must be market-oriented:** Management innovation needs to adapt to the market by means of management measures to meet the demand of customers, guide consumption, and eventually acquire a competitive edge.

- **Principle 2. Management innovation is a system:** Obviously, management touches on many areas of a company, such as operations, manufacturing, finance, strategy, human resources and so on (Arvanitis et al., 2016). Taking the function of management as an indicator, management innovation can be segmented into marketing management innovation, finance management innovation, strategy management innovation, human resources management innovation, organizational structure innovation and so on. Management innovation is not isolated but is relative to many factors and must be considered comprehensively.

- **Principle 3. Management must centralize on a target:** Management should conduct a comprehensive analysis in advance, establish the current situation and problems as a baseline, concentrate on future development, set up concrete objectives, identify discrepancies between real outcomes and expectations and finally pursue actions toward future improvement.

Management innovation has two types:

1. one is gradual management innovation; and
2. the other is radical management innovation.

Gradual management accumulates tiny innovations to improve corporate management and achieve significant management innovation. This type of management innovation makes progress gradually, often features imitation, and has a short and transparent innovation cycle. Radical management innovation means that management uses incumbent management innovation, and then, after determining that this previous management innovation does not work, brings in a new and substantial process of management innovation. This type of innovation is mostly accomplished by professional managers or entrepreneurs (Palm et al., 2016).

2. **Path for establishment of mutually beneficial non-profit organization**

MBNPOs provide large number of essential products and service, not only supplementing to government organization and enterprises but also implementing some unique functions that other organization cannot realize. At present, MBNPOs cannot meet the demand of society because they are less than they are needed. As a result, establishment of MBNPO becomes more significant than ever before. In this research, IMC theory is introduced for MBNPOs establishment in two types: one is establishment of new MBNPOs, and the other transform from traditional enterprises to MBNPOs. IMC theory has the same joint points with MBNPO establishment: they have the same perspective of needs of stakeholders, so stakeholders’ interaction theory of IMC builds infrastructure for MBNPO establishment; they both concentrate on integration of resources, and therefore, the ideas and measures of IMC provide theoretical support for MBNPO establishment.
2.1 Background of mutually beneficial nonprofit organization establishment

The MBNPO is developed on the basis of a nonprofit organization, which originated from the National Tax Law of the USA, which designated a 501c status that pertains to groups that work for social and public interests and have preferential tax exemption treatment. Currently, there is no uniform definition of the non-profit organization. Wolf (1990) argues that a non-profit organization is a kind of organization that provides public services to society, and this organization needs to eliminate the influence of private interests. Wolf also posits that an NPO’s profits cannot be assigned to individuals engaged in charitable activities or in other non-profit activities; rather, he says that such organizations must file with the government and be subject to national laws and local regulations. According to a study of non-profit organizations in 42 countries, Salamon (1999) argues that a non-profit organization should be formally organized, non-governmental, autonomous, non-profit and voluntary. Shin and Lee (2007) propose (for China) that a non-profit organization is one that aims to provide public services, generally has corporate capacity and is able to enjoy tax-free treatment (because non-profit organizations are not-for-profit, which means that any profit surplus they may generate is not disbursed to internal members). In addition, a non-profit organization has a separate civil nature.

From the perspective of a non-profit organization’s significance, the consensus of the non-profit organization’s mandate and mission is mainly formed around a certain set of points:

- nonprofits need to complete the mission of a government department entrusted to public affairs;
- many public and charitable affairs rely on the power of non-profit organizations; and
- the non-profit organization has its own influence and publicity channels to influence government policy.

The value of the non-profit organization is associated with the organization’s mission: a non-profit organization must have a “mission” to carry out community service activities and gain public support and funding sources; they must not make opportunistic use of public services for profit.

For nearly 30 years, there has been an organizational trend of non-profit organizations being market-oriented along with for-profit organizations. This has yielded a class of market exchange oriented nonprofit organizations, otherwise known as the MBNPO.

The ideas related to MBNPOs that this paper presents are based on Hansmann’s classification of non-profit organizations. Based on funding sources and control methods, Hansmann (1980) divides the non-profit organization into two types. According to source of funds, it can be divided into donor and proprietary revenue mode. According to organizational control modes, it can be divided into sponsor control and board control.

Among them, the commercial entrepreneurial nonprofit organizations (such as private nonprofit hospitals, private universities, etc.) have a stronger competitive force, which has driven them to respond to the market more sensitively and to establish relationships with the recipients of their services. Commercial entrepreneurial nonprofits operate relatively similarly to the modern corporate system because their ownership and management are independent. For these NPOs, talent recruitment and effective internal governance structures can enhance the management level. The mutual-benefit non-profit organizations are defined by Shin (2013) as having a legal personality, a not-for-profit economic architecture and a certain profitability; however, their main source of income varies.
2.2 Mechanism of integrated marketing communications in mutually beneficial nonprofit organization establishment

With the help of IMC, stakeholders will be identified and classified, effective marketing communication will be carried out according to the characteristics of stakeholders, and effective marketing communication will improve brand value. IMC contains five parts (the 5Rs): responsiveness, relevance, receptivity, recognition and relationship. Each provides a guide line in MBNPO establishment:

1. **Responsiveness**: When an MBNPO is set up, the organizational structure should be designed to enhance rapid response to the demands of stakeholders, and the quality of the response should be considered.

2. **Relevance**: The information sent from MBNPO founders to stakeholders should be consistent with what the stakeholders want. The information will be accepted when the information meets the demands of stakeholders. The founders of the new MBNPO should transfer highly relevant information to the target audience, and they should not transfer unexpected information that may disturb stakeholders.

3. **Receptivity**: Contact spots should be identified effectively, and the proper contact spots should be chosen to create a two-way communication with stakeholders. Information that stakeholders value will be warmly received.

4. **Recognition**: From the beginning of the MBNPO’s establishment, marketing communication should focus on brand building and distinction, which can help stakeholders identify the brand easily and simply. The eventual aim of IMC is to promote brand value and enhance the MBNPO’s organization value.

5. **Relationship**: Long-term profit and sustainable development derive from stable and amicable relationships. IMC theory argues that a lasting win–win relationship between the MBNPO and its stakeholders is the key to the development of the MBNPO (Felicio et al., 2013).

2.3 Path of mutually beneficial nonprofit organization establishment on the basis of integrated marketing communications

The entire procedure of MBNPO establishment contains four steps, which take place one by one and have a clear chronological sequence. When the full procedure of establishment is complete, these four steps recur interactively, allowing for organizational reform in response to any turbulence in the market environment. These four steps of the establishment are shown in Figure 1.

The first step is identifying the target group that the MBNPO will service. Before the MBNPO is set up, its founders must identify the stakeholders and classify them into different groups according to their special features. The main stakeholders should be picked...
out as the key service objects, and then proper marketing communication should be designed and carried out to create effective two-way communication. IMC theory emphasizes the relationship between the MBNPO and its stakeholders and emphasizes maintaining that relationship by means of proper marketing communication.

The second step is providing services to meet the demand of stakeholders. Enough surveys and market research should be implemented to discover what appeals to the target group. The MBNPO should design and provide services according to its skillset and corporate needs that meet the demand of the target group, and thus find the joint point of interest for both sides. A favorable partnership will be nurtured and continuous cooperation and communication will gradually confirm the relationship. This is the main objective of IMC strategy (Ritala, 2012).

The third step is designing appropriate communication tactics. Each group of stakeholders has its unique features. It is necessary to carry out a special communications strategy in accordance with these features; this can help the MBNPO achieve effective market communication. It is only by this means that the MBNPO can deliver information to target stakeholders timely and precisely. The MBNPO has to make sure that the information delivered is highly relevant to the stakeholders, is needed by the stakeholders and is useful and helpful to the stakeholders.

The fourth step is deploying proper organizational structure to accomplish efficient communication. The expected results of marketing communication will never occur if there is no organizational structure as the basis for implementing a communication plan. Different organizational structures determine a wide range of communication effectiveness. Appropriate organizational structure design is critical to successful marketing communication. Organizational structure helps to guarantee a smooth process of marketing communication. Efficient organizational structure can ensure a rapid response to stakeholders and can help maintain a positive relationship with them.

The four steps mentioned previously make the information and service circulate efficiently and continuously between MBNPO and target stakeholders, as shown in Figure 2.

2.4 Transforming path for traditional enterprise to mutually beneficial nonprofit organization

It can be found from case studies that the MBNPO may obtain economic income in three ways: product innovation, operation innovation and synergetic development. Traditional
enterprises may draw lessons from the above patterns to effect transformation (Tushman and O'Reifler, 1997).

The first way is product innovation. Traditional enterprises should view challenges as opportunities rather than burdens. If enterprises can seize the opportunity to turn a problem into an opportunity, they may find continued growth in the process of solving social problems. To reach such a target, a goal for social service should be established initially. Then, under the guidance of this goal, traditional enterprises may earn profits continuously by providing innovative socialized products that are more competitive. The general form of socialized product innovation is shown in Figure 3.

For example, Grameen Bank designed a new unsecured loan product meant for low-income borrowers, according its awareness of the social problem that traditional commercial banks do not provide loans to the poor. This socialized product of unsecured loans both improved the quality of life for the poor and contributed to the bank’s development (Lin et al., 2013). Another example is Nestle developing a new product called Maggi Masala-ae-Magic, which was aimed at improving the health of children and women in India (Pfitzer et al., 2014).

The product innovation of an MBNPO that is guided by solving social problems is different from the innovation of traditional enterprises, which generally occurs only to improve a product’s function, appearance and so on.

By analysis, this text argues that the key links of product innovation include three kinds:

1. The first is establishing socialized goals. The goal of an organization is the strategic choice of its enterprise, and establishing socialized goals can ensure that enterprises transform into MBNPOs. To implement socialized goals, it is very important for all members of the enterprise to believe in solving social problems and to solve social problems in terms of actual actions. For example, the vision of Canyou is to assure the survival of vulnerable groups such as the disabled.

2. The second kind of link is selecting social problems that accord with enterprise competence. There are many reasons for the emergence of social problems, and people have different ideas about social problems. In general, enterprises would receive the praise and support of society if they participate in solving significant or crucial problems. However, enterprises need to consider whether they have ability to solve these problems and to develop continuously in the process of solving them. To choose appropriate problems on which to focus, enterprises need to analyze their abilities and the comprehensive strengths first. Nestlé’s

![Figure 3. The general form of socialized product innovation](image-url)
attempt to solve public health problems according to its own research and
development capabilities in nutrition is a good example of an enterprise finding
the right fit between its specialties and a particular social problem.

(3) The third kind of link is socializing the design, development and operation of the
products. This link is carried out under the guidance of the goal and combined
with the abilities of the enterprises. To guarantee that this process runs smoothly,
and to prevent losses caused by improper innovation, an enterprise needs to
effectively evaluate and inspect each stage of the innovation. To ensure constant
operations, enterprises may carry out the innovation of products gradually.

According to the above analysis, traditional enterprises may realize transformation
according to the general process of socialized product innovation. It should be noted that
this mode requires enterprises to have a comprehensive ability. For example, decision-
making must reflect the responsibility and consciousness of non-profit entrepreneurialism,
and the enterprise needs to have abilities such as product development, manufacturing,
service, etc. (Chen et al., 2012).

The second path toward transformation is operational innovation. When traditional
enterprises have difficulty offering new products, or their products are not well differentiated
versus competitive products in the marketplace, it is very difficult for enterprises to
compensate for additional costs, whether by directly cutting prices or by selecting other
social problems to address. Under these circumstances, enterprises should change their way
of thinking and consider implementing operation innovation to achieve transformation.

In the process of operations, traditional enterprises may transform successfully through
combining social problems with every section of their operations (Shin et al., 2015), such as
procurement, human resources management, technological development, marketing, sales,
etc. This process of socialized operational innovation is shown in Figure 4.

This process is similar to socialized product innovation, and it is carried out under the
guidance of the enterprise's goals and related to its abilities. Three modes of operational
innovation are analyzed in the following section.

The first mode is human resource management innovation. The human resource
management of traditional enterprises has caused a series of social problems because
traditional enterprises often choose employees through strict standards, causing many
people, such as the disabled, women, middle-aged and older people and so on, to lose
opportunities to earn money through working. Traditional enterprises can realize
transformation in solving this problem. However, enterprises need to take appropriate
measures to ensure that changes in their approach to human resources are specific.

To help disabled people get jobs, the Canyou Group has created computer-based jobs for
thousands of disabled people and made this group a premium human resource. To create a
good environment for the disabled to work and study, the company adopted many measures in
the process of its operations. Canyou Group equipped corresponding facilities of production
and living according to the characteristics of the disabled. At the same time, the company also
helps employees with recovery nursing, marriage and psychological counseling and so on
through various channels. In this process, the Canyou Group solved the social problem of the
employment of the disabled, and at the same time, as an enterprise, it maintained sustainable
development through the value creation of the disabled. Human resources management
innovation at Canyou is the embodiment of socialized operational innovation.

The second mode is marketing model innovation. To achieve the objective of helping
poor people to improve their quality of life, TOMS adopted socialized marketing innovation.
The company designed a marketing model of one for one: that is, TOMS will give a pair of
new shoes to a child in need when a customer purchases one TOMS product. This model is different from traditional enterprises, in that TOMS has adopted a series of corresponding measures to ensure the success of this model. TOMS issues a donation report every year to solicit feedback from the public. TOMS attract customers to participate in sales activities; for example, many customers post photos that are related to TOMS products on the company’s website, which helps the company improve its influence in the market. Through this socialized innovative marketing model, TOMS won the trust and support of society and gained sustainable and steady development.

The third mode is extended producer responsibility. The purpose of extended producer responsibility is to reduce traditional industrial impact on the environment (Shin, 2014a). To achieve this goal, the producer is asked to take responsibility for the whole life cycle of a product, and especially for the recovery and treatment of products (Lindhqvist, 2000). Broadly speaking, all activities that go beyond laws and regulations can be deemed extended producer responsibility. Taking responsibility for all corporate actions and product-related issues typically earns enterprise recognition and a good reputation in society. Therefore, through extended producer responsibility, traditional enterprises can build competitive advantage, obtain higher benefits and realize transformation to MBNPO status.

Analysis indicates that traditional enterprises may realize transformation by means of socialize operation innovation. To improve operational quality and effect, traditional enterprises need to analyze their operational processes scientifically and select the appropriate method of transformation.

The third path toward transformation is synergetic development. Social problems caused by many factors are so complex that we need to use integrated measures to solve them. One effective way to solve social problems is synergetic development. With the development of society and the improvement of civil consciousness, governmental and non-profit organizations as well as many other kinds of enterprises, groups and even individuals have
enthusiasm to solve social problems. Thus, there is a solid social foundation for using synergetic development to solve social problems.

Cooperation between enterprises and stakeholders, such as government, non-profit organizations or any other kind of enterprise, can make full use of resources and help to solve social problems. At the same time, synergetic development helps enterprises transform to MBNPOs because social enterprises rely more on external networks than traditional enterprises do (Desa, 2012).

There are two typical models of synergetic development:

1. The first one is cooperating with a single-objective. Cooperating with a single-objective means that resolving one social problem, through a concrete project, the MBNPO cooperates with its stakeholders. Government is an important stakeholder for enterprises because government can control and mobilize a variety of resources to solve social problems. Another important stakeholder of the MBNPO is non-profit organizations, which play an important role in philanthropy, education, environmental issues, etc. Synergetic development is easy to accomplish because MBNPOs and non-profit organizations share similar values and goals (Gazzola and Ratti, 2014).

2. The second mode of synergetic development is establishing coordinated development platforms to establish a supporting system for solving social problems. Through the operations of such a platform, various social sources may be used effectually, and the corresponding social problems may be managed persistently. For example, to provide eye care for inner cities and remote rural areas, the International Partnership for Innovative Health Care Delivery (IPIHD) cultivates nurses and helps them found clinics. IPIHD has created a coordinated development platform to solve the social problem of eye care. Another example of a development platform is the Qiang embroidery support center established by a company called Aba. This platform provides training in Qiang embroidery for women in disaster-struck areas of Wenchuan and helps them sell products.

To ensure the smooth implementation of synergetic development, enterprises can establish a harmonious mechanism of diversified subjects participating in management. In cooperating with other organizations, enterprises should choose the method and areas of cooperation carefully to ensure their independence.

3. Management innovation of the mutually beneficial nonprofit organization

3.1 Mechanism of integrated marketing communications in mutually beneficial nonprofit organization management innovation

There are three principles in management innovation:

1. Management innovation is market-oriented;
2. Management innovation is a systematic process; and
3. Management innovation is objective-centered.

These three principles play a role in management innovation, keep the innovation process on the proper path and help an organization avoid falling into unproductive habits.

A study of 34 high-tech organizations showed that their ability to simultaneously execute exploration and exploitation was associated with higher performance (He and Wong, 2004). Commercial enterprises and MBNPOs can overcome organizational challenges
by using IMC. The mechanism of IMC in the MBNPO management innovation process is shown as Figure 5.

3.1.1 **Lead market-orientation specific to stakeholder-orientation.** IMC theory emphasizes that all organizational operation should be stakeholder-oriented, which is almost the same as being market-oriented. IMC theory suggests that organizations pay more attention to stakeholders to understand the real appeal of stakeholders, and that they then carry out proper marketing communication plans to communicate relevant information. With the help of IMC in MBNPO management innovation, the MBNPO can transfer its concentration to groups of stakeholders, not to the entire market, and this may help the MBNPO focus on small, special scopes of its target market (Amit and Zott, 2012).

3.1.2 **Make management innovation systematic in mutually beneficial nonprofit organization.** IMC is a systematic process itself, and IMC strategy and an IMC plan include all aspects of organizational operation. IMC is essentially the same as management innovation. IMC procedures may help to support organizational reform with management innovation and consequently may help an organization achieve superior performance. Oriented by the appeals of target stakeholders, the MBNPOs’ goals of management innovation become explicit and concrete, the effects of marketing communication will occur as expected (Salerno et al., 2015). Many aspects must be improved upon, such as strategy management, operational management, finance management and so on, as demanded by both IMC and management innovation.

3.1.3 **Clarify targets of management innovation in mutually beneficial nonprofit organization.** The procedure of management innovation is an objective-centric approach, and each step of innovation aims at accomplishing the expected goals. But, management innovation theory does not illustrate objectives definitely and clearly, and this decreases the significance of practice instruction. As with management innovation theory, IMC theory is also objective-centric; however, the objectives of IMC are clear and concrete, while this is not always true of management innovation theory. The implementation of an IMC plan aims at reinforcing two-way communication to make the relationship between the organization and stakeholders intimate and consolidated. The execution of IMC plans can improve brand value, increasing the organization’s overall value. In other words, IMC makes the objective of management innovation easy to understand and accomplish, and it provides superior guidance to management practice. IMC may provide a beneficial supplement to management innovation (Ivanov, 2015).

3.2 Mutually beneficial nonprofit organization management on the basis of integrated marketing communications theory

Under the guidance of IMC theory, the MBNPO makes a blueprint of IMC strategy and implements it to achieve a higher operational performance. The MBNPO may use IMC
theory to conduct operational plans and to enhance its performance by means of enforcing five steps. The five steps of MBNPO operations described above comprise an entire management circulation as shown in Figure 6.

3.2.1 Identifying existing customers and potential customers. The first step is identifying existing customers and potential customers. Collecting customers’ behavioral data is the key element in identifying customers, as well as in understanding the reasons why customers behave in certain ways. The behavioral data about customers should be consolidated and integrated so that marketing communication managers can use it to design proper communication with target individuals or target corporations. Marketing communication managers classify customers according to their behaviors, and this can help the MBNPO devise highly relevant communications with target stakeholders.

3.2.2 Appraising value of both existing customers and potential customers. The second step is appraising the value of both existing customers and potential customers. The estimated financial capacity of existing customers and potential customers should be assessed to provide a clear sense of how much income customers may provide. The MBNPO can design a marketing communication mix according to income scale to attract target customers, to maintain customers, to develop customers and so on.

3.2.3 Hatching communication information and plans of motivation. The third step is choosing and devising communication information and plans of motivation. The MBNPO has to devise persuasive content to communicate with target stakeholders according to their unique features. The aim of communications is to send highly relevant information to both existing and potential consumers on the right occasions and in the right locations. Plans of motivation should be embedded in the information sent to the target stakeholders.

3.2.4 Evaluating return on customer investment. The forth step is evaluating the return on customer investment. IMC theory considers customers as capital and demands a clear

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**Figure 6.**
Management circulation of MBNPO based on IMC theory
financial result for each single marketing communication plan. In IMC procedure, marketing communication managers must prove the positive results of their marketing communication, and they must make clear which communication plan acquires the optimal performance with the highest efficiency. Short-term returns improve business development, considered mainly in terms of the instant growth of revenue; long-term returns concentrate on brand building, paying close attention to incremental development of brand assets in the long run.

3.2.5 Post-mortem analysis and further plan. The fifth step is post-mortem analysis and further planning. An MBNPO must choose a period over which the IMC plan will be implemented in the target marketplace/s. A series of appraisals should be launched after the implementation of an IMC plan. On the basis of deliberate analysis of the marketing communication result, a new investment strategy will be designed for further development. IMC is never invariable, and IMC theory argues that marketing communication is a constant and continuous procedure with no end/that will never be finished (Battistella et al., 2012).

4. Conclusion
To increase the number of MBNPOs and improve management performance, this research introduces IMC theory to further management innovation and establishment of MBNPOs. The 5Rs of IMC point out the essential purpose of the MBNPO’s origins and draw a feasible path for its establishment. IMC makes the relationship between the MBNPO and its stakeholders reinforced and long-term interest supported. MBNPOs have great significance in the realization of social value, and therefore they need increase in quantity and higher business performance by management innovation.

According to findings of the research, four steps in establishment of MBNPO are clear:
(1) identifying the target group that the MBNPO will service;
(2) providing services to meet the demand of stakeholders;
(3) designing appropriate communication tactics; and
(4) deploying proper organizational structure to accomplish efficient communication.

The four steps mentioned previously make the information and service circulate efficiently and continuously between MBNPO and target stakeholders. Traditional enterprises can transform into MBNPOs. There are three transforming modes listed as below:
(1) product innovation;
(2) toward transformation is operational innovation; and
(3) toward transformation is synergetic development.

IMC theory is beneficial for management innovation of MBNPOs as listed below:
• leading market-orientation specific to stakeholder-orientation;
• making management innovation systematic in MBNPOs; and
• clarifying targets of management innovation in MBNPOs.

There are limitations on content and methods in this research, and the limitations should be taken into account in further research to make progress. Theoretical discussion is in detail, but empirical proving is insufficient in this research. Careful and detailed case study combined with adequate data collection and analysis will make this research enriched and improved. The findings of this research are mainly discussion on establishment path and management innovation of MBNPOs, while study on management practice according to
MBNPOs features is beyond research content. In the future research, specific management measures may be investigated from different perspectives according to features of MBNPOs, such as research on management performance by using ambidextrous organization theory and value co-creation theory, etc.

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Further reading

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The effect of female participation in top management teams on the growth performance of small and medium-sized enterprises (SMEs)

Evidence from a panel-data analysis in Chinese-listed SMEs

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Abstract

Purpose – This paper aims to examine the relationship between the female participation in top management team (TMT) and the growth performance of small and medium-sized enterprises (SMEs) in the Chinese economic environment.

Design/methodology/approach – Adopting resource dependence theory, this paper tests the hypotheses using panel data from 469 Chinese-listed SMEs during the period of 2011 to 2013.

Findings – The results show that female participation in TMT significantly promotes the growth performance of SMEs, and there is significantly inverted U-shaped relationship between these two variables.

Originality/value – This paper finds that education level weakens the inverted U-shaped relationship between the female’s participation in TMT and the growth performance of SMEs.

Keywords Small and medium-sized enterprises, Female participation in TMT, Growth performance, Education level

Paper type Research paper

Introduction

Data from Global Entrepreneurship Monitor (GEM), which is a leading academic research project in entrepreneurship, show that the proportion of women involved in entrepreneurship increased from 4.93 in 2001 to 11 per cent in 2014 around the world. The contribution of women entrepreneurs to the economic and social development is increasing rapidly, and women entrepreneurs have become one of the main driving forces in the global economic growth. This phenomenon is particularly highlighted in China. According to the “Hurun Richest Self-Made Women in the World 2015”, 49 of the 73 come from China, which
is 67.12 per cent of the total. However, the majority of female workers in developing countries enters the labor market through the sector of small and medium-sized enterprises (SMEs), and most of them are indulged in the service and other small-scale industries (Singh et al., 2001). SMEs are very important for the stability of national economies and also play a key role in the development of innovation productivity and employment. However, the stability for sustainable development of the SMEs is poor and also facing financing difficulties. Therefore, to attract investors and ease the financing disadvantage, after surviving from the fierce competition in the market, the next important problem of the SMEs is to maintain sustainable and stable growth. How to construct an appropriate organizational structure, especially the top management team (TMT) for the achievement of sustainable growth of the firm, is an attractive question for the practitioners and academicians. Academic research has especially investigated the effect of female participation in TMT exerted on firm performance (see literature review further below), and they measured the firm performance by market, products/services, employment and so on. However, the stakeholders are focused on the ability to grow in the long term rather than the short-term profitability of the firm. The growth abilities are considered as fundamental factors to the SMEs in the process of strategic and adjustment choices. Thus, exploring the influence of female participation in TMT on SMEs’ growth performance has strategic importance.

**Literature review**

Many scholars in recent years have studied the relationship between female participation in TMT and firm performance. However, the empirical evidence in the extant literature is inconclusive. Some suggest that female participation in TMT has significant positive effects on firm performance. Using the data for the 2,500 largest Danish firms observed during the period 1993-2001, Smith et al. (2006) found a significantly positive effect of the proportion of women in top management on firm performance as measured by gross profits to sales. Moreover, they also found that the positive effects of women in top management strongly depended on the qualifications of female top managers. Joy et al. (2007) analyzed the US firms during 1996-2000 and found a positive relationship between the proportion of women in top management and firm performance. Some evidence shows that there is no significant relationship in some cases. Campbell and Minguez-Vera (2008) used the data for non-financial firms listed on the continuous market in Madrid during the period from 1996 to 2000 and found that the relationship between the percentage of women on the board and firm value was not significant. Carter et al. (2010) examined the sample of 641 US firms in the S&P 500 index, and they were unable to find any significant relationship between the number of women directors and Tobin’s Q. Contrary to these findings, some scholars find that female-owned firms have lower level at firm size, survival rate and growth (Aterido and Hallward-Driemeier, 2011; Coleman, 2007; Zwan et al., 2012; Bardasi et al., 2011; Coleman and Robb, 2009), compared to male-owned firms. Using a sample of Kuwait small firms, Alowaihan (2004) found that female-led firms are worse than male-led firms at the level of performance. Singh et al. (2001) found that employment growth rates of female enterprises were significantly lower than those of male enterprises in an analysis of micro and small enterprises in Java.

In addition, there are limited amount of research discussed on the topic in China so far. Ting and Zheng (2010) used an empirical analysis to support a positive relationship between the degree of female participation and firm performance in Chinese privately owned companies. The positive relationship was further strengthened by female top executives’ human capital and social capital. Using a sample of Chinese GEM companies taken from
2009 to 2010, Ping and Qihong (2012) found that female executives had a positive significant effect on technological innovation. Human capital strengthened the positive significant effect of female executives on innovation performance.

To summarize, the conclusion from the previous empirical studies is extremely ambiguous. This may be due to different samples and methods selected. First, the geographical characteristics of the SMEs play a crucial role because of the unpredictable literature i.e. on one hand in Europe and America there is a positive impact of female participation in TMT, while on other hand researchers come up with negative impact in Africa and Asia. Second, the existing studies are focused on large firms, and the studies about SMEs are very few. However, most of the female-led firms are SMEs. In addition, SMEs have been playing more important role in China’s economy in terms of employment, innovation and productivity. Third, existing studies are mainly using the bivariate model which is too simple.

To conclude, the present study investigates the relationship under the context of Chinese SMEs. In this paper, we select the listed firms in the SME Board as the sample and use multivariate analysis of fixed effects to examine the relationship between female participation in TMT and growth performance. Furthermore, we examine the relationship in the context of the female top executives’ human capital.

Theory and hypotheses
Resource dependence theory and female participation in top management team
Resource dependence theory (Pfeffer, 1972; Pfeffer and Salancik, 1978) suggests that organizations are open systems and need to obtain specific resources from or have interdependent relationships with the external environment for survival. So organizations need to make links with the external environment to reduce the dependency and to facilitate the attainment of resources. A primary linkage between firms and the external environment is the TMT. The board of directors has the responsibility to supply, acquire and use the resource within the organization. Along with this, they provide benefits to the organization in three different ways, i.e. advice and counsel, legitimacy and arranging the channels to communicate information and to gain superior access to the obligations or to support from important elements outside of the firm.

Hillman et al. (2000) expand these three benefits into a taxonomy of director types that provide various resources to the firm: business experts, supports specialists and community influential. Their extension of resource dependence theory suggests that different types of directors will provide different beneficial resources to the firm. As a result, a more diverse board will provide more valuable resources, which should produce better firm performance.

The resource dependence theory is applied to female participation in TMT, and many scholars agree that female executives provide a unique advantage to the firms (Hillman et al., 2007; Martinugedo and Minguezvera, 2014). According to that, the benefits of female participation in TMT can be summarized into the following two points:

First, the supply of resources and female participation in TMT will improve the organization’s decision-making capacity. On the individual level, female participation in TMT can respond to the cognitive limitations of individuals effectively. The individual’s cognitive ability of decision making is inadequate as revealed by the behavioral economics and organizational behavior. In the process of decision-making, the top managers use two kinds of factors, one to evaluate the limited available information about production and operation, and second to use “self Preferences” about any consideration. Female executives can provide different views and perspectives for
decision-making as well as generate more alternative and different solutions to the specific problems because they have different personality traits, such as perception, circumspection and acuteness as compared to male executives. In the side of strategy choice, women tend to have higher risk aversion and choose a stable growth rate for the firm (Sabarwal et al., 2009); in decision control, women are more open and emphasize sharing and broad participation (Gardiner and Tiggemann, 1999). On the firm level, females participating in TMT bring unique resources to the firms. The essential requirement of the resource dependence theory relies on the complement of personal characteristics (background and ability of the TMT members) and the strategic resources, i.e. provided by the members jointly. By virtue of their different experiences from professional life and private life (no-working) as compared to men, women may have different human and social capital. All of these can bring various varieties of thoughts, experiences and innovative ideas to the firm (Liu and Li, 2010).

Second, the acquisition and utilization of resource, female participation in TMT can help the organization to acquire the external resource and take full advantage of the internal resource. In terms of resource acquisition, the presence of women in top management positions may improve the image of the firm, and the positive image has positive effects on customers’ behavior (Smith et al., 2006). Beside, women mingle and understand each other swiftly. As Hillman et al., 2007; Smith et al., 2006 highlighted the importance of women in the team i.e. they can recognize the female customer’s demand and indirectly they can have a better understanding of the market. Thus, they can acquire more different external resources to the firm. On the other hand, female executives can help the firm to acquire the special external resource, such as information, financial capital and others because of their special social network and experience. Female executives can provide important ties to those firms having female executives because of female’s special network; they can help the firm link to investors having special polices for female. As for utilization of resource, compared to men, women have deeper perspective and higher personal commitment. Female participation in TMT signals that the firm offers opportunities for career growth to both current and prospective employees. Similarly, female executives serve as role models to individuals inside the organization, as mentors for aspiring women employees (Hillman et al., 2007; Lückerath-Rovers, 2013). In addition, female executives, because of higher personal commitment, better self-restraint and more intimate management style, are more likely to improve employee satisfaction and enthusiasm. Therefore, gender diversity in TMT can bring firms more valuable resources, which help firms better deal with environmental uncertainty and interdependence also perform better.

Nevertheless, there is a critical value for the proportion of female participation in TMT. Once the proportion of female participant is increased, then that critical value and the TMT move toward the homogeneity. The homogeneous team is not conducive to the internal cognitive conflicts; thereby, the lower level of discussion, exchange of information, ineffective of knowledge and skills are used in the process of decision-making. Eventually, in the case of excessive homogeneity, the team will make an extremely conservative or radical decision (Hu et al., 2014). Moreover, women have lower growth expectations than male, and lower growth expectations may hinder the growth of the firm (Robb and Coleman, 2009).

In summary, we believe that gender diversity in TMT will facilitate the growth of the firm and the phenomenon of “going too far is as bad as not going far enough” in other words that too much is bad as too little. Thus, we propose the following hypothesis:
Female participation in TMTs has an inverted U-shaped relationship with the SMEs’ growth performance.

The moderating role of human capital
Human capital refers to the individual’s knowledge, skills, physical strength and so on, which ultimately comes to the firm along with the individual. It reflects individual’s cognitive ability, information processing skills, analysis capabilities and problem-solving skills. Valuable human capital collection can increase the effectiveness of the firm’s management and the quality based on the level of education, i.e. the higher education level of executives in TMT, the higher the benefits to the firms (Hambrick et al., 1996). Education is the fundamental way to improve individual’s human capital, thus, as to human capital; the present paper refers to the education level of female top executives. Smith et al. (2006) found the proportion of women in top management jobs tended to have positive effects on firm performance, and this positive effect strongly depended on the qualifications of female top managers.

The level of education is consistent with an individual’s cognitive ability and skills. Higher levels of education represent stronger capability of information processing and ability to discriminate among a variety of stimuli (Ting et al., 2011). Therefore, the higher level of education the female executives have, the stronger cognitive ability and decision-making capability TMT gets, which facilitate business growth performance.

Furthermore, an average education level of the TMT has been found positively associated with the team’s receptive attitude and cognitive ability toward innovation. Camelo-Ordaz et al. (2005) put forward that executives with higher education levels possess more innovative awareness and ability, and executives with lower education levels made decisions on the basis of practices; they were more willing to maintain the status quo.

Therefore, the education levels of female top executives can alleviate the “going too far is as bad as not going far enough” phenomenon to some extent. Thus, we propose the following hypothesis:

H2. The education level of female executives weakens the inverted U-shaped relationship between female participation in TMTs and SMEs’ growth performance.

Data and methods
Sample data
This paper uses the sample of listed firms in Chinese SME board during the period 2011-2013. The balanced panel data were mainly collected from the China Stock Market and Accounting Research (CSMAR) database. CSMAR database is regarded as an authoritative data source of the listed firms in China, and it reports the exchange data of the Chinese securities market and relevant financial information. To ensure the validity of the sample, we treat the samples as follows:

- We exclude ST and *ST companies which have been specially treated because of abnormal production operations.
- We ignore firms with incomplete information about the education level of female executives and financial performance. To ensure the accuracy of the data and to preserve the samples as possible, the present study takes reference of Wind Info database to update and complete some related information of CSMAR database. As for some missing information, we also use the data from public information of
listed companies from Cninfo www.cninfo.com.cn to fill in. Cninfo is the earliest securities information professional website in China. After these steps, the firms are removed if their data are still incomplete.

- We drop firms listed after 2010 to ensure the integrity of accountancy period, i.e. the data requirement for penal data analysis is incomplete if the firm listed after 2010. The final sample consisted of 469 firms and 1,407 listed SMEs observations. The samples are involved in 15 industries, such as manufacturing, construction, transportation, etc., and in multiple provinces of the country including Beijing, Shanghai, Jiangsu, Zhejiang, Fujian, Guangdong, Xinjiang, etc. Consequently, the sample is representative. In this paper, all of the data were performed in Stata12.0 software.

Variable measurement
Dependent variables: growth performance (Sgro). We adopt the sales growth rate as the measure of firm growth performance. We normalize growth by using the formula:

\[
Growth = \frac{X_i - X_{i-1}}{X_{i-1}}
\]  

(1)

where \(X\) = sales revenue for measuring sales growth; \(i\) = years.

Explanatory variables: female participation (Fpro). In this paper, the definition of female executives refers to the female who have ownership or actually participate in management including top executives and board of supervisors. There are two ways to measure these variables. The first is to generate a dummy variable to measure female participation in the TMT. This variable is coded 1 if the firm has at least one female executive and 0 otherwise. The second one, which is used more often, is the female participation ratio, the number of female executives divided by the total number of executives. We choose the second one, as 86.99 per cent in 469 firms have one or more female executives.

Moderator variables: The education level (Fedu). Education level is an important indicator of human capital. The education level of executives is coded in the CSMAR database:

- representing technical school graduate or below;
- junior college graduates;
- bachelor’s degrees;
- master’s degree; and
- doctoral degrees.

In this study we follow the same approach of CSMAR and use the average level of education among female executives as moderator.

Control variables: To guarantee the reliability of the research results, this paper controls the factors from two groups.

The group of firm characteristic variables:

- firm age, measured by the number of years that a firm is listed on the exchange (Fage);
- firm size, measured by the natural log of the total assets (Size); and
- firm ownership, dummy variable which equals 1 when the firm is state-owned, equals 0 when the firm is non-state-owned (Ows).
The group of corporate governance structure characteristic variables:

- team size, measured by the total number of executives (Tsize);
- ownership concentration, measured by shareholding percentage of the ten largest shareholders (Shr); and
- leverage: measured by the ratio of debt to assets (Lev).

Model design

Based on the above analysis, to test H1, we propose the following model:

$$S_{gro_{it}} = \alpha_0 + \beta_1 Fpro_{it}^2 + \beta_2 Fpro_{it} + \beta_3 Fedu_{it} + \beta_4 Fage_{it} + \beta_5 Lev_{it} + \beta_6 Shr_{it} + \beta_7 Size_{it} + \beta_8 Tsize_{it} + \sum Ind + \sum Reg + \sum Owner + \varepsilon \quad (2)$$

To test H2, we introduce the cross-product of female participation in TMT variable and female human capital variable and the cross-product of the square term of female participation in TMT variable and female human capital variable into the model:

$$S_{gro_{it}} = \alpha_0 + \beta_1 Fpro_{it}^2 + \beta_2 Fpro_{it} + \beta_3 Fedu_{it} + \beta_4 Fage_{it} + \beta_5 Lev_{it} + \beta_6 Shr_{it} + \beta_7 Size_{it} + \beta_8 Tsize_{it} + \beta_9 Fpro_{it} \times Fedu_{it} + \beta_{10} Fpro_{it}^2 \times Fedu_{it} + \sum Ind + \sum Reg + \sum Owner + \varepsilon \quad (3)$$

where \( t \) represents the year, refers to the year of 2011, 2012, 2013; \( i \) represents firms; \( Fpro^2 \) represents the square term of \( Fpro \), to eliminate collinearity, the variables of \( Fpro \) are mean-centered before squared. Similarly, the variables of \( Fpro, Fpro^2 \) and \( Fedu \) are mean-centered prior to the formation of interaction terms. Government support is different in different industries; the degree of market competition is different in different regions. The policy and market factors will affect the prospects for the development of firms. We need to eliminate the impact caused by industries and regions; thus, we introduce dummy variables of industries (Ind) and Regions (Reg).

Results

Descriptive analysis

Table I provides descriptive statistics for our sample. As we can see, there are 1,047 observations in total. The mean and the standard deviation of sale growth rate are 0.189 and 0.43, respectively. However, the variation in the sample is significant with the minimum sale growth rate 0.14 and the maximum 4.54. Of 469 firms, 86.99 per cent (408 firms) have one or more female top manager on average during 2011-2013. The average female participation ratio only is 0.174 and the maximum is 0.5, which indicates that half of top managers are female in some individual firms. In addition, the mean of education level of female top manager is 2.894, which means that the average education level of female top manager is junior college graduate or bachelor’s degree.

As shown in the Table I, the mean of firm size of the sample firms is 12.293, and the average number of top managers is approximately 18. The mean and the standard deviation of firm age are 4.336 and 2.051, respectively.
Multiple regression analysis

The main types of panel data model are random effects model, fixed effects model and mixed effects models. For our data, the Hausman test results suggest that the fixed effects are superior to random effects model; thus, we choose to use the fixed effects model for regression analysis. There may be heteroskedasticity between individuals due to large N small T panel data. After testing three models, we find that they do suffer from heteroskedasticity. To deal with heteroskedasticity problems, nonparametric covariance matrix estimation is used. Table II reports the regression result.

The regression results of three models suggest that F values are significant at the 0.001 level, indicating the regression analysis is meaningful. Model 1 tests the effect of control variables. All the control variables are found to be negatively associated with firm growth performance except firm age, which has a positive significant relationship with firm growth performance. The coefficient of firm size is negative and significant. As SMEs have limited management level and often lack various resources, the expansion of firm size may bring about diseconomies of scale and lead to decrease in management efficiency. The coefficient of team size is also negative and significant, and this negative impact on the growth performance may be explained by poor internal communication and inefficient management because of over size of TMT. In addition, leverage is found to be negatively and significantly related to growth performance.

Model 2 examines the relationship between the explanatory variable, female participation ratio and the dependent variable, sale growth rate. Female participation ratio has a significant positive linear relationship with sale growth rate (coefficient is 0.335, \( p < 0.001 \)). Meanwhile, the square term of female participation ratio is negatively and significantly related to sale growth rate (coefficient is 0.652, \( p < 0.05 \)). This supports \( H1 \), which suggests that female participation in TMT has an inverted U-shaped relationship with the growth performance.

Model 3 examines the moderating effect of female top managers’ education level. The interaction term of the female participation ratio multiplied by education level has the coefficient of 0.224 (\( p < 0.01 \)) and is significantly and positively linked to growth performance. In addition, the interaction term of the square term of female participation ratio multiplied by education level has the coefficient of 0.652 (\( p < 0.05 \)) and is significantly and positively linked to growth performance. This suggests that female top managers’ education level has moderating effect on the inverted U-shaped relationship between female participation in TMT’s and SMEs’ growth performance, respectively.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Variable code</th>
<th>Observations</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
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<tr>
<td>Sales growth</td>
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<td>1,407</td>
<td>0.189</td>
<td>0.430</td>
<td>-0.66</td>
<td>10.77</td>
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<td>Female participation</td>
<td>Fpro</td>
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<td>0.103</td>
<td>0</td>
<td>0.5</td>
</tr>
<tr>
<td>Education level</td>
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<td>0.990</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Firm age</td>
<td>Fage</td>
<td>1,407</td>
<td>4.336</td>
<td>2.051</td>
<td>1.003</td>
<td>9.523</td>
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<tr>
<td>Firm size</td>
<td>Size</td>
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<td>0.862</td>
<td>9.384</td>
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<tr>
<td>Team size</td>
<td>Tsize</td>
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<td>18.124</td>
<td>4.414</td>
<td>10</td>
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<td>0.1952</td>
<td>0.008</td>
<td>0.945</td>
</tr>
<tr>
<td>Ownership concentration</td>
<td>Shr</td>
<td>1,407</td>
<td>62.915</td>
<td>13.099</td>
<td>21.371</td>
<td>94.459</td>
</tr>
</tbody>
</table>

Table I. Descriptive statistics
To better analyze the moderating effect of female top managers’ education level, this moderating effect is plotted with the following method. We use one standard deviation above and below the mean to represent high and low levels of education level based on the coefficients in Model 3. Figure 1 is finally obtained.

Figure 1 shows that the inverted U-shaped relationship between female participation in TMT and growth performance is positive and is significant at a high level, while this...
relationship is insignificant at a low level. This suggests that the moderating effect of education level does exist. In other words, when the education level of female top managers is high, the phenomenon “going too far is as bad as not going far enough” is weakened.

Robustness checks
To ensure the reliability of empirical results, we use the 432 firms which have female top managers as the sub-sample to perform the robustness test. We repeat the previous regression with the sub-sample and find that the regression result is not significantly different from the previous results in Table II.

Conclusion
The purpose of this paper is to examine the relationship between female participation in TMT and SMEs’ growth performance within the context of China particularly, to investigate the moderating effects of education level of female top managers in this relationship. We analyze the public panel data from 469 listed SMEs during the year from 2011 to 2013. Our results reveal that a more balanced gender composition in TMT is associated with higher growth performance rather than proportional dominated by gender. Our results also highlight the role played by the education level of female top managers in the relationship between female participation in TMT and the SMEs growth performance. In fact, the education level of female top managers weakened the moderating effect on the inverted U-shaped relationship, which means that the lower education level of female top managers have, the more significant the inverted U-shaped relationship will be.

This paper provides implications for theory development and practical management. From a theoretical viewpoint, this paper extends the existing literature about the growth of SMEs and also broadens the scope of female entrepreneurial performance studies. We empirically test the positive effect that a female brings in SMEs under the context of China, and this will provide inspiration to carry out relevant international comparative study.

From a practical perspective, we emphasize the importance of female executives and their education level for the growth of SMEs. This provides useful empirical guidance for the Chinese policymakers, regulators and corporate decision makers concerning TMT gender diversity in SMEs. These results also help them to realize the importance of female executives for firm growth and, in particular, become aware of benefit of the high education level of female executives to firm growth.

Despite the contributions mentioned above, there are also some limitations. First, this research only considers the effect of education level of female executives, and the education level is just one aspect of human capital. The experience and skills of female executives may also have influence on the growth performance; future research should examine the impact of female executives’ human capital on the growth performance from multiple dimensions. Second, this research primarily focus on the gender characteristics of top manager team, but other factors such as behavior of top manager team, environments and culture are not examined. In future research, we will have a more complete understanding of these factors. Finally, our sample only contains listed SMEs in Shenzhen Stock Exchanges, and these firms usually develop in good condition. Future study should expand the range of objects and use the sample containing all stages of SMEs for further study.
References


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