RESEARCH   **Open Access**

CrossMark

From adaptive to generative learning in small and medium enterprises-a network perspective

Chao-Hua Li

Correspondence:
sheila1026@twu.edu.tw
Department of Business
Administration, TransWorld
University, Douliu (640), Yunlin,
Taiwan

Abstract

Organizational learning has been playing an important role for competitive advantages for the organization. Managing learning and change in the unique context of small and medium enterprises (SMEs) can obtain benefits from network alliance. The paper seeks to draw attention to learning approaches from adaptive learning to generative learning in a SME in the context of asymmetric learning relationship. A qualitative research is conducted on a towing company of Taiwan with 14 in-depth interviews on persons of strategic alliances. This study discusses an asymmetric learning relationship where a large enterprise dominates the central place of the network, decides the learning policies and practices and guides learning involving adaptive and generative learning. This case of the SME assumes adaptive learning to ensure the development of network capability and adopts generative learning through communication channels and resources provided by the central firm. The outcomes of generative learning are the enhancement of absorptive capacity, the transfer of knowledge, shared identities, and shared contextual understanding in the towing industry. Though acquiring generative learning development, the case of the SME gets a competitive advantage but chooses to stay small and to be a business owner. This situation meets the psychological needs of the Chinese people.

Background

Learning involves knowledge processing for change and improvement (Jerez Gomez et al., 2005). Managing learning and change in the unique context of small and medium enterprises (SMEs) can obtain benefits from network alliance (Saunders et al., 2014). A SME's relationship between companies is usually through senior managers' contacts with potential external partners or previous trading experience (Gulati, 1998). Learning and change for SMEs are influenced by factors in a wider context embedded in economic, political, social and institutional systems.

With limited control over their environment and resources, SMEs confront difficulties in initiating learning and carrying out the magnitude of change that is appropriate to meet accurately diagnosed problems. The paper seeks to draw attention to learning approaches from adaptive learning to generative learning (Argyris and Shone 1978; Senge 1990) in a SME in the context of asymmetric learning relationship where the hub center corporation has the information and power advantages over its disconnected partners of SMEs (Greve et al. 2014). One of the most important classical

typologies within organizational learning literature is the distinction between adaptive and generative learning (Argyris and Shone 1978; Senge 1990). The issue of adaptive and generative learning has not been featured in the small firm, despite numerous studies centered on the issues of entrepreneurial innovation and learning orientation (Jasra et al., 2011; Wolff et al., 2014). Adaptive learning permits an organization to maintain its currently policies and act consistently with them; generative learning involves examination of an organization's assumption and modification of the underlying norms, policies and objectives. The ability of SMEs to successfully plan and implement change requires both adaptive and generative learning. However, Argyris (1994) states that generative learning is an aspect of learning few groups or organizations engage in successfully.

Research indicates that SMEs' long-term success and growth require innovation, learning and development (Anussornnitisarn et al., 2010). Enterprises with less than 100 regular employees are classified as SMEs, which constitute about 97.6 percent of business establishments in Taiwan (White Paper Book, 2014). Skerlavaj and Dimovski (2007) suggest that using real-life case studies of social network within organizations help to understand factors influencing SME's learning. The towing sector in Taiwan has regional features and large companies seize this opportunity to recruit regional road-rescue entrepreneurs to establish network relationships. This study demonstrates that a SME commits to the learning policies and practices to obtain adaptive learning and further acquires the network resource to get generative learning development in asymmetric learning relationship.

Adaptive and generative learning in SME's networking

Cyert and March (1963) first spoke of 'organizational learning' in *A Behavioral Theory of the Firm* and defined organizational learning (OL) as "adaptive behavior of organizations over time." Since then, the concept has grown into diversity from different perspectives and in different type of articles. According to OL literatures (e.g. Senge, 1990), OL takes place at three stages. Argyris (1976) labels learning as either "single"-or "double-loop" learning. Single-loop learning, or adaptive learning, is learning that fits prior experiences and existing values, which enables the learner to respond in an automatic way. Double-loop learning, or generative learning (Senge, 1990) is learning that does not fit the learner's prior experiences and it requires learners to change their mental schema in a fundamental way. Aside from single-and double-loop learning, activities associated with the organizational level and the external environments are concerned with triple-loop learning.

OL in SMEs are unplanned and reactive nature (Vickerstaff and Parker, 1995), less sophisticated and insufficient compared to larger firms (Nolan and Garavan, 2012), or informal and idiosyncratic approaches being used (Hill and Stewart, 2000; Kitching, 2007). Some other relevant research suggests that an entrepreneur's ability to engage in "double-loop" learning and reflection allows a firm to create or recognize valuable, rare and exploitable ideas faster and more effectively (Alvarez and Busentiz, 2001). However, double-loop learning or generative learning is a meta-construct that is not easy for SME entrepreneurs. Wolfe and Gertler (2002) suggest that network learning facilitates SMEs to engage with generative learning and to question established assumptions about their mission, customers, capability or strategy. Organizations differ in their ability to assimilate

and replicate new knowledge gained from external sources. The literatures on absorptive capacity (e.g. Cohen and Levithal, 1990) discuss this aspect of learning with a focus on R&D and large enterprises. In the case of SMEs, R&D activities have been less evident. Muscio (2007) suggests that alternative sources of learning, such as human resources management practices or learning by doing, assume a key role in developing absorptive capacity which further makes impacts on the ability of firms to establish collaborations with external organizations. On the other hand, Mustaf Kmal (2013) suggests that collaboration with professional institutions or joint venture businesses develop relevant background knowledge, and increase the organization's capabilities to assimilate and exploit new knowledge. These researches argue that learning between firms develops absorptive capacity for SMEs, thus facilitating SMEs to recognize and value new eternal knowledge, to assimilate that knowledge, and to commercially utilize it. And it is process of generative learning development.

Networking in SMEs is defined as "the action by which an owner-manager develops and maintains contacts for training and business development purposes" (Chell and Baines, 2000, p. 196). Network ties are positively related to knowledge acquisition, and, in turn, knowledge acquisition enhances knowledge exploitation for competitive advantages through new product development, technological distinctiveness, and sales cost efficiency (Yli-Renko et al. 2001). In particular, tacit knowledge is transferred in highly cooperative relationships as it requires direct and personal interactions; on the other hand, in the case of competition, Sören Kock (2000) suggests that proximate competitors are able to observe each others' moves and countermoves, enabling them to rapidly imitate each others' products.

Nevertheless, in the learning network processes, there are issues of learning policies and programs (Poell et al. 2000; Van der Krogt, 1998). The development of learning policies refers to influencing the general direction of the learning network, that is, what people should learn and in what way they should learn it; the development of learning programs comprises the making of coherent sets of activities in which people learn (Poell et al. 2000). In SMEs' networking, there are inequalities of control and power, and differing views and motives which influence and shape learning (Antonacopoulou and Chiva, 2007). A network perspective allows a discussion of asymmetric learning relationships where inequalities of control and power serve as stabilizing and controlling force in the network (Higgins et al., 2013), and allows learning outcomes in expanded forms, such as the exchanges of tacit knowledge, a network identity, or common values and rules about sharing procedure knowledge.

Background of the towing industry in Taiwan

Emergence road service industry is a potential market. The population in Taiwan was estimated in December 2013 at 23,373,517 (2013, Government Information Office of the Republic of China). The total number of motor vehicles in Taiwan is 21,562,645 (2013, Government Information Office of the Republic of China). Namely, almost each person owns a motor vehicle. Increasing traffic loads of passengers require a system of road rescue service. First, yearly output of the market leader, Triumph Motor Service (TMS), shows the scale of the industry: TMS has a market share of seventy percent in the industry and its yearly market value is 3 billion (Business Weekly, 2013). Secondly, the industry has a low entry barrier (five big towing trucks with 8.8 tons towing

capacity and five small trucks under 8.8 tons towing capacity are sufficient to enter the towing industry in Taiwan). Thirdly, the second large-scale towing organization is Taiwan Area National Freeway Bureau (TANFB) under the administration of Ministry of Transportation and Communication. Most of the towing companies are SMEs and they join a network to obtain benefits of resources and competition.

Methods

Selection of the case

This study chose KH (not a real name) as the subject for research investigation. KH was founded in 1993 with a venture capital of 8.31 million Taiwanese New Dollars. The annual revenue is about 3.6 million. The company provides 24 hour roadside assistance, such as professional, large and small vehicle towing services, and rescue-basket service. A SME, like KH, sustaining more than 20 years, is able to provide data on learning advantages from a network relationship. The researcher got involved with the case in 2013 when there was a chance to make industry-academia collaboration.

Data collection

This study adopted snowball sampling. First, the in-depth face-to-face interviews with KH's CEO/owner, and two shareholders were available. Through semi-structured interviews (Gubrium et al. 2012) with KH respondents, this study obtains information regarding competitors, difficulties and the similar practices SMEs adopt to get sustainability in the towing industry. Second, this study planned a series of telephone interviewees with six TMS' respondents: two assistant directors, and TMS' Planning Manager, Sales Manager, Marketing Manager, and Oil Manager. And information about ups and downs in the towing sector affected by the increasing price of oil, marketing opportunities, and sales and service innovations are mostly gathered from TMS informants; interview questions are like the content of exchange, which directs to what is traded or what binds the partners together. Last, this research made data confirmation through contacting with TMS' partners: one sales manager in a credit bank and one insurance commissioner in an insurance company. The researcher also conducted interviews with two owners in car maintenance centers and TANFB's contractor staff to learn the situation and approaches in the relationship with KH. Totally, this research made interviews on 14 subjects in KH's network structure. Interview guidelines are directed to learn (1) ways to maintain the relationship, (2) the benefits from the relationship and (3) cognitive or behavioral changes through network learning (Table 1).

Data analysis

This research applied NVIVO 8.0 software to organize open, axial, and selective coding as advanced by Corbin and Strauss (1990). First, by use of open coding, concepts related to network learning emerge; then, this study put similar concepts in the same dimension, and formed initial dimensions such as "the learning norms/policies embedded in the strategic alliance," "economic exchanges," "learning benefits from the network learning" and "learning opportunities in towing services." And axial coding came out with themes, such as learning processes, learning approach, and learning outcomes.

Table 1 List of interviews in the SME's learning networks

Learning Networks	Respondent	Quantity
KH	CEO/Owner	1
	Shareholders	2
Triumph Motor Service	Assistant Directors	2
	Planning Manager	1
	Sales Manager	1
	Marketing Manager	1
	Oil Manager	1
TANFB	Contractor Staff	1
One Credit Bank	Sales manager	1
One insurance company	Insurance Commissioner	1
Car Maintenance Centers	Owners	2

Secondly, through themes exploration, this study found that the pattern of connections between KH, TMS and TMS' related partners is hub-and-spoke alliance. This study is interested in the inequalities of control and power in the learning network. Then, following steps suggested in Creswell (1998, p57), this study explores if there is *casual conditions, strategies, context and intervening conditions* and the *consequences* in the themes emerging from coding process. Last, the final categories were contents of exchange, learning contexts (ways to influence and shape learning), learning approach, and benefits from learning outcomes. However, the qualitative content is rather subjective; triangular information is collected, including industry reports, company archival data and interviewees' comments on associated companies' network activities.

Results

The result shows a hub-and-spoke alliance portfolio configuration in which TMS operates at the center and is connected to SME partners, like KH (see Fig. 1).
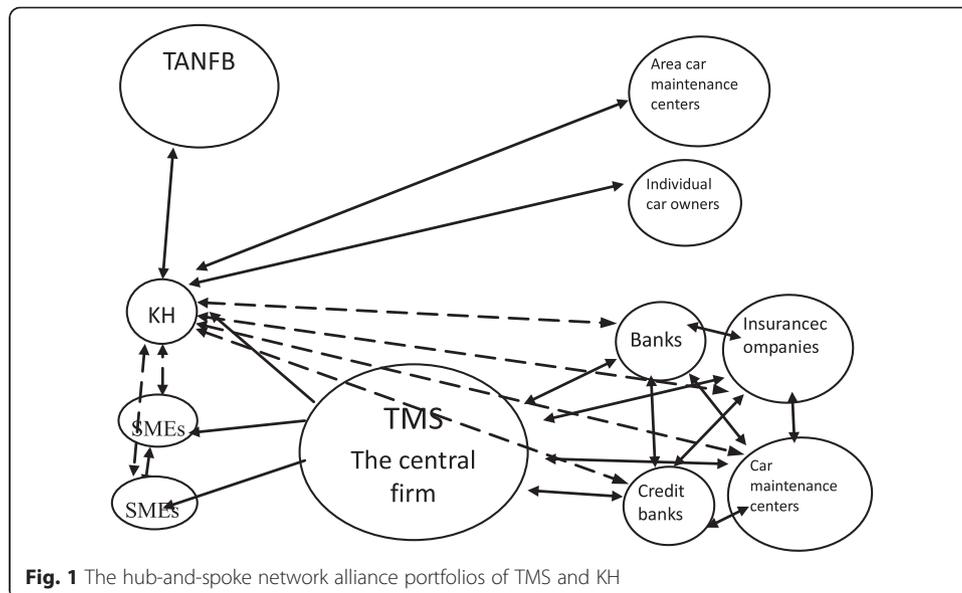

Fig. 1 The hub-and-spoke network alliance portfolios of TMS and KH

Hub-and-spoke alliance portfolios of TMS and KH

There are over 200 client companies making requests for car emergency service. And these requests are presented by dotting-line connections created by TMS which reaches credit banks or insurance companies to offer roadside help service to them. TMS makes contract with local towing SMEs to provide on-the-spot services. The complicated network relations are described as the following interview:

> "KH makes contract with the up-stream company, which is TMS. TMS also make contracts with credit card banks and when their clients confront car emergency, then banks would contact TMS, and the roadside assistance would be provided by TMS' contracted towing company which is the nearest to the clients' location of car emergency (KH's representative, in interview)"

Within one county, TMS makes contract with at least two local SMEs as partners. If there is an accident and one local company cannot arrive at the site within a specified period of time, TMS gives the other the opportunity to provide rescue services. Making service mistakes affects the future network relationship. There exists a placement of TMS' local partnership. Therefore, TMS has the power advantage which comes from its ability to put partners in competition for its attention and resources (Greve et al. 2014). Any TMS' contracted company is required to attend meetings, training courses during the period of partnership. TMS provides learning activities, which are pre-structured and oriented to the adequate performance of emergence services. The learning process is described by KH's CEO as this:

> "The standard process is like this: if there are ten car breakdowns, four to five cars are hit; KH's members go to the site to take pictures, draw scenes, and deal with connections; we are required to wait for the police's arrival, who will further deal with the legal process. And after the police finish the legal process, we start to drag cars. If you pass the exams, TMS will issue a license for this type of on-site personnel."

Learning ties between TMS and its towing members are rather asymmetric ties. TMS has the information advantage (Greve et al. 2014) that combines new knowledge from different partners to achieve breakthrough service innovation. Belonging to a lower position in the TMS' hierarchical network, KH learns from the leader and then performs accordingly. Table 2 displays the way in which KH learns and develops different levels of learning.

Adaptive learning approach

TMS' network learning promotes a norm of adaptive learning due to performance requirements. TMS provides KH with legitimacy to operate tow trucks for certain stretch of road. KH learns working norms and regulation that ensure standard performances of emergency service. TMS offers formal education, training and formally shared knowledge to partners to develop working routine behaviors. By adoption of the standard operation procedures of the emergency service, KH assumes a way of looking at the emergency situations that is widely shared within TMS' network. The

Table 2 Learning approaches of adaptive leaning and generative learning in network

Learning approach	KH Rationale	Illustrative quotes	TMS / Partner's rationale	Illustrative quotes
Adaptive learning	Working norms and regulation	"Of course, TMS gives many provisions, such as during the period of contract, KH cannot have any cases of customer reports, nor the drivers can drink during working hours, and they also needs to regularly attend meetings." (KH manager)	Conditions of the contract	"TMS' partner needs to have a limited company, their own towing truck, and to take part in education and training organized by the company." (TMS sales manager)
	Adoption of the network-level cognitive	"We signed up a contract with the upstream company, which is TMS. TMS has ties with Car Repair Centers. When customers in Car Repair Centers have problems with cars, they have to contact Car Repair Centers, which then contact TMS. TMS then finds a local towing company that is the nearest to the customers and can provide roadside assistance." (KH CEO)	Common network-level practices in the towing industry	"Property and casualty insurance towing means when the general public buys products in the insurance companies to have the product insurance, insurance companies will give customers preferential towing road rescue service. Actually it is TMS which arranges road assistance. And TMS obtains towing fee from insurance companies." (Insurance Specialist)
Generative learning	Learning changes to the network-level cognitive	"TMS has a new relationship with corporate groups; TMS is an oil agent for enterprises which have need for oil, such as Taiwan Taxi Group and TMS also provide them insurance and car maintenance service." (KH CEO)	Stimuli for new market	"Credit-card issuing banks have bargaining power because they hold a large scale of customers. Then, gross margin for TMS will be lowered. When oil price gets rising, the need for cars is decreasing and towing industry is shrinking too." (TMS marketing manager)
	Learning changes to car emergency services	"There are specific recommendations for change in emergency service, like assistance to defects in battery, water tank, and tires." (KH board member)	New concepts of roadside service	"Customers have higher and higher demand over car emergency services; the dominant theme within the towing industry is learning to improve towing service, through firms learning from TMS and other key customers." (TMS oil manager)

shared pattern of judgment over car accidents leads to common network-level practices in the towing industry.

Generative learning approach

The context of the towing industry enacts generative learning-the rising oil price and the decreasing need for cars. TMS informants mentioned *"the shrinking towing industry"* and *"higher and higher demand over emergency service"* as the key enabling factors that help them to question the current business model in network alliance. Due to low gross margin, TMS tries to find a new partnership with more corporate groups, that is, to develop more "spokes" to enlarge market share. New partners provide TMS the specific type of service knowledge, which TMS learns and uses to make breakthrough service innovations. In network learning, TMS as the hub is clear locus for learning leadership. If TMS considers the performance of emergency service has been inadequate, there will be specific recommendations for change, such as technological and market advances.

Table 3 shows characteristics of network learning; in particular, network learning contexts, approaches and outcomes are considered as dimensions of the network learning. In the context of learning in the hub-and-spoke alliance, due to the hub status, TMS and TANFB have the information and power advantages to influence learning direction and contents for their partners. And these advantages further facilitate the spokes to have adaptive learning. Adaptive learning is mostly related to the institutionalization of coordinated practices and the embedding of shared views. In this case study, TMS provides formal training on towing technology and has the power to set the norms of performance. On the other hand, generative learning is about purposive efforts to improve performance. This is found in learning outcomes in expanded forms, such as market share, market visibility and network identity. On the other hand, KH develops a trust relationship with car maintenance centers and individual clients. A car maintenance manager says *"any car accident is not necessarily assigned to a certain towing company; service relationships are maintained through senior managers' friendship with the boss of the towing company."* In the network, there is a mutual expectation regarding the quality of service and reasonable fees.

Discussion

Learning is purposive quest to retain and improve competitiveness, productivity, and innovativeness in uncertain technological and market circumstance. KH is exposed to a variety of external contacts which influence the breadth, depth, and speed of KH's learning. This study takes TMS as a focus for discussion, because TMS is the market leader in Taiwan's towing industry and builds up the most complex network.

First, TMS' connection broadens and deepens KH's market knowledge, thus providing chance for generative learning development in commercially utilizing the knowledge. In learning relationships, TMS has the resources of new market information for the network. The asymmetric learning relationship refers to unilateral learning policies; that is, TMS has power in deciding the direction of the learning, what members should learn and in what way they should learn it (Poell et al., 2000). Network members adopt a way of looking at the car emergency services. The adoption of judgment in dealing emergency services is organizational learning at a network-level cognitive structure.

Table 3 Characteristics of KH's learning networks

Company	Learning contexts (ways to influence and shape learning)	Learning approaches	Outcomes of learning	Contents of exchange
Triumph Motor Service (TMS)	The hub status: the information/power advantages	Adaptive learning Generative learning	Market share, Market visibility, legitimacy to operate tow trucks for certain stretch of road, network identity, or common values and rules about sharing procedure knowledge	Technological Economic
Taiwan Area National Freeway Bureau (TANFB)	The hub status: the information/power advantages	Adaptive learning Generative learning	Legitimacy to operate tow trucks for certain stretch of road	Economic Legal
Car Maintenance Centers	Trust relationship: communication	Adaptive learning	Enlarge the pool of customers	Economic Social
Individuals	Trust relationship: communication	Adaptive learning	Enlarge the pool of customers	Economic Social

TMS' network members can access explicit knowledge in meeting and training courses and acquire tacit knowledge while working together on practical problems. Network members can provide specific feedbacks to the performance of emergency service but eventually TMS has the power to make changes in network-level practices. In order to secure partnering with well-known TMS, network members commit to the learning policies and practices purposed by TMS. Just as a TMS' customer expressed, *TMS' large-scale towing slogan and marks can be seen on towing vehicles and uniforms and we customers can quickly distinguish the market segments a towing truck belongs*. TMS has a strong positive reputation and provides KH with prestige in the marketplace. Then, benefits from learning outcomes are economic benefits in market share, market opportunity, and market visibility.

Second, HK's asymmetric learning relationship with TMS is based upon theories of social exchange and resource interdependence (Skerlavaj and Dimovski, 2007), which facilitate KH to have resources for generative learning. According to Birdthistle (2006), SMEs prefer informal learning strategies, rather than formal strategy because SMEs lack of funds; Ndiege et al. (2012) in the same vein found that SMEs have no resources to develop human resources practices with most preferring to adopt a 'wait and see' approach to formal training. HK's network with TMS obtain chance to receive formal training including structured training, the curriculum with specific training objectives, and the establishment of evaluation criteria (Birdthistle, 2006). HK's formal training, such as classroom work, seminars, lectures, workshops and audio-visual presentations, offers systematic, technological type of innovation knowledge in the towing vehicles. Tsai (2007) stated that different organizational structure (family-owned and non-family own) may result in a specific type of organizational learning: family business was found to be better on organizational memory but weaker on immediate learning. This study found that KH confronts the similar difficulty in immediate learning. KH was weaker in obtaining new information of technology in the towing industry but a network with TMS gets access to the most advanced technology in the towing industry. Then, TMS provides the sources of generative learning.

Third, though acquiring generative learning development, the case of the SME gets a competitive advantage but chooses to stay small and to be a business owner. This type of network is the 'co-opetition' network that has prevailed in Taiwan since 1995 (Lin and Zhang, 2005). High labor costs and globalization have been prevailing in the stage of economic development in Taiwan in the late twentieth. Most SMEs in Taiwan are family businesses staffed by family members. Thus, the 'co-opetition' network presents a new avenue for SMEs to increase the performance and maintain a certain degree of autonomous at the same time (Lin and Chen, 2007). Network learning meets the psychological needs of the Chinese people to be a business owner and at the same time get the competitive advantages (Lin and Zhang, 2005).

Conclusion and limitation and future directions

The paper offers a network perspective on organizational learning for SMEs in Taiwan's towing industry. Network learning involves learning norms and benefits of learning outcomes. Adaptive learning enacts the norms of networks and ensures the development of network capability. Adaptive learning facilitates SMEs to be more proactive in exploiting opportunities in the environments. On the other hand, generative learning

demands examination and modification of the assumptions in the policies and norms, and most SMEs cannot afford the cost of generative learning because generative learning is time-consuming and calls for change in a large scale. Then, generative learning can be acquired through communication channels and resources provided by the central firm. This study has contributions to the inter-organizational learning literature. SMEs can accumulate absorptive capacity through mechanisms in formal trainings and network interactions in an asymmetric learning relationship. Network learning also provides mechanisms through which inter-firm interactions lead SMEs to have competitive advantages.

This study has several limitations that should be acknowledged. The first limitation is that major data comes from interviews; some confidential financial data cannot be attained. As always, this exploratory research can only make inference with 14 interviews, which is a small number within a huge network structure. Second, interviews cannot avoid subjective views of interpretations and it may be overcome, if this study has long-term observation. However, there is still a lot of future work ahead. To generalize the findings, future research will need to make long-term observation of the business and related industry to examine the impact of organizational culture, leadership style and industry, as the pace and depth of learning may be diverse depending on the nature of the industry and leadership styles.

References
Alvarez, S. A., & Busenitz, L. W. (2001). The entrepreneurship of resource-based theory. *Journal of Management, 27*(6), 755–775.
Antonacopoulou, E., & Chiva, R. (2007). The social complexity of organisational learning: the dynamics of learning and organizing. *Management Learning, 38*, 277–295.
Anussornnitisarn, P., Sanpanich, S., Phusavat, K., Kess, P., & Muhos, M. (2010). Sustaining organizational innovation and learning through external knowledge. *International Journal of Innovation and Learning, 7*(1), 85–99.
Argyris, C. (1976). Single-loop and double-loop models in research on decision making. *Administrative Science Quarterly, 21*(3), 363–375.
Argyris, C. (1994). Good communication that blocks learning. *Harvard Business Review, 72*(4), 77–85.
Argyris, C., & Schon, D. A. (1978). *Organizational Learning. A theory of action perspective*. Reading, MA: Addison-Wesley.
Birdthistle, N. (2006). Training and learning strategies of family businesses: an Irish case. *Journal of European Industrial Training, 30*(7), 550–568.
Business Weekly. (2013). *Towing Industry Leader-Telephone lines pull in Three Billion NT Dollars* (Vol. 1329, pp. 98–113). Taiwan (in Chinese): Business Weekly Group.
Chell, E., & Baines, S. (2000). Networking, entrepreneurship and micro business behavior. *Entrepreneurship and Regional Development, 12*, 195–215.
Cohen, W. M., & Levinthal, D. (1990). Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly, 35*(1), 128–152.
Corbin, J., & Strauss, A. (1990). Grounded theory research: procedures, canons, and evaluative criteria. *Qualitative Sociology, 13*(1), 3–21.
Creswell, J. W. (1998). *Qualitative Inquiry and Research Design: Choosing among Five Traditions*. Thousands Oaks, CA: Sage Publication.
Cyert, R. M., & March, J. G. (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.
Greve, H., Rowley, T., & Shipilov, A. (2014). *Network Advantage*. San Francisco: Jossey-Bass.
Gubrium, J., Holsten, J., Marvasti, A., & McKinney, K. (2012). *The SAGE handbook of interview research: The complexity of the craft*. London: Sage.
Gulati, R. (1998). Alliances and networks. *Strategic Management Journal, 19*(4), 293–317.
Higgins, D., Mirza, M., & Drozynska, A. (2013). Power, politics & learning: a social enactment of the SME owner/manager. *Journal of Small Business and Enterprise Development, 20*(3), 470–483.
Hill, R., & Stewart, J. (2000). Human resource development in small organizations. *Journal of European Industrial Training, 24*, 105–117.
Jasra, J. M., Khan, M. A., Hunjra, A. I., Rehman, R. A. U., & Azam, R.-I. (2011). Determinants of business success of small and medium enterprises. *International Journal of Business and Social Science, 2*(20), 274–280.

Jerez-Gomez, P., Cespedes-Lorente, J., & Valle-Cabrera, J. (2005). Organizational learning capability: a proposal for measurement. *Journal of Business Research, 56*(6), 715–725. http://dx.doi.org/10.1016/j.jbusres.2003.11.002.

Kitching, J. (2007). Regulating employment relations through workplace learning: a study of small employers. *Human Resource Management Journal, 17*, 42–57.

Lin, C. Y.-Y., & Chen, Y.-C. (2007). Does innovation lead to performance? An empirical study of SMEs in Taiwan?". *Management Research News, 30*(2), 115–132.

Lin, C., & Zhang, J. (2005). Changing structures of SME networks: lessons from the publishing industry in Taiwan. *Long Range Planning, 38*(2), 145–162.

Muscio, A. (2007). The impact of absorptive capacity on SMEs' collaboration. *Economics of Innovation and New Technology, 16*(8), 653–668.

Mustafa Kamal, E. (2013). Absorptive capacity in construction SMEs: a literature synthesis. *World Applied Sciences Journal, 21*(8), 1122–1127.

Ndiege, J. R., Herselman, M. E., & Flowerday, S. V. (2012). Absorptive capacity: relevancy for large and small enterprise. *SA Journal of Information Management, 14*(1), 1–9.

Nolan, C., & Garavan, T. (2012). *Lost in translation? Critiquing the HRD discourse in the small firm, working paper*. Limerick: University of Limerick.

Poell, R. F., Chivers, G. E., Van der Krogt, F. J., & Wildermeersch, D. A. (2000). Learning network theory – Organizing the dynamic relationships between learning and work. *Management Learning, 31*, 25–49.

Saunders, M. N. K., Gray, D. E., & Goregaokar, H. (2014). SME innovation and learning: the role of networks and crisis events. *European Journal of Training and Development, 38*(1/2), 136–149.

Senge, P. (1990). *Fifth Discipline*. NewYork: Doubleday.

Skerlavaj, M., & Dimovski, V. (2007). Towards network perspective of intra-organizational learning: bridging the gap between acquisition and participation perspective. *Interdisciplinary Journal of Information, Knowledge, and Management, 2*, 43–58.

Sören Kock, M. B. (2000). Coopetition in business networks-to cooperate and compete simultaneously. *Industrial Marketing Management, 29*, 411–426.

Tsai, W. (2007). *Learning in small and medium enterprises (SMEs)-taking Taiwanese SMEs as examples, Proceedings of OLKC* (pp. 966–979).

Vickerstaff, S., & Parker, K. T. (1995). Helping small firms: the contribution of TECs and LECs. *International Small Business Journal, 16*, 56–72.

Walsh, J. P., & Ungson, G. R. (1991). Organizational memory. *Academy of Management Review, 16*(1), 57–91.

White Paper Book: Small and Medium Enterprises in Taiwan (2014). Taipei: Taiwan Medium and Small Business Administration, Ministry of Economic Affairs, Taiwan (in Chinese).

Wolfe, D. A., & Gertler, M. (2002). Innovation and social learning: an introduction'. In M. Gertler & D. A. Wolfe (Eds.), *Innovation and Social Learning: Institutional Adaptation in an Era of Technological Change*. Basingstoke: Palgrave Macmillan.

Wolff, J. A., Pett, T. L., & Ring, J. K. (2014). Small firm growth as a function of both learning orientation and entrepreneurial orientation: an empirical analysis. *International Journal of Entrepreneurial Behavior & Research, 21*(5), 709–730.

Yli-Renko, H., Autio, E., & Sapienza, H. J. (2001). Social capital, knowledge acquisition and knowledge exploitation in young technology-based firms. *Strategic Management Journal, 22*(6–7), 587–614.