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以資源基礎架構分析中小企業科技化合作模式
A Resource-based Framework for Analyzing IT-enabled
Collaboration in Small and Medium Enterprises

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摘要

中小企業一向是經濟成長的主力，然而受限其資源的短缺，往往無法提供顧客更好的商品或服務。雖然文獻指出中小企業可以透過資訊科技與夥伴和顧客合作來克服它先天的弱勢並提供更好的服務，但仍有許多模糊未解的問題。例如，哪一種中小企業較願意導入以資訊科技為基礎的協同合作模式 (IT-enabled Collaboration)？而這樣的合作模式是否能真正的提升他們的績效表現呢？本研究以資源基礎理論和服務導向邏輯理論(service-dominant logic)為基礎，將資源分為 operant 資源、operand 資源、資源互補性及資源相似性，試圖找出在何種資源模式下，中小企業會偏向使用以資訊科技為基礎的協同合作模式。研究方法採用個案研究，並以宜蘭縣枕頭山休閒農業區的八家中小型業者為目標進行訪談。在資料蒐集和分析之後，本研究發現 operand 資源與 operant 資源皆會正向的影響到中小企業對科技化合作的參與，其中又以 operant 資源的影響為更大。此外，從研究中也驗證了科技化合作能促成中小企業績效的提升。根據研究結果，本研究將 operant 資源視為影響中小企業導入科技化合作模式進而達成績效提升的主要關鍵資源。

關鍵詞：資訊科技、協同合作、資源基礎理論、服務導向邏輯理論、中小企業

A Resource-based Framework for Analyzing IT-enabled Collaboration in Small and Medium Enterprises

ABSTRACT

Small and medium sized enterprises (SMEs) are the main force to economic growth, but they usually restricted by resource shortage when they want to upgrade goods or services. Past literature has indicated collaboration with partners and customers through information technology (IT) may overcome their weakness and serve better. However, there still are blurs, like what kind of SMEs are more likely to engage IT-enabled collaboration? Will IT-enabled collaboration really enhance SMEs performance? Our research framework based on resource-based view and service-dominant logic categorizing SME resources into (1) operand resources, (2) operant resources, (3) resource complementarity and (4) resource similarity. We attempt to find out what key resources in SMEs are related to the usage of IT-enabled collaboration and the contributions to SME performance. We conduct case study with 8 SMEs in Mt. Pillow Leisure Agriculture Area. After data collection and analysis, we figure out that both operand and operant resources have positive impact on IT-enabled collaboration; furthermore, operant resources contribute more for SMEs to communicate and coordinate with each other and customers. In addition, from our research, we demonstrate that IT-enabled collaboration helps SMEs to perform better. Therefore, we suggest operant resources as important resources for SMEs engaging in IT-enabled collaboration and consequently enhancing their performance.

Keywords: IT-enabled collaboration, resource-based view, service-dominant logic, small and medium sized enterprises

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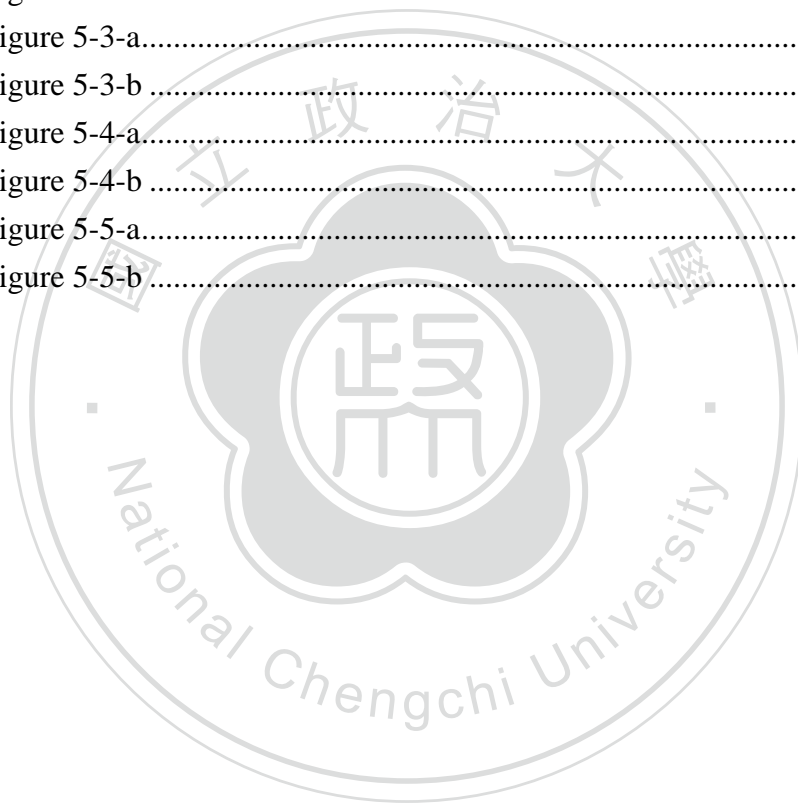
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CHAPTER 1: INTRODUCTION

1.1 Research Motivation

Small- and medium-sized enterprises (SMEs) play an important role in world economic growth by increasing employment opportunities and consequently generating income (Tambunan, 2000; Madrid-Guijarro et al., 2009). For example, according to the Organization for Economic Co-operation and Development (OECD), on average, SMEs represent a major share of all firms (99%), employment (approximately two-thirds) and value added (over one half) within participating areas (OECD, 2010).

However, the performance of SMEs is usually limited by their poor resources, such as low financial budgets, few qualified employees, barriers of managerial and technological competencies, and lack of insight into long-term strategies (OECD, 2010). For these reasons, researchers and governments have widely discussed how SMEs can become more sustainable and develop competitive advantages.

Many studies demonstrate that forming a strategic alliance is an effective way for SMEs to ameliorate performance (Davenport, 2005; Dollinger and Golden, 1992; Gomes-Casseres, 1997; OECD, 2010). For instance, Davenport (2005) claimed that the collaboration of SMEs supports SME growth through knowledge acquisition; Dollinger and Golden (1992) pointed out that SMEs may be able to enhance performance by pooling resources with other firms. Cooperating and forming partnerships has become a common strategy in the tourism sector, for example (Reid et al., 2008). Through collaborations, SMEs can diversify their service portfolios to fit a variety of customers' expectations.

As information technology (IT) is flourishing in the 2000s, it often enables collaborations among enterprises (Skipper et al., 2008). IT is the tool that makes coordination more feasible (Kumar and Dissel, 1996), as it effectively facilitates the sharing of knowledge between partners (Füller et al., 2009). With IT, SMEs have radically changed; for example, they are able to directly connect to and collaborate with potential customers, which provide them with opportunities to compete with large firms (OECD, 2008).

Although IT-enabled collaboration is important to SMEs, most of them still fail to collaborate. The resource-based view (RBV) may provide an explanation for this phenomenon. According to resource-based theory, a firm gains strategic advantages

from resources that are rare, valuable, inimitable, and not easily substituted (Barney, 1991). Therefore, SMEs must use their modest resources in effective and innovative ways to provide competitive services. Many researchers have tried to categorize resources to analyze them (Grant, 1991; Hall, 1992; Srivastava et al., 2001). With a resource-based view that adopts service-dominant (S-D) logic, resources can be classified as either operand or operant (Vargo and Lusch, 2004a).

In summary, we recognized that collaborations among SMEs are essential, and SMEs will benefit when they use IT for these activities. Then, we briefly explored resource-based theory to explain the foundation on which SMEs can build competitive advantages. However, there are still many interesting and valuable questions that have remained unanswered in the literature. What resources does an SME need to significantly benefit from IT-enabled collaboration? Does an SME's decision to employ IT-enabled collaboration directly impact its performance? These questions led to the development of our research objectives.

1.2 Research Objectives and Questions

The overall goal of this research was to build a resource-based framework with which to analyze SMEs engaged in IT-enabled collaboration. We sought to examine the resources of SMEs, understand SMEs' use of IT to form alliances, and evaluate the performances that result from these alliances. In the process, we proposed to answer the following questions:

1. What important resources must SMEs have to participate in and benefit from IT-enabled collaboration?
2. After an SME participates in IT-enabled collaboration, does its performance improve enough to recommend that it collaborate with other SMEs and customers?

In answering these questions, we sought to construct an effective framework to which SMEs can refer. The hope is that SMEs will be able to establish better strategies when they learn which key resources are significant to IT-enabled collaboration and performance.

CHAPTER 2: LITERATURE REVIEW

In this study, we used resource-based theory to explore how SMEs can enhance their performance through IT-enabled collaboration. Before we propose our own model, we will review related literature. In this chapter, we will first focus on studies regarding IT-enabled collaboration and then turn to research on the resource-based view.

2.1 IT-enabled Collaboration

A firm can collaborate with two distinctly separate groups: partners and customers. We will illustrate the importance of IT-enabled collaboration in terms of an SME's interactions with each of these groups.

2.1.1 Collaborating with partners

During the past few decades, alliances have become one of the most important organizational entities. Collaboration with partners, also known as an "alliance," is defined as any independently initiated inter-firm link that involves exchange, sharing or co-development (Gulati, 1995a; Kale et al., 2002).

The motivations for a firm to form an alliance include, for example, being able to solve market failure problems caused by resource specificity, strengthening the firm's competitive position, and absorbing extra knowledge from partners (Williamson, 1985; Porter and Fuller, 1986; Kogut, 1988). By forming a strategic alliance, a firm can increase its product complexity and variety and supplement its core competencies by allying with other providers of complementary competencies to satisfy customers (McIvor et al., 2003). An alliance could influence not only a firm's capabilities, but also others' perceptions of its capabilities (Baum et al., 2000). Deciding on a partner is complicated and depends on the size of each SME, resource constraints, strategic position, social structure, level of trust, and prior experiences with alliances (Powell et al., 1996; Eisenhardt and Schoonhoven, 1996; Gulati, 1995a; Gulati, 1995b).

Because SMEs have limited resources, they are in particular jeopardy in environments that are becoming increasingly complex and turbulent. Collaborating with partners in their sector is especially important to SMEs overcoming their resource shortages and increasing their viability in difficult economic times (Hoffmann and Schlosser, 2001). Fernández and Nieto (2005) also indicated that SMEs can make alliances to obtain necessary resources from other firms through the

development of stable relationships. In addition, through collaborations, SMEs are able to build innovative capability and technological competence (Jarratt, 1998; Forrest, 1990) and overcome weaknesses such as a poor financial budget or a lower level of expertise in production, marketing and management. By pooling partners' resources and acquiring knowledge from others (Davenport, 2005; Dollinger and Golden, 1992), SMEs can enhance their performance.

As new technology continues to emerge, IT is the primary tool with which to facilitate communication and collaboration (Olesen and Myers, 1999). IT-enabled collaboration is a technology-based, collaborative system that provides opportunities for both local and geographically dispersed groups to communicate (Hossain and Wigand, 2006). IT is widely used to enable collaboration with partners, especially in supply chain management (Chae et al., 2005; Subramani, 2004; Li, 2006; Paulraj and Chen, 2007). Bakos and Brynjolfsson (1993) noted that search and coordination costs decline due to the use of IT. Bensaou (1997) identified IT as a mechanism that reduces uncertainty because IT can be used to increase inter-organizational information processing capabilities and thereby enhance cooperation with product suppliers with higher technological unpredictability. IT also enables and mediates the sharing of knowledge, the transcending of legal enterprise boundaries, and the providing of information in real time (Paulraj and Chen, 2007; Sexton et al., 2003). Therefore, it helps partners to develop trust (Scott, 2000; Hossain and Wigand, 2006) and establish inter-firm communications (Stump and Sriram, 1997), and it reinforces and stabilizes existing inter-organizational structures and arrangements (Chae et al., 2005).

In summary, SMEs benefit from forming alliances with partners to conquer disadvantages, and IT enables this cooperation and makes it more effective and efficient. Therefore, IT plays an important role in the collaboration among partners in SME sectors.

2.1.2 Collaborating with customers

According to service-dominant logic, the customer is a co-producer of service who must interact with either a service or tangible goods over some time period that extends beyond the transaction (Vargo and Lusch, 2004a). Thus, collaboration with customers - or, in other words, value co-creation cannot be ignored in the context of a firm's strategy. Value co-creation refers to innovations jointly undertaken by a company and its current and potential consumers (West, 2010). In contrast with traditional marketing approaches, in which value is created for average consumers, the primary purpose of value co-creation is to create unique and specific value for

individual consumers (Bhalla, 2010).

An enhanced value offering only works when the customer appreciates it and value can be gained. SMEs are not typically the central players in an industry, so it might be difficult for them to offer integrated solutions. However, co-evolving with customers and emphasizing fitness-for-use could help (Matthyssens et al., 2009). Philipsen et al. (2007) examined the relationships of small- and medium-sized suppliers with customers. They identified one group of suppliers as “partnership-suppliers,” or suppliers who cooperate closely with customers through regular meetings and co-working to deliver customer-adapted products and services. Consider InercityCom, for example; its relationships with customers have positively contributed to its development of technological capabilities and both the broadening of the scope and strengthening of the focus of its product portfolio. Although coordinating with customers is highly resource demanding and time consuming, the benefits are highly valued.

According to Prahalad and Ramaswamy (2004), the power of co-valuation lies in connected, informed, and active customers who have a global view and participate in information access, networking and experimentation with products. These activities are somewhat associated with IT; for instance, customers can use the Internet to experiment with and co-develop products.

IT enables new forms of producer-consumer collaboration in new product development processes (Füller et al., 2009). For example, a platform for collaborative design allows customers to effectively share their knowledge with producers, making them feel that they are autonomously contributing and that their input will be seriously considered. IT can integrate physical and virtual channels to co-create value for customers. Oh and Teo (2010) stated that the service-delivery system in retail can be adapted for use in IT to improve information access, order fulfillment and customer service, which will generate high customer value. The incorporation of technologies can greatly customize service offerings through the development of new types of services and new ways to provide services (Sheehan, 2006; Froehle et al., 2000).

Due to the limited size of SMEs, it is difficult for them to compete against large firms that have large-scale economies and can reduce prices. An alternative method for SMEs to establish advantages is to provide an excellent experience for customers (OECD, 2008). Although it requires time and resources to connect with customers, IT can help make communication faster and accurate. As it provides a channel for information sharing with customers, IT-enabled collaboration is becoming

increasingly important to SMEs.

Although IT-enabled collaboration is important to all SMEs, the execution gaps in SMEs that conduct IT-enabled collaboration vary. How does one SME cooperate more effectively than another? The emphasis of the resource-based view on a firm's resources and capabilities may provide an explanation.

2.2 Resource-based Theory

In this section, we will review traditional and service-oriented RBV to identify trends in service and summarize our understanding after reviewing literatures.

2.2.1 Traditional view

According to the traditional view of resource-based theory, a firm's competitive advantages are a result of its specific resources and capabilities (Grant, 1991; Barney 1991). However, there is some disagreement regarding the roles of resources and capabilities in a firm. Barney (1991) combined the categories of "capabilities" and "resources" (along with assets, processes, and information), but other researchers (Grant, 1991; Hall, 1992) separated these categories so that resources are defined as the inputs and capabilities are the performances of tasks or activities. Despite the above debate, researchers agree that a firm can evaluate its potential competitive advantages by identifying internal resources and capabilities and formulating a suitable strategy to reduce resource gaps and increase profits (Grant, 1991).

Nevertheless, identifying and appraising a firm's resources is a major obstacle. To see the full picture of firm resources, researchers have tried to categorize them. According to Barney (1991) and Grant (1991), resources can be sorted into six categories: financial, physical, human, technological, organizational, and reputation. When both tangible and intangible resources are rare, valuable, durable, irreplaceable, and difficult to imitate or substitute, the firm can generate a sustained competitive advantage.

Although resources were categorized in previous studies, it remained unclear how these categorizations were related to Barney's (1991) criteria for resources, namely, that they should be valuable, rare, and difficult to imitate and substitute. Therefore, Miller and Shamsie (1996) revisited one of the criteria, namely, that the resource should be difficult to imitate, to develop the concepts of property-based and knowledge-based resources. Property-based resources are specific and fixed; they protect a firm from competition by creating and guarding assets that are not available to rivals. Knowledge-based resources are less specific and more flexible. Knowledge

barriers that are subtle and hard for competitors to understand protect these resources from imitation.

Moreover, Hall (1992, 1993) claimed that intangible resources play a major role in the strategic management process. He defined four types of intangible resources: assets within the legal context (contracts, licenses, and intellectual property), assets outside of the legal context (reputation, networks, and databases), know-how (of employees, suppliers, and distributors), and organizational culture (perception of quality and service). Intangible resources are the feedstock of capability differentials, which create a firm's sustainable competitive advantages. Therefore, after the key resources of a business are identified, they need to be explored, protected and developed.

Srivastava et al. (2001) applied the RBV to marketing to accurately project, perceive and translate customer value. They proposed a framework in which market-based assets are leveraged via market-facing processes to deliver superior customer value, which contributes to competitive advantages and financial performance. Market-based assets, which are identified as both marketing-specific and RBV attributes, principally consist of two related types: relational and intellectual. Relational market-based assets are external relationships with channels, customers, networks, and ecosystems. Intellectual market-based assets are internal knowledge that a firm possesses regarding the competitive environment.

When using RBV in a strategic alliance, the alignment between inter-partner resources indicates how the alliance affects collective strengths or conflicts (Das and Teng, 2000). Das and Teng (2000) defined resource complementarity with two conditions: the resources have to be dissimilar and used to perform effective service. The issue of resource complementarity is widely discussed in the context of alliances. For instant, Hamel et al. (1989) suggested that partners can complement each other's weaknesses by realizing when their resources are complementary and using them to achieve mutual gains. In addition, Teece (1986) indicated that when imitation is easy, the owner of complementary assets may accrue profits. Additionally, complementary resources present opportunities for the enhancement of learning and the development of capabilities (Harrison et al., 2001).

Past literature showed not only that potential partner firms' resource complementarity contributes to partnerships but also that firms seriously consider similarity of resource statuses before forming an alliance and evaluating how the alliance performs. Resource similarity is defined as the degree to which two partner firms can contribute comparable resources, in terms of both type and amount, to the

alliance (Chen, 1996). The similarity is high if two partners in an alliance contribute comparable quantities of similar types of resources. Despite Chen's (1996) focus on the similarity of resource content, Chung et al. (2000) emphasized the similarity of resources "status", that is, firms will consider the status of potential partners when forming an alliance and are likely to ally with firms of similar status (Podonly, 1994). Chung et al. (2000) argued that firms of a similar status ally with each other because of the signaling role of social interaction and because it is easier to evaluate, communicate and coordinate inter-firm activities, as well as to increase the levels of fairness and commitment in sharing both the costs and benefits of an alliance, in a similar competitive environment.

2.2.2 Service-oriented view

After Industrial Revolution, marketing was built on a goods-centered, manufacturing-based economic exchange model, which is known as goods-dominant (G-D) logic (Vargo and Lusch, 2004a; 2004b). G-D logic focuses on tangible resources, embedded value, and transactions. However, in the past few decades, a new service market has emerged. Distinguishing services from goods, service characteristics have been identified as intangibility, inseparability, heterogeneity and perishability (Vargo and Lusch, 2004b). Thus, the dominant logic became service-centered, called "service-dominant (S-D) logic," which is customer-centric and market-driven, and focused on intangible resources, co-creation of value, and relationships (Vargo and Lusch, 2004a).

Service was defined as the application of resources for the benefit of another (Spohrer et al., 2008). When RBV is approached from an S-D perspective, it considers the strategic value of a firm's skills, knowledge and cultural competency (Arnould, 2008). To more accurately understand the relationship between resources and the service-centered view, Vargo and Lusch (2004a) extended usage of operand and operant resources to fit G-D and S-D logic. Operand resources are the resources with which an operation or act is performed to produce effects, and operant resources are employed to act on operand resources and/or other operant resources (Constantin and Lusch, 1994). The former resource type is considered primary according to G-D logic, and the latter is primary according to S-D logic (Vargo and Lusch, 2004a).

According to Madhavaram and Hunt (2008), operand resources are typically physical (e.g., plants and equipment), financial (e.g., cash resources and access to financial markets), and legal (e.g., trademarks and licenses), while operant resources are typically human (e.g., individual employees' skills and knowledge), organizational (e.g., controls, routines, cultures, and competences), informational (e.g., knowledge of

market segments, competitors, and technology), and relational (e.g., relationships with competitors, suppliers, and customers).

2.2.3 Summary

An overview of RBV (see Table 2-1) confirmed the importance of resources to formulating strategies and developing competitive advantages. We then introduced a new resource construct to apply to our research object; namely, we combined operand resources (including financial, physical, and legal/contract resources) and operant resources (including technological, human, organizational, informational, and relational resources), joining resource complementarity and similarity to measure the form of strategic alliance.

Author	Type of resources	Definition/Example
Barney (1991)	Physical capital	Physical technology, plant and equipment, geographic location, and raw materials
	Human capital	Training, experience, judgment, intelligence, relationships, and the insight of individual managers and workers
	Organizational capital	Formal reporting structure, formal and informal planning, controlling and coordinating systems.
Grant(1991)	Financial	Financial balance sheet
	Physical	Plant and machinery
	Human	People, employee skills
	Technological	Process technology, manufacturing capability
	Reputation	Brand reputation
	Organizational	Organizational routines
Hall (1992)	Intangible assets within a legal context	Trademarks, Patents, Copyright, Registered designs
	Intangible assets without a legal context	Information in the public domain, Reputation, Organizational & personal networks
	Know-how	Know-how of employee, supplier, distributor
	Organizational culture	Perception of quality standards, perception of customer service, ability to manage change, ability to innovate, team working ability
Constantin and Lusch (1994)	Operand resource	The resources on which an operation or an act is performed to produce an effect

	Operant resource	The resources are employed to act on operand resources and/or other operant resources.
Miller and Shamsie (1996)	Property-based	Legal properties owned by firms
	Knowledge-based	A firm's intangible know-how and skills
Srivastava et al. (2001)	Relational	Relationships with external stakeholder
	Intellectual	The type of knowledge a firm processes in its competitive environment
Madhavaram and Hunt (2008)	Financial	Cash, access to financial market
	Physical	Plant, equip
	Legal	Trademarks, licenses
	Human	The skills and knowledge of individual employees
	Organizational	Controls, routines, culture, competences
	Informational	Knowledge about market segment, competitor, technology
	Relational	Relationships with competitor, supplier, customer

Table 2-1 Resource Categories in RBV

CHAPTER 3: RESEARCH FRAMEWORK

We developed our research framework, as shown below (see Figure 3-1), according to the existing literature regarding resource-based theory and IT-enabled collaboration. In this research framework, we attempt to examine the relationship between SMEs' resources, IT-enabled collaboration, and firm performance and to answer the following two questions: (1) what type of SME resources will contribute to IT-enabled collaboration, and (2) will SMEs grow through IT-enabled collaboration?

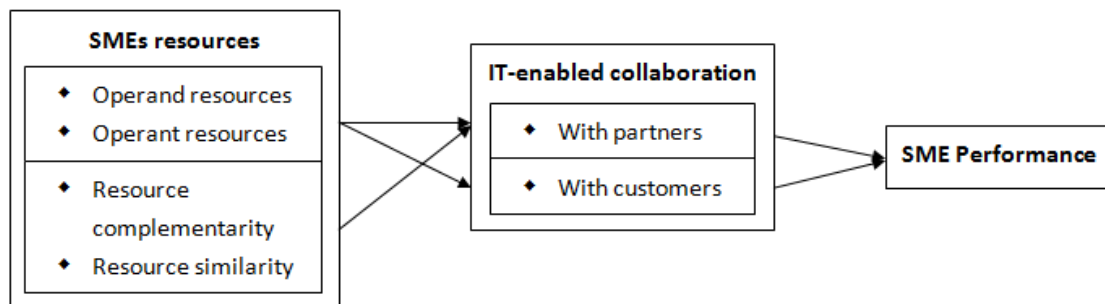


Figure 3-1 Research Framework

Methods of measuring firm performance have been widely discussed, and numerous methods have been proposed. In Dess and Robinson's research (1984), two measures of economic performance were used: after-tax return on total assets and growth in sales. The former is commonly viewed as the measure of a firm's efficiency with regard to profitable use of total assets, and the latter reflects how well a firm relates to market environments. In addition, Youndt et al. (1996) proposed multiple dimensions of operational performance in terms of product quality, employee morale and productivity, on-time delivery, inventory management, equipment utilization, production lead time, and scrap minimization. Furthermore, Reinartz et al. (2004) investigated the organizational practice of implementing CRM processes through relationship initiation, maintenance, and termination. Measures of firm performance can be divided into three parts: financial, operational and relational, and these criteria will be used in the following analysis to judge the performance of SMEs.

We propose four items in the RBV sector with which to evaluate SMEs' resources: (1) operand resources, (2) operant resources, (3) resource complementarity and (4) resource similarity. In addition, we will evaluate IT-enabled collaboration with (1) partners and (2) customers. We will discuss in detail each construct and hypothesis in the following sections.

3.1 SME Resources

3.1.1 Operand resources

Operand resources are identified as the resources with which an operation or act is performed to produce effects. They typically include physical, financial and legal resources (Madhavaram and Hunt, 2008), such as cash, plants, equipment, trademarks, and licenses.

To implement IT-enabled collaboration, SMEs should have not only aspirations to collaborate with partners and customers but also IT support. When SMEs have rich financial resources, they can conduct business with no financial worries; therefore, they can use excess resources to build up IT infrastructures. SMEs with superior physical resources may have a greater opportunity to purchase, for example, computers and Internet access. Accordingly, when SMEs have more operand resources, there are more possibilities for them to develop IT-enabled collaborations either with partners or customers. Thus, our hypotheses were formed as follows:

H1a. SMEs with a greater amount of operand resources are able to participate in better IT-enabled collaborations with partners.

H1b. SMEs with a greater amount of operand resources are able to participate in better IT-enabled collaborations with customers.

3.1.2 Operant resources

As discussed in the previous chapter, operant resources are employed to act on operand resources and/or other operant resources (Constantin and Lusch, 1994). Based on the work of Madhavaram and Hunt (2008) and RBV theory, we propose five types of operant resources: technological, human, organizational, informational, and relational. Relational resources are firms' relationships with external stakeholders such as competitors, suppliers and customers.

The attitude of SMEs toward collaboration is especially important to IT-enabled collaboration. If SMEs have better relationships (relational resources) and know more (informational resources) about partners and customers, they are more likely to cooperate. In addition, when SMEs have IT skills (technological resources) and are open to new knowledge (informational resources), it is much easier to introduce new IT platforms to assist collaboration. Consequently, the second set of hypotheses is as follows:

H2a. SMEs with a greater amount of operant resources are able to participate in

better IT-enabled collaborations with partners.

H2b. SMEs with a greater amount of operant resources are able to participate in better IT-enabled collaborations with customers.

According to S-D logic, service is the application of specialized operant resources (e.g., knowledge and skills) through the use of tools and distribution mechanisms (e.g., operand resources) to benefit an entity (Chen et al., 2009). Madhavaram and Hunt (2008) suggested that operant resources are higher on the hierarchy of resources than operand resources and that operant resources are more powerful in helping a firm to achieve a competitive advantage. Moreover, operant resources, which include relational and technological resources, are more directly related to partnership and IT capabilities, which are the two elements of IT-enabled collaboration. Therefore, we hypothesize that:

H3. Operant resources contribute to IT-enabled collaborations more than operand resources.

3.1.3 Resource complementarity

According to Faems et al. (2005), partner collaboration is defined as an interaction process whereby a firm exchanges complementary assets with external partners. Generally, firms are forced to cooperate because they often do not have all of the necessary resources internally. Firms tend to collaborate with those who have complementary resources and capabilities (Tether, 2002). Thus, we expect that when SMEs and their potential partners have complementary resources, they are more likely to collaborate with each other through IT platforms. Our hypothesis is as follows:

H4. SMEs with complementary resources are more likely to engage in IT-enabled collaborations with each other.

3.1.4 Resource similarity

Resource similarity is viewed as the degree to which two partnering firms can contribute resources that are comparable in both type and amount (Chen, 1996). In our research, we focus on the status of firms to evaluate resource similarity. Podolny (1994) claimed that when firms seek partners to form an alliance, they are likely to ally with firms of similar status. According to Lorange and Roos (1993), when firms compete with each other on the basis of their status, firms of similar status will be in a similar competitive environment and have similar operational systems and practices, which will lead to the more effective cooperation of partner firms. In addition, a firm tends to seek partners with a similar status because doing so may increase fairness and

the commitment of all parties to share costs and benefits. If the partner status is dissimilar, then the alliance is unequal. The partner of higher status may not satisfy the expectations of the firm of lower status, and the latter may not contribute enough resources to make the alliance mutually beneficial. These potential conflicts make alliances between dissimilar firms less effective (Chung et al., 2000). Accordingly, we propose that when potential partners have similar resource statuses, an SME is more likely to collaborate with them through IT platforms. Specifically, the hypothesis is as follows:

H5. SMEs with similar resource statuses are more likely to engage in an IT-enabled collaboration with each other.

3.2 IT-enabled Collaboration

3.2.1 Collaborating with partners

According to our literature review in the last chapter, collaboration with partners is defined as any independent inter-firm link that involves exchange, sharing or co-development (Gulati, 1995a; Kale et al., 2002). Because SMEs are short of resources, they can form alliances to obtain necessary resources and capabilities (Fernández and Nieto, 2005). Moreover, IT makes this coordination more feasible (Kumar and Dissel, 1996).

Through collaboration with partners, firms not only earn financial profits, but they also make nonfinancial improvements such as better customer service, faster speed to market, and better utilization of resources, all of which are incentives to increase collaboration (Smith et al., 2007). Furthermore, IT-enabled collaboration lowers the search and coordination costs associated with the formation of a partnership (Bakos and Brynjolfsson, 1993) and provides an intermediary platform for partners to share knowledge, provide timely information, and transcend the boundaries of firms (Paulraj and Chen, 2007; Sexton et al., 2003). Consequently, we developed the following hypothesis:

H6. SMEs that engage in more IT-enabled collaboration with partners are more likely to achieve better performance.

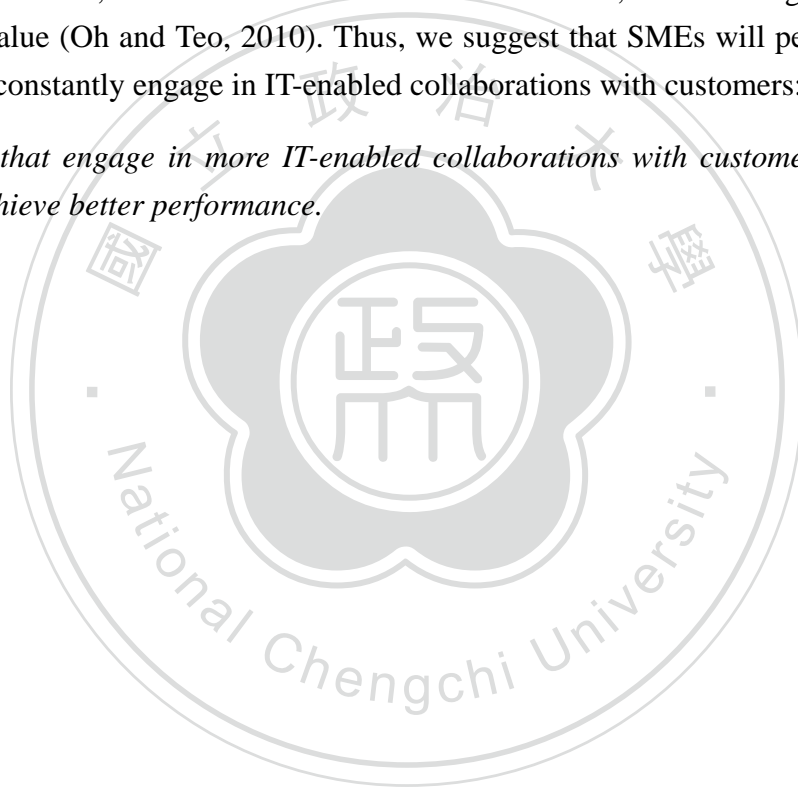
3.2.2 Collaborating with customers

As discussed in the previous chapter, collaborating with customers refers to the joint undertaking of practices by a company and its customers (West, 2010). In service economics, customers are viewed as the co-producers of products and services. Although connecting with customers is a significantly time-consuming and

resource-demanding process for SMEs, Philipsen et al. (2007) argued that good relationships with customers contribute positively to the development of capabilities and the scope and focus of a firm's product portfolio.

Through collaboration with customers, firms are able to create superior value offerings that are relevant to target customers and result in firms receiving benefits in terms of revenues, profits, and referrals, for example (Payne et al., 2008). Additionally, by successfully managing value co-creation and exchange with customers, firms can seek to maximize the lifetime value of desirable customer segments (Payne and Frow, 2005). With the help of IT, firms can form new channels with which to collaborate with customers, effectively share knowledge (Füller et al., 2009), and maintain high information access, order fulfillment and customer service, which will generate high customer value (Oh and Teo, 2010). Thus, we suggest that SMEs will perform better when they constantly engage in IT-enabled collaborations with customers:

H7. SMEs that engage in more IT-enabled collaborations with customers are more likely to achieve better performance.



CHAPTER 4: RESEARCH METHODOLOGY

4.1 Case Background

The tourism industry is emerging in response to an increasing number of people interested in engaging in leisure activities. However, the tourism industry is dominated by SMEs (OECD, 2008). SMEs are usually limited by their resources, rendering it difficult for them to meet customer expectations and deliver better service quality. In this context, we have conducted our research in the tourism industry.

Our research subjects are all based in the Yilan County Mt. Pillow Leisure Agriculture Area. The SMEs in this area include, among others, bed and breakfasts (B&B), farms, orchards and restaurants. Because each SME has different and limited resources, it is difficult for them to meet diverse customer demands if they run their business on their own. To offer customers more activities to participate or more sites to visit, some SMEs have formed simple collaborations in an ad-hoc manner.

We implemented the case study methodology for this research. We chose to conduct interviews with eight case firms providing a range of services. A1 is a B&B with a part-time host. A2 is a medium-sized sightseeing orchard. A3 is a small wholesaler of Chinese snacks that intends to transform into a DIY provider where customers will make their own snacks. A4 is a successful B&B that has been cited by some popular Taiwanese dramas. A5 and A6 are B&Bs that rent their spare rooms to more or less support their family. A7 is a leisure farm growing white michelia, and the new host only recently began renting the farm from the original proprietor and is trying to add new services and products. A8 is a leisure farm growing bamboo shoots, but its main source of revenue is its well-known organic restaurant. Because the SMEs at Mt. Pillow Leisure Agriculture Area have not yet created a unified IT-enabled collaborative platform, we extended the target platform to whatever can provide a channel for SMEs to obtain information, directly communicate and interact, and engage in collaboration with customers and other SMEs. The IT-enabled collaborative platforms we considered were, among others, blogs, guestbooks, and social networking websites. The descriptions of eight SMEs and IT collaborative platforms they used are shown in Table 4-1.

In our research, we aim to determine which types of SMEs tend to engage in IT-enabled collaboration. We are also interested in determining whether SMEs can enhance their performance through collaboration using these platforms. The results of

this research can help IT operators target the appropriate SMEs with specific resources and have more compelling reasons with which to promote collaborative platforms.

No	Category	Description	IT collaborative platform used
A1	B&B	A SME that provides customers with accommodations and homemade products.	Blog Facebook Guestbook
A2	Orchard	A SME that provides customers with orchard for fruit picking and DIY experiencing.	Blog Facebook Guestbook
A3	Restaurant	A SME that makes a variety of Chinese snacks and intend to transform into DIY experiencing which will be available few months after.	Blog
A4	B&B	A SME is known for Taiwanese trendy drama filming location that provides accommodations with high-class facilities and natural landscapes of Mt. Pillow.	Facebook Guestbook
A5	B&B	A SME that provides customers with home-feel accommodations, natural landscapes of Mt. Pillow beside, orchard in the backyard, and DIY experiencing.	Blog Facebook Guestbook
A6	B&B	A SME that provides customers with accommodations and an overlook of the natural landscapes at top of the Mt. Pillow in the backyard.	Facebook
A7	Farm	A SME that provides customers with magnolia garden for visiting, DIY experiencing, and related products.	Blog Facebook
A8	Farm	A SME that provides all kind of bamboo shoots DIY experiencing, meals, and related activities.	Blog

Table 4-1 Detail of Eight Cases

4.2 Data Collection

The primary data sources were face-to-face interviews conducted from April 2012 to May 2012. To gain research insights, we designed semi-constructed questions based on our research framework. Basically, we conducted two interviews of each case. The first of these interviews focused on SMEs' background, products and services, and the second focused on their resources, IT capabilities and other information related to our research. Each interview lasted approximately one hour to ensure a thorough survey. All interviews were recorded, and all sessions were transcribed before the data analysis. To ensure the internal validity, external validity, construct validity and reality of the case study, we applied Yin's (2003) case study techniques to our research (shown in Table 4-2). The analyzed results of our interview framework are summarized in the next chapter.

Tests	Case Study Tactic and the phase in which tactic occurs (Yin, 2003)	Implementation in this study
Internal validity	Conduct an explanation-building in data analysis phase	We conducted a cross-case analysis in our multiple-case study and a series of iterative work to examine the framework.
External validity	Use replication logic in multiple cases in research design phase	We developed our research framework to process the 8 cases in order to test external validity of our hypothesis.
Construct validity	Use multiple sources of evidence in data collection phase	The primary data were collected via interviews. Other information from cases' own websites, governmental promoting DMs were also considered as important data sources.
Reality	Use case study protocol in data collection phase	We used semi-structured guide to all interviews. The guide were included several open questions that allowed participants to flexibly response.

Table 4-2 Validities and Realities Tests

CHAPTER 5: CASE ANALYSIS

5.1 Data Analysis

Given that there are different types of resource processing, which types of SMEs are more likely to engage in IT-enabled collaboration and in turn increase performance? To answer this question, in this section, we will analyze these interview data and apply the research framework we proposed in the previous chapter to the eight different cases. The results are summarized and shown in Table 5-1.

SME resources

Operand resources, by definition, are resources with which an operation or an act is performed to produce an effect (Constantin and Lusch, 1994), including physical, financial and legal/contract resources. We analyzed the operand resources of each case using two variables: “scale of equipment compared to that of other SMEs” and “financial status.” For the first variable, we considered a case’s scale of equipment relative to the average level and then assigned to each case a rank of “Low”, “Medium” and “High”. For the second variable, we assessed whether the income derived from the business supports the owners’ personal expenses and gave the cases ratings from “Low” to “High”. We then averaged the two scores to produce the final ranking.

Possessing no suites and no in-room televisions, case A1’s B&B is simpler than the other establishments. Customers with lower travel budgets and quality requirements are the target group of this B&B. Because the host couple has their own jobs, they have no burden of living. The income of the B&B provides them some help with taxes and utility costs. In sum, A1 has a Low to Medium level of operand resources.

A2 is a medium-sized sightseeing orchard. Because it has been operating for longer than other orchards, the government subsidized and helped them to plan their orchard. In addition to selling fruits, they also provide tour guide services and a DIY experience. However, it is difficult to earn profits from operating a sightseeing orchard. We rate A2’s operand resources at a low to Medium level.

A3 markets Chinese snacks. This case firm is smaller than large wholesale factory but has more and better equipment such as freezers and stirrers than common bakeries. This firm’s main customers are restaurants, and its business is stable enough to support the owner’s family. We thus rate A3 as having a Medium level of operand

resources.

A4 is a famous B&B in Yilan. The owners built the house both for their family and for the B&B, so the space is well designed and planned. In addition, A4 is also a filming location for some Taiwanese trendy dramas and consequently attracts many customers. We thus rate A3 as having a High level of operand resources.

A5 and A6 are both B&Bs that rent their spare rooms to run this business. In addition their income from their B&Bs, they also have other financial resources. Although the businesses are not performing very well, the earnings of their B&Bs more or less support their personal expenses. We thus give the operand resources of A5 and A6 a Medium rating.

A7's owner is the new operator of a leisure farm, which he is renting from the original owner. The site is humble but is difficult to remodel it because the land is owned by many people. In addition, because this business is in the startup phase, expenses are much greater than income. We thus rate the operand resources of A7 at a Low level.

The owner of A8 emphasized that her offered meals use authentic food ingredients and that her site's decor is not its strength. Her husband's salary and the business's highly profitable summer season are enough for the entire year's expenses. Consequently, we rate the operand resource of A8 at a Medium level.

Below are interview excerpts representing different levels of operand resources:

“Our weakness is that we only have single room – no suites. If customers want to live more comfortable, they won't chose here. Customers like students and families are common customers. Here, we do not have TV; some customers will consider this.” (A1)

“We are...so-so compared to others in our industry. There are others that are larger than we are. We have more government subsidies than others, probably because we have been operating for a long time. The government also helps us to arrange the orchard.”(A2)

“But it still hard to live, it is difficult to rise prices when we only depend on guiding and DIY instructing.”(A2)

“In these years, restaurants constantly purchase our products; it means that they recommend our products. If we seize the opportunity, we'll be able to survive.”(A3)

“We established this business six to seven years ago. At that time, our equipment was quite good and unique. At the beginning, we thought the revenue could pay off our loan, but we never imagined that we would be doing so well in these years.” (A4)

Operant resources, by definition, are resources employed to act on operand resources and/or other operant resources, including human, technological, organizational, informational and relational resources. We analyzed three evidences to assess the operant resources of each case firm: “Computer skills”, “Innovation/Change intention” and “Customer relationship management”. A description of each evidence is shown in Table 5-1. For each case firm, we gave each term a rating and took the average of all three to generate an overall rating.

According to our interview, the host of A1 uses computers to operate the business, and she spends time on the Internet every day. She is willing to learn something new but is adopting a passive approach. In addition, she previously engaged in limited customer relationship management, such as sending birthday cards to customers, but recently has engaged in fewer activities of this sort. In sum, A1 has a Medium to High level of operant resources.

The owner of A2 has basic computer skills but lacks advanced skills. He has an idea of how to increase turnover and is willing to change. In addition, he has a good relationship with his customers and continuously contacts them after their stay. Therefore, A2’s operant resources are at a Medium to High level.

A3’s holder has little computer knowledge. Because he is busy at work, he has not updated information on his blog for a long time. However, he is active in change, and he brought up the idea of industrial transformation. His relationships with his customers center on the moment of service. Therefore, we rank the operant resources of A3 at a Medium level.

The host of A4 has good computer skills and can efficiently use IT to promote his B&B. His mantra is “To be myself”, so he has less desire to change. He does not intend to pursue close relationships with customers, but he does use the Internet to continually influence them unobtrusively and imperceptibly. We rank the operand resources of A4 at a Medium level.

A5’s host has a moderate level of computer skills. She is willing to learn and makes some adjustments according to customers’ suggestions. Most of her customers return or recommend her B&B to others. They maintain communications after leaving her B&B. Therefore, A5’s operant resources are at a Medium to High level.

Computer handling is difficult for A6. The host sometimes adopts suggestions from customers depending on their situation. She is not active in managing customer relationships. Accordingly, the operant resource of A6 is at a Low to Medium level.

The operator of A7 has the ability to develop his own blog and understands the IT platform. He is passionate about his new job and has plans to make innovative changes. Customer relationships are made and fostered when customers visit. As a result, the level of operant resource of A7 is Medium to High.

A8 does not use a computer or the Internet. Its main promotion channel is through the government, the media and customers. She is satisfied with her current performance, so she does not consider making any changes. She has good relationships with her customers, owing to her charming personality during face-to-face interactions. Therefore, A8's operant resources are at a Low to Medium level.

Below are interview excerpts of different levels of operant resources:

"I don't use a computer. My eyes are not too good."(A8)

"I can go on the Internet, post articles on a blog...those basic skills. But I lack the advanced skills, like copyfitting."(A2)

"I think that compared to other SMEs in Yilan, my IT capability is better than others. I know how to use many free IT channels to promote our B&B." (A4)

"No...change is the next generation's affair. I will not change, and I think conditions are currently pretty good."(A8)

"I will participate in DOC courses if I have free time. But I have already learned most of the content." (A1)

"Now, I want to develop some DIY activities, like with these leaves. Manufacturing may turn these leaves from trash to gold." (A7)

"Customers come by themselves. I do not have a good memory...A customer said he has came here before, but I still forget who he is."(A6)

"Last time, a group of customers came here and took pictures. They posted the pictures on Facebook, so I 'like' it and said welcome back. After that, the entrepreneur came to Yilan and brought me a radish cake." (A5)

Resource complementarity and *Resource similarity* are described as "the principles of partner selection" in terms of complementarity and similarity. We thus asked each case the following question: "What are your concerns when choosing

SMEs to collaborate with or recommend?” According to interviews, A1, A5 and A6 referred their customers to other B&Bs when they were filled to capacity. A2 thought that an alliance with firms in different sectors is preferable. A3 also mentioned that partners in an alliance should provide different services to be valuable. A4 considered that recommending other SMEs to customers are endorsements, so he strictly chose businesses at similar levels to make alliances across fields. A7 only considered relationships with SMEs in other fields. Moreover, depending on customers’ needs, A8 recommended similar scale business. In total, there are 3 levels of resource complementarity: no concept, no formal plan to complement, and well-arranged complementarity. We thus rated the level of resource complementarity of A7 and A8 as Low, that of A1, A5 and A6 as Medium, and that of A2, A3 and A4 as High. In addition, the cases we interviewed can be divided into two groups: with and without the concept of resource similarity, on which only A4 and A8 offered comments.

Below are excerpts of our interview:

“In our B&B sector, if our rooms are occupied, we will recommend other B&Bs to our customers, and they will introduce their customers as well.” (A1)

“I won’t choose the partner who provides the same service. Making onion cakes here, there and everywhere is boring! We provided different products to customers – it’s more valuable.” (A3)

“Sometimes the customers want us to recommend other B&Bs – it’s really a big pressure. Those customers who like A4 will not easily switch to other B&Bs. In addition, some business in this area have said, why don’t we introduce customers to them. How can I send customers there if I have received complains about that business more than once? So, I will find equally good businesses to form alliances.”(A4)

IT-enabled collaboration

IT-enabled collaboration with partners is described as “the degree of interaction between SMEs through IT platforms.” We judged cases from three levels: do not/mostly do not interact with other SMEs through IT; engage in basic interactions with SMEs through IT platforms; and engage in discussion or coordination with a business partner through IT platforms. We gave these levels the corresponding ratings of “Low”, “Medium”, and “High”.

Through our interviews and analysis, A2, A3, A6 and A8 do not interact with other SMEs through IT and usually conduct communications in person or over the phone. We thus ranked these 4 cases as Low IT-enabled collaboration with partners. In

addition, A1, A4, A5 and A7 engage in basic interactions, such as leaving messages and sharing pictures with other SMEs on Facebook to maintain friendships. We thus gave these 4 cases a Medium rating. However, no case in our interviews cooperates with partners with the help of IT.

“We (SMEs) exchange information sometimes, like about difficult customers. But we only use face-to-face communication; we seldom go through the internet.” (A6)

“I sometimes interact with other SMEs on Facebook. Give them a thumbs up or leave messages... just like with general friendships.” (A5)

As mentioned above, we denote *IT-enabled collaboration with customers* cases as an SME is able to communicate with both existing and potential customers through at least one IT platform. Therefore, to measure the level of IT-enabled collaboration with customers, we created ratings from Low to High depending on the frequency with which the firm communicates with customers through IT-enabled collaboration.

According to the interviews, A1 often replied to customers on their guestbook and contacted them by e-mail. However, she adopted a more passive attitude with regard to IT-enabled collaboration with customers. We gave this special case an average rating. In contrast to this first case, A2, A5, and A7 showed similar characteristics; they sometimes interact with their customers and believe that IT truly helps them to communicate with their customers. Because of their medium frequency in interactions with customers through IT platforms, we denote these cases as having a Medium level for this category. A3, A6, and A8 are similar in their little use of IT to support their business operation, let alone to engage in collaboration opportunities on IT-enabled platforms. We thus gave these firms a Low rating. In contrast, A4, who was given a High rating in IT-enabled collaboration with customers, interacts with people on various Internet platforms every day. A4 considered IT platforms to be valuable not only for promoting its business but for learning more about customers.

Below are excerpts from our interviews:

“For example, the guestbook really works. If someone tells us that there are too many mosquitoes, I need to handle the situation, or if someone says that the environment is messy, I will sweep immediately.” (A7)

“Some of my Facebook friends are our fans. I will show some pictures of our lives and surroundings. Let them spontaneously learn more about our B&B. Also, I search our firm’s name on Google everyday to learn what customers think of us.”(A4)

Performance

The performance measures have been widely discussed in past literatures. We assessed the firms' performance based on whether they are improving in terms of income generating, partner relationship building and customer relationship building. We gave ratings of "Low" to "High" depending on the amount of evidence indicating their performance in these areas.

We found from the interviews that A1 earns income by selling the product and has better relationships with customers by interacting with them; A2, A3, A6 and A8 have not seen income growth or an improvement in their relationships with customers and partners; A4 has successfully reduced advertising costs, gained income and improved relationships with customers and partners; A5 has not substantially increased income but finds that interaction with partners and customers is helpful for maintaining a good relationship; A7 has not yet begun to operate but has forged good relationships with partners. Therefore, we determined that A4 presents the highest performance, A1 and A5 have medium performance, A7 has low-to-medium performance, and A2, A3, A6 and A8 have the lowest level of performance.

Below are excerpts from our interviews:

"For example, I have good relationships with some SMEs. Although I am not currently connected to their friends, I will still try to add them as friends on Facebook." (A7)

"Through Facebook, I recognize some SMEs in other areas, and we interact sometimes on Facebook. Also, customers have asked me to recommend a few restaurants for New Years on Facebook and then later thank me on Facebook because the one I recommended was really good and cheap." (A5)

"I use the information technology to do marketing for free. I also have 900 friends on Facebook, including both SMEs and customers, most of them actively add me as friend. I think this kind of interaction is a pretty good, not too commercial, but unobtrusive way to promote our B&B." (A4)

Factor	Item	Definition/Evidence	A1	A2	A3	A4	A5	A6	A7	A8
Independent variable	Operand resource	◆Equipment scale ◆Financial status	Low to Medium	Low to Medium	Medium	High	Medium	Medium	Low	Medium
	Operant resource	◆Computer skills ◆Innovation/Change intention ◆ Customer relationship management	Medium to High	Medium to High	Medium	Medium	Medium to High	Low to Medium	Medium to High	Low to Medium
	Resource complementarity	Partner selection principle with complementarity concept	Medium	High	High	High	Medium	Medium	Low	Low
	Resource similarity	Partner selection principle with similarity concept	No	No	No	Yes	No	No	No	Yes
Moderating variable	IT-enabled collaboration with partners	The level of interaction with partners through IT	Medium	Low	Low	Medium	Medium	Low	Medium	Low
	IT-enabled collaboration with customers	The level of interaction with customers through IT	Medium	Medium	Low	High	Medium	Low	Medium	Low
Dependent variable	Performance	◆Income generating ◆Partner relationship building ◆Customer relationship building	Medium	Low	Low	High	Medium	Low	Low to Medium	Low

Table 5-1 Analytical Result of Eight Cases

5.2 Discussion

Across the eight cases, we observed different levels of SME resource, IT-enabled collaboration and SME performance. In this chapter, we will discuss the results in comparison to our research framework.

5.2.1 Impact of operand and operant resource on IT-enabled collaboration

Data analysis revealed that the operand resource level is Low for A7; Low to Medium for A1 and A2; Medium for A3, A5, A6 and A8; and High for A4. Moreover, the operant resource levels are Low to Medium for A6 and A8; Medium for A3 and A4; and Medium to High for A1, A2, A5 and A7. In addition, the level of IT-enabled collaboration with partners is Low in cases A2, A3, A6 and A8 and Medium in cases A1, A4, A5 and A7. In addition, the level of IT-enabled collaboration with customers is Low in cases A3, A6 and A8; Medium in cases A1, A2, A5 and A8; and High in case A4. To easily comprehend relationships between different levels of resources IT-enabled collaboration, we converted range of levels from Low to High to 1 to 5. In the following paragraphs, we will examine hypotheses H1a, H1b, H2a, H2b and H3, which we introduced in the previous chapter.

First, we examine hypothesis H1a, which states that “SMEs with a greater amount of operand resources are able to participate in better IT-enabled collaborations with partners”. The relationships between operand resources and IT-enabled collaboration with partners in 8 cases are shown in Figure 5-1-a. The line shown in all figures is produced by Microsoft Office Excel 2007 based on linear regression which presents the relationship between two factors. According to Figure 5-1-a, we find no significant relationship between these two items, rejecting hypothesis H1a. Next, we examine hypothesis H1b, which proposed a positive relationship between operand resources and IT-enabled collaborations with customers. The results from our case study are shown in Figure 5-1-b. As we can see in Figure 5-1-b, the relationship between operand resources and IT-enabled collaboration with customers is generally positive, except for A3, A6 and A8, which have a Medium rating in operand resources but a Low rating in IT-enabled collaboration with customers. These three cases report a lack of computer skills, managing their customer relationships without the use of IT.

We considered why operand resources support IT-enabled collaboration with customers but not with partners and determined the possible reasons for this phenomenon by analyzing the interview transcripts. When a SME has rich operand resources, it can provide services on its own without collaboration with others; in addition, with rich operand resources, the SME is able to provide better service to its

customers. Similar comments are made by A1 and A2 as well:

“The SMEs who run their business well won’t collaborate with others. They care about themselves ...and it’s enough for them.” (A2)

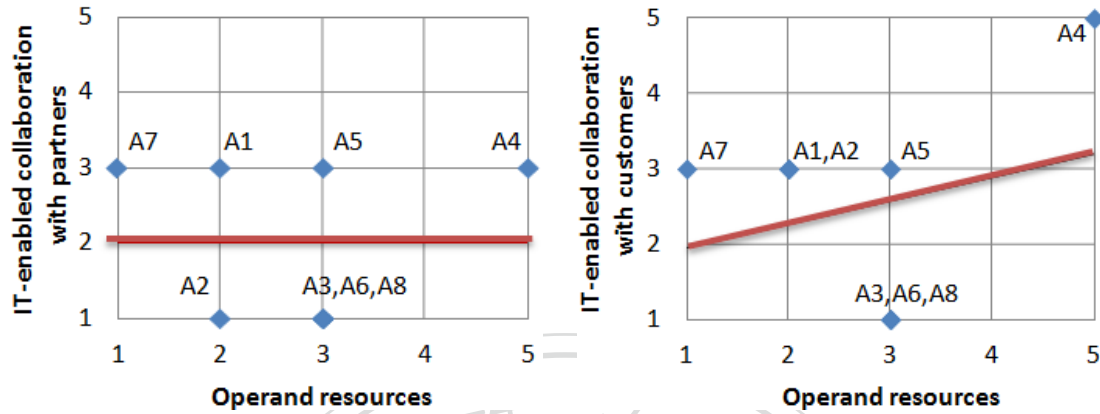


Figure 5-1-a

Figure 5-1-b

Second, we examine hypothesis H2a, which states that “SMEs with a greater amount of operand resources are able to participate in better IT-enabled collaborations with partners”. The relationship between operand resources and IT-enabled collaboration with partners for the 8 case firms is shown in Figure 5-2-a. As we can see in Figure 5-2-a, the relationship between these two items is roughly positive, which supports our hypothesis. Only A2 and A3 diverge from the trend, as they engage in innovative thinking and have good relationships but only engage in non-IT communication with partners. Consequently, we examine hypothesis H2b, which proposes a positive relationship between operand resources and IT-enabled collaborations with customers. The positive relationship based on the case studies, as shown in Figure 5-2-b, supports our hypothesis. A3 represents the only exception, being too busy to manage customer relationships through IT.

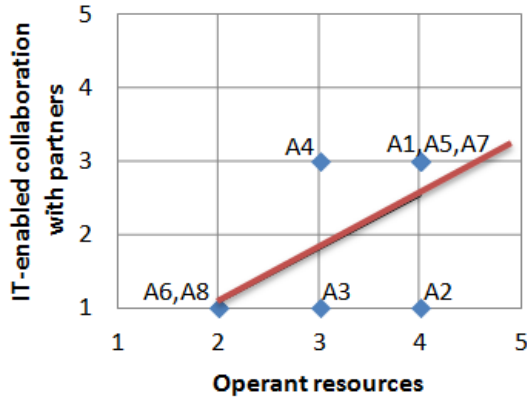


Figure 5-2-a

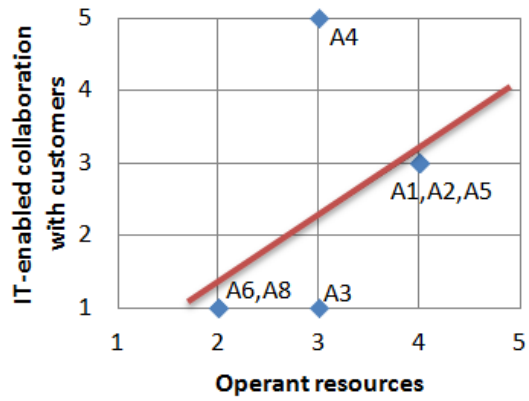


Figure 5-2-b

We then examine hypothesis H3, which states that “operant resources contribute more to IT-enabled collaborations than operand resources.” We combined the results of IT-enabled collaboration with partners and customers to obtain an overall score. According to Figure 5-3-a and Figure 5-3-b, we find that operand and operant resources both contribute positively to IT-enabled collaboration. Moreover, operant resources contribute more, as shown by the steeper slope of the trend line; this result supports our hypothesis.

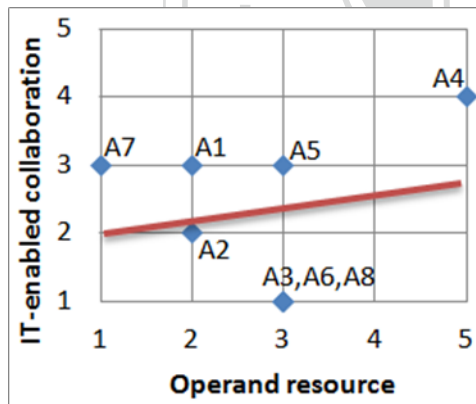


Figure 5-3-a

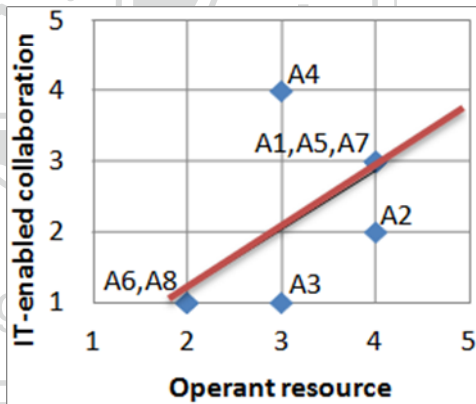


Figure 5-3-b

5.2.2 Impact of resource complementarity and similarity on IT-enabled collaboration

We found from analyzing the interviews that the resource complementarity level is Low for A7 and A8; Medium for A1, A5 and A6; and High for A2, A3 and A4. In addition, the resource similarity score is Yes for A4 and A8 and No for the remainder. To simplify the data analysis and maintain consistency, the answers Yes and No translate to the scores 5 and 1.

We examine hypotheses H4 and H5, which state that “SMEs with complementary resources/similar resource status are more likely to engage in IT-enabled collaborations with each other.” However, the relationships shown in Figure 5-4-a and Figure 5-4-b indicate that there is no effect of resource complementarity and resource similarity on IT-enabled collaboration with partners. The results of the case study do not support our hypotheses.

Because of restriction in our data collection, we cannot obtain thorough information about all collaboration partners and SMEs that the firms had interacted and communicated with through IT platforms. Instead, we asked the case firms about their intention to collaborate with SMEs with complementary resources and similar resource levels. Nevertheless, although the firms show a willingness to cooperate with SMEs with complementary resources and similar resource levels, most of their communications do not employ IT. We find clues from interviews such as the following:

“I am not really good at using a computer. But comparing other SMEs in this area, my capability is sort of above average since they are older. Most communication between us mainly takes place by phone calls.” (A5)

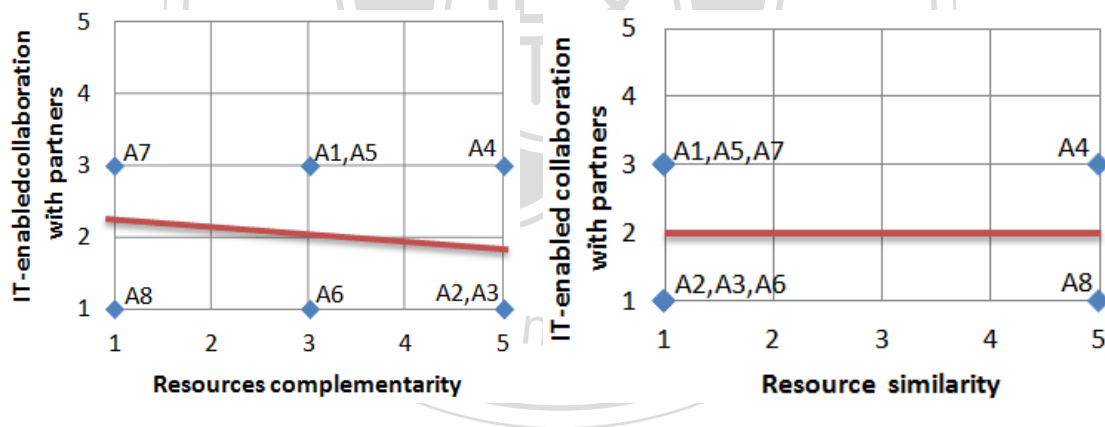


Figure 5-4-a

Figure 5-4-b

5.2.3 Impact of IT-enabled collaboration on SME performance

In this section, we attempt to determine the relationship between IT-enabled collaboration and performance. Following data analysis, we rank the performance of A2, A3, A6 and A8 as Low; A7 as Low to Medium; A1 and A5 as Medium; and A4 as High.

We first examine hypothesis H6, which states that SMEs that engage in more IT-enabled collaboration with partners are more likely to achieve better performance.

The relationship between IT-enabled collaboration with partners and performance shown in Figure 5-5-a is positive. In a similar manner, we examine hypothesis H7, which concerns the relationship between IT-enabled collaboration with customers and performance. Figure 5-5-b shows a positive relationship between the two. The only exception is case A2, which is rated Medium in IT-enabled collaboration with customers but Low in performance. Although A2 sometimes replies to customers' questions on the Internet, it is not clear that it drives sales and relationship building. The results of our analysis generally support our hypotheses.

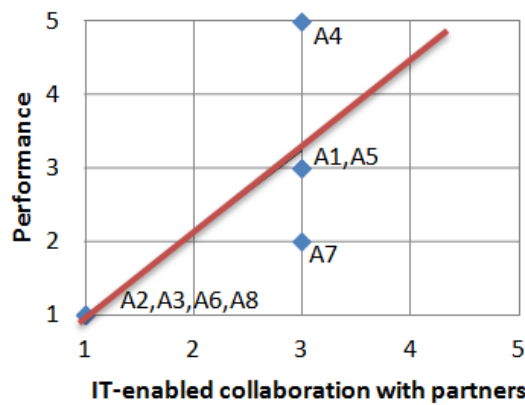


Figure 5-5-a

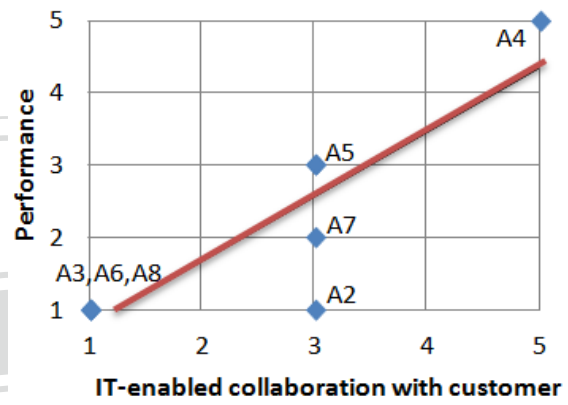


Figure 5-5-b

5.3 Findings

According to our research and interview results, we found that operant resource as the key factor for SMEs to engage in more IT-enabled collaboration with partners and customers. For those cases that highly participate in IT-enabled collaboration, their operant resources are in a greater amount such as good computer skills, change or innovation intentions, and customer relationships management. Take A4 for example, they have better computer skills than other SMEs and are able to employ free channels promoting themselves; A7 is innovative and change-oriented in proactively developing new services; also, A5 manages good relationship with customers not only at the moment but also after service.

“I think that compared to other SMEs in Yilan, my IT capability is better than others. I know how to use many free IT channels to promote our B&B.”
(A4)

“Now, I want to develop some DIY activities, like with these leaves. Manufacturing may turn these leaves from trash to gold.” (A7)

“Last time, a group of customers came here and took pictures. They posted the pictures on Facebook, so I ‘like’ it and said welcome back. After that, the entrepreneur came to Yilan and brought me a radish cake.” (A5)

In contrast, for those cases that rarely participate in IT-enabled collaboration, their operant resources are in lower levels. For instance, A8 do not use computer and not willing to change anymore; A6 don’t pay much attention to customer relationships. All these reasons influence the inclination of IT-enabled collaboration engagement. Therefore, when IT operators want to promote these kinds of IT collaborative platforms, they could target on businesses that own more operant resources to get more adoptions.

“I don’t use a computer. My eyes are not too good.”(A8)

“No...change is the next generation’s affair. I will not change, and I think conditions are currently pretty good.”(A8)

“Customers come by themselves. I do not have a good memory...A customer said he has came here before, but I still forget who he is.”(A6)

Besides, the SMEs also have some practical concerns about the IT collaborative platform from our interview insights. The top issues they mentioned are “Free Charge”, “Easy to Use” and “High Exposure”. Some SMEs like A8 focus on how much they should pay; some other SMEs recommend that the platform must be easy to understand; still others consider the exposure rate that the platform could perform to gain better advertising effects. All these topics show that IT operators need to take into consideration while developing and positioning IT collaborative platforms.

“Does it cost? If the answer is yes, I don’t need that.”(A8)

“If you want to develop this kind of platform, easy to use is most important. Like blogs or Facebook, the operation is simple and easily to know where to click.” (A1)

“The exposure of Mei-mei-mei(website) is OK, many customers got our information from that. But now...the advertising effect of blog is not as well as before, uh... maybe their attention turned to other platforms like Facebook.”(A2)

CHAPTER 6: CONCLUSIONS

6.1 Summary

Playing an important role in the Taiwanese economy, small- and medium-sized enterprises (SMEs) represent the main force of economic growth in Taiwan. However, due to resource limitations, they are forced to provide better products and services to customers on their own. Many studies have shown that SMEs can benefit by collaborating with other businesses and co-creating value with customers.

In our study, to determine the key resources contributing to IT-enabled collaboration and SME performance, we reviewed the related literature and constructed a resource-based framework for analyzing IT-enabled collaboration. The new resource constructs in our research include (1) operand resources, (2) operant resources, (3) resource complementarity and (4) resource similarity. We then developed the research framework and a set of hypotheses concerning three items: SME resources, IT-enabled collaboration and SME performance. In addition, our research targets are SMEs in Yilan Mt. Pillow Leisure Agriculture Area that are in the service industry. To test the proposed hypotheses, we chose eight cases and conducted two interviews for each case to gather useful insights about these firms' resources, the nature of their IT-enabled collaboration and their performance. Following the data collection and case analysis, we found support for several of our hypotheses in our interview results.

Through our research, we found that operand and operant resources both have a positive effect on IT-enabled collaboration. Moreover, between operand resources and operant resources, the latter contributes more than the former to IT-enabled collaboration. Furthermore, IT-enabled collaboration with partners as well as with customers has a positive relationship with SME performance, which indicates the positive impact of IT-enabled collaboration on performance. In summary, we find operant resources to represent a key factor leading SMEs to engage in IT-enabled collaboration and further stimulate performance.

6.2 Limitations and Implications of Future Research

Two hypotheses are not supported in our study: complementary resource and similar resource status between SMEs toward IT-enabled collaboration with partners. Because of data limitations, we cannot thoroughly gather information on cooperation between SMEs. To measure complementarity or similarity between two partner SMEs,

we require the overall resource details of all SMEs in the area in addition to the eight cases because an alliance may not formed solely among these eight SMEs. In addition, there is a lack of backstage details on IT platforms concerning those whom SME actually interacts and communicates with. Therefore, in future research, we can extend the research objects to all areas and promote unified collaborative platform with which we can easily obtain data, such as uVoyage, an integrated tourism services collaborative platform developed by the National Chengchi University Service Science Research Center (SSRC). This is a challenge to overcome in the future.



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Appendix A: Question List for the Interview

(Chinese version)

Section 1: SME Resource

- 商家擁有的土地大小、廠房設備與其他同業相較…?
- 商家擁有的資金他同業相較?收入是否足夠?
- 商家是否為合法立案的?符合農地使用辦法?產品經過衛生檢驗?
- 商家經營的人力投入，全職或兼職?
- 商家使用電腦的能力及頻率?
- 商家是否有創意發想、願意改變的思維?如，對現狀是否有想要改變的地方?當初的轉型是主動或被動?
- 商家是否樂於接受新知，持續學習?如數位機會中心的課程
- 服務後顧客的滿意度、回流率及推薦他人的意願?
- 有合作的商家數量?對合作的態度是機及或拒絕?
- 列舉合作的商家名稱，期間溝通的方式為何?是否有藉由 IT 的幫助?
- 如何選擇合作的對象?如，異業、服務品質。

Section 2: IT-enabled collaboration

- 使用了哪些以資訊科技為基礎的合作平台?
- 對於使用科技化的平台的意願有多高?
- 透過科技化平台與其他商家或顧客溝通的頻率?
- 透過科技化平台與其他商家或顧客的接觸數量?
- 對於這些平台有什麼樣的建議或是問題?

Section 3: Performance

- 透過使用資訊科技的平台與商家或顧客互動，是否能因而增加銷售?
- 透過使用資訊科技的平台與商家或顧客互動，是否能有效的提高設備使用率?
- 透過使用資訊科技的平台與商家或顧客互動，是否能因而認識新的商家或顧客?
- 透過使用資訊科技的平台與商家或顧客互動，是否能與商家或顧客建立更良好的關係?

Appendix B: Interview Contents and Data Analysis (Chinese version)

Factor		Item		Definition / Evidence			
Independent Variables		Operand resources		商家的設備規模 低/平/高 商家的財務狀況 勉強/平衡/盈餘			
A1	A2	A3	A4	A5	A6	A7	A8
Low/Medium	Low/Medium	Medium	High	Medium	Medium	Low	Medium
A1		受：我們噢，我們就差都是雅房，客人如果想要住舒適一點點就不會選這裡，像學生、家族阿比較會來我們這邊，像我們這邊也沒有電視，有些客人過來說你們怎麼沒有電視。				Low	
		受：像我們是自己的家提供出來，不是專門經營的，那本身也有工作，剛好有空的房子所以比較沒有錢方面的問題。如果有一個禮拜一天阿，維持水電費支出阿繳個稅金阿維修這樣子。				Medium	
A1 的民宿房間為雅房，設備較簡沒有電視。本身有工作，兼職民宿補貼家用，經濟壓力不大。							
A2		受：面積大概六分地，在同業裡面算是普通啦，比我大的也有啦一甲兩甲的。設備來說算完善了，可能因為我這邊的比較久了，政府補助也比較多，那有補助的話，我也比會去投資啦，政府也會幫你規劃。				Medium	
		受：現在還是蠻辛苦的啦，靠導覽解說 DIY 啦那價格還是沒辦法提高。				Low	
A2 中型規模的觀光果園，有政府的規劃補助，但想靠經營果園賺錢還是蠻辛苦的。							
A3		受：以我現在工作的設備來講，跟同行來說算是中下的啦，算是非常小的啦，你說在批發大宗來說算是小規模的，如果你要跟那種早餐店比，我們設備各方面當然是比他們高檔。				Medium	
		受：阿餐廳的話，這個市場會很長久。那他們這幾年來一直持續在跟我購買，表是我的產品得到肯定。那目前只要抓住這個，我就有辦法生存。				Medium	
A3 以食品批發來說算小型規模，但機器設備等都有持續在增加。目前市場穩定，足以維持生計。							
A4		受：我們大概六年快七年了，那在當時來講的話我們的設備算是蠻蠻蠻不錯的、蠻特別的，不過現在的民宿實				High	

	在是太恐怖了，大家錢一直砸砸砸砸…	
	受：我們家所以的設備從建設到完成花了一千八百萬，土地不算，棉被什麼的通通買齊…其實我們的營造成本算低的，現在花個兩千萬三千萬的大有人在。 受：我們當初想得很單純，如果每個月能多一個人的收入來還貸款，沒想到會走到今天這個狀況(名氣大)。	High
A4 的民宿有整體的規劃設計，地理環境良好。又因偶像劇帶來的宣傳效果，經營成效已超乎預期。		
A5	受：我們這邊大概一千平，包括前面、還有後面的果園，芭樂跟金棗。因為我們這邊的設備是比較居家型的，一般的民宿，不是像人家那種有豪華的設備，特地去蓋蓋來做民宿的	Medium
	受：因為我老公有退休金，那我們就是多少補貼一些阿。	Medium
A5 因為是有空房間來做民宿，不以設備取勝。有退休金，經營民宿多少補貼。		
A6	受：經營理念啦，就是民宿，就是家裡的空間拿出來用，不是為了要經營來蓋一棟，比較是家裡的那種感覺，不是那種飯店化的	Medium
	受：比較平常心啦，但是沒有顧客也是要煩惱啦!至少可以補貼一點家用，還是用得到啦，不然就不要開就好了。沒有請人的話，壓力也不會那麼大啦，像這種…房子就是自己的，還是回到兩個字民宿。	Medium
A6 有多的一棟房子來做民宿，以”民”宿為理念，強調家的感覺。先生有在工作，經濟壓力不大，認為能多少補貼家用就可以了。		
A7	受：設備…像這邊沒有很好的展場，那…像這塊地他們是共同持有，就很難修繕改建阿…這邊是一百年前他們的祖先很多共同持有這個，好像有一百四十幾個人，像他們兩兄弟講好了就是分玉蘭花園這邊，可是你在法律上，那個地籍圖噢，你調出來還一百多人持有這樣…所以要興建這些東西的話，就是要同意書阿，你一百多個人的印章都要蓋。	Low
	受：目前來講，因為我三月才開始接手，花費的部分還蠻多的，租金阿、請人家整理阿，還有一些 dm、教材那些… 受：以前自己把門關起來，那整年沒什麼人來，是不可能沒什麼花費啦，不過也沒什麼收入	Low
A7 的設備不好，也很難進行修繕。目前剛接手，支出的部分較多。		

A8	受：他們吃那個感覺、裝潢啦，阿我們不能跟他比啦，來我們這邊就是吃實在的。 受：其實也不一定啦，餐廳也不是要用到美輪美奐，阿我也不是讀那科的，用成這樣也沒意思，隨人的觀點啦。	Low
	受：像我先生有固定的薪水啦，你看我這樣沒什麼，我一個月也是做好幾萬塊的。我今年打算做三千個啦，為什麼我有把握可以做三千個，像做到現在已經四五百個了，來就那種團體性的，一次十桌五桌，也是好幾萬餒。	High
A8 的設備簡易(鐵皮屋頂搭移動式桌椅)，沒有太多裝潢，但是生意蠻好的。		

Factor		Item		Definition / Evidence			
Independent Variables		Operant resources		電腦能力 幾乎不用/基本操作/有效利用 改變學習的意願 拒絕/被動/主動 維繫顧客關係經營 不積極經營/主要是當下的服務/事後會持續經營			
A1	A2	A3	A4	A5	A6	A7	A8
Medium /High	Medium /High	Medium	Medium	Medium /High	Low/ Medium	Medium /High	Low/ Medium
A1		受：我上班幾乎都是電腦，下班也是，現在不都是 FB 跟部落格嗎，如果有上也大概都是一兩個小時這樣。					High
		受：之前都會參加(數位機會中心課程)，有空就去阿，其實大部分我都會了，像部落格建立阿我早就會了，我現在不會的是像影片剪輯的，比較想學這個部分。					Medium
		受：客人都說很親切阿，我們這邊是做心靈民宿。(客人)介紹的是有，有些是因為來過了還想再來，有好幾個是每年都來。 受：以前都會幫客人拍照片，上傳部落格、寄給他們，現在就懶得做了，但是接待的部分還是一樣啦。					Medium
A1 以電腦為工具，因為兼職不想做太累，主要是提供客人親切的服務，而事後的關係經營上就沒有那麼積極。							
A2		受：上網阿、部落格那個會，基本的會，但是比較深入的還不行，像版面阿設計那種的就比較弱。 受：頻率不一定啦，像那個採收期的話，採收前大概半個月就開始更改，像現在沒有水果的話就比較少					Medium
		受：我覺得那個內容還要再研發，那我們本身還想說再賣一些東西，像水果加工，還是賣一些飲料阿咖啡阿，應該要朝這方面多賣一些東西，多角化。					High

	<p>受：只要人數不要太多齣，阿我們這樣全程陪他們，一般來說滿意度都很高，如果說沒有很忙的話，都會陪他們聊聊天啦，很多都變成朋友。</p> <p>受：一般來說我都是簡單的，像我這邊有宅急便，打電話過來的話，我那個資料都會留起來，有那個貨單、存根阿，那產季來的話，就會想說哪些顧客阿比較常來的齣，就會打電話跟他講。</p>	High
A2 基本的電腦能力沒問題，對經營有想法想要改變，與顧客關係不錯，事後也會持續經營。		
A3	<p>受：這部分(電腦)的話是請老婆跟女兒去學，讓他們用，那我就專心做點心就好。</p> <p>受：之前也有在用那個部落格，yahoo 的，不過(更新的頻率)…很低餒，這個部分就是我的敗筆啦，</p>	Low
	<p>受：那個人就是要轉變，除非說你不跟社會競爭，我不去考慮客戶。如果你不變的話，說實在的來一次兩次，客人去其他地方看變得比較新比較漂亮，我來不是怕花錢餒，我是要來不一樣的行程。</p> <p>受：像我之前沒事就到農場去學習，齣學習就是有教授來教我們，那時候也是抱著學習的心態，也沒有知道要什麼DIY，是到那邊，跟大家混熟了，才知道原來大家都在玩這種東西。</p>	High
	<p>受：你看那個都是之前來我們這邊DIY的，那些DIY的小朋友我都可以跟他們玩得很盡興，所以他們來不只是一要教他們做、給他們吃點東西，重要的是有專業，還要給他氣氛，這樣他們都會覺得來這裡很有趣。</p>	Medium
A3 因工作忙也不太會用電腦，很久沒更新部落格資訊，但對經營有概念，主動提出轉型的想法，與顧客關係主要是當下的服務。		
A4	<p>受：因為現在對資訊也比較有那個啦，我自認我我在宜蘭縣的民宿業界來講的話，我在資訊方面的利用一定比其它的業者來的強，我會利用很多很多免費的資訊管道來幫卡嬸汀作push。</p>	High
	<p>受：這樣的方式(做自己)是最省力的啦，不用看到什麼就學什麼，也不用競爭，人家今天會出來一定有他的強項在，那風水輪流轉，今天你紅明天換他紅，你要比的話沒完沒了。</p>	Low
	<p>受：有個很重要的是視覺服務，讓人家來的時候會很度假感覺起來很舒服，這也算是服務的一種，人與人的服務那種倒不是我想要的。</p> <p>受：讓民宿的粉絲團，自然而然地認識民宿的周遭事物，不是強烈的置入性。其實就是我把我生活的一些過程 show 在</p>	Medium

	(Facebook) 上面。	
A4 在電腦方面使用上得心應手，能用 IT 為自己達到免費的宣傳效果。但因秉持著”做好自己”的理念，對創新改變的意願較低，不刻意的與顧客搏感情，但會透過網路持續的經營(潛移默化)顧客。		
A5	受：我使用電腦的頻率算…普通吧，說實在我年記算有點大，我六十幾歲，所以我對於會電腦這件事情，也是透過員山機會中心陳老師他們教我們怎麼上網怎麼去用，可是對我們來說還是不順手，雖然說我們會用。但是比起我們這邊其他的業者還算是比較會用的，因為他們算是年紀也比較大，感覺有點困難。	Medium
	受：如果有課就會去，不過有的課我已經學過了，就不會再去，他有的會重複，因為說實在店家不是很踴躍。	Medium
	受：像我有客人一年半來六次，他一開始跟同事來，後來就跟其他的同學同事教會家人…，就是還蠻喜歡我們這裡的。 受：像是上一次客人來，他們感覺不錯，然後後來他們就看到我們門口那個歌仔戲的照片，然後他們就跟那個照片合照，合照了以後他們就上那個 Facebook，就把照片貼上去，然後我就會在上面說讚，然後跟他們說歡迎再來。然後後來他們那個主辦人來宜蘭還專程做蘿蔔糕送來給我，我覺得這樣很不好意思，所以又買了禮物給他。	High
A5 的電腦能力尚可，也有意願去學習、根據顧客的建議去做調整，大部分是回流客或客人介紹的，離開後也會持續的與客人互動，關係良好。		
A6	受：部落格…之前有用過一下，後來就中斷沒用了，FB 的話也很少啦… 受：我現在可能就是去收個信看一下資料而已，那樣都要處理很久…	Low
	受：有時候還是邊做邊學啦，但是別人的也不一定適合你，因為顧客群不同嘛… 受：是時間是會去(數位機會中心)啦，不過我就是覺得他們有時候這邊教一下那邊教一下，那麼多平台記到最後我頭都暈了。	Medium
	受：(客人)他想來就來阿，熟客還是會記一下啦，不過客人來過那麼多，上次有客人說他有來過，我還是阿忘了	Low
A6 電腦對他來說有點困難，偶爾會橫顧客的意見去做修正，沒有很積極的在經營顧客關係。		
A7	受：現在我就從宜蘭縣政府的教育處那邊，我們都有帳號阿，我自己可以開部落格，所以我現在有建一個，就是慢慢的做一些活動弄上去這樣。 受：(電腦)沒有問題阿，就是想說多用幾個平台可以多曝	High

	光，最好資料要同步更新，像美美的話以前做的，那電話什麼都錯的那很麻煩。	
	受：我現在就是想做一些像葉脈的 DIY 啦，你看這個葉子阿…就是看人家外面有這樣做，那我發現說我現在葉子很多，那本來是垃圾，那我可以把它變成黃金嘛，一片葉子我以後搞不好可以賣個五十塊阿，把它加工之後我可做成書籤，再加個什麼框 受：還有一些周邊的，我們會開發那個玉蘭花的冰阿，因為夏天阿…冰沙，我機器已經買了，因為那個玉蘭花冰沙應該很少人做啦，變成我們這邊的一個亮點啦	High
	受：客人有的吼，他們進來吼，就是我們服務最重要啦，我們也跟他們導…解說啦，跟他這樣開玩笑講一講，這個時候如果你下次再來看，造型就不一樣，有的客人真的哦，下次會再來哦！	Medium
A7 能夠自己架設部落格，對資訊平台有一定的了解。對新接手的工作有熱情要做創新改變。顧客關係主要來自現場的經營。		
A8	受：我很不會去用電腦餒，眼睛不好，不會去用。也是有部落格啦，就是我大女兒幫我用，不過也是要有吩咐才會去用，不然也是不會。	Low
	受：不不不…(改變)那是我下一代的事情，我不會餒…我認為這樣就很好了，那我們下一代如果想要做，再讓他看要怎麼去改變，…我現在這就很好了	Low
	受：阿有一些會一個報一個，我也很好奇他們麼會知道來這，有的旅行社遊覽車怎麼找到這裡來 受：客人也很有趣，會來也會嫌說這邊很臭，但是下次還是會來 受：客人也會說張媽媽也很好玩，很阿沙力這樣 受：現在的互動最好玩，會唱歌仔戲給他聽，唱歌仔戲跟他們互動。就他們吃飽阿，我就唱他們就鼓掌這樣，就互動阿，就說我們的故事阿。	Medium
A8 不使用網路，宣傳依靠政府、媒體還有客人介紹，滿足現狀不會想再做變更，靠個人魅力與客人關係良好，但限於現場的互動。		

Factor	Item	Definition / Evidence
Independent Variables	Resource complementary	選擇合作夥伴的標準 互補性 沒有/無計畫性的資源互補/有規劃的獨特性
	Resource similarity	相似性 無/有考慮

A1	A2	A3	A4	A5	A6	A7	A8
Medium	High	High	High	Medium	Medium	Low	Low
No	No	No	Yes	Yes	No	No	Yes
A1 民宿之間存在若客滿推薦去別間的合作關係 (房間資源互補)， 主要以臨近的点來做推薦。→未提及相似性							
A2	<p>受：當然是要異業結合比較好啦，你觀光果園跟觀光果園沒什麼意思啦，你來這邊採果去那邊又採果，那就同質性了，一定要不一樣。像去金雙生那邊就是看花啦，那張媽媽那邊就是吃一些竹筍的特餐啦。</p> <p>受：像有一些(商家)就不好配合，理念啦，你還是要稍為過濾一下比較好。最主要還是服務要好，有些人他的好像比較情緒化一點，心情不好對客人那個態度就不好，那個就不好。阿有一些已經跟人家講好，又鹹人家來的客人太少、收費太低，品質阿偷工減料，這個也不行。</p>						
A2 認為跟有不同服務內容的商家合作，行程會比較有意思。→互補性							
A2 認為要找理念相近的商家、服務要好。→未提相似性							
A3	<p>受：一般來說我事都會接受(合作提案)啦，但是第一個就是我們兩個時間上是要配合得好啦，其他我都無所謂啦。你做生意要賺錢我做生意也要賺錢，現在生意是互利啦。如果我們三四個結合起來大家都賺錢，何樂而不為。</p> <p>受：我們之前也有做過都是DIY的，只要我們產品不一樣，我跟你講消費者只要我跟你介紹，他OK就OK啦，那不可能找同樣性質的嘛，去我這邊做蔥油餅去那邊也做蔥油餅，幹嘛無聊死了，那我們可能要change一下，看你要做別的還是我要做別的，要給他不一樣的產品，這樣才有價值感嘛。</p>						
A3 認為合作是互利的，結盟中提供的服務要不同才会有價值感。→互補性							
A4	<p>受：其實像所有的商家我們一定都會去涉獵，吃的餐廳也好我一定會先去吃過，那大概會了解他的產品，再看客人的需求，先了解商家之後再詢問旅客他想要的是什麼，想要吃什麼玩什麼，那我們再推薦給他。所以所有的資訊我一定會先了解過才會丟給客人。</p> <p>受：因為這種東西你介紹的你要背書，如果不好吃的話他都會幫我們加減分，因為是我們介紹出去的。像民宿我們這邊滿了客人說那你幫我介紹民宿，這個其實壓力都很大，很多到最後都打破掉，那些客人喜歡我們就喜歡我們，不會因為那邊沒有了換這邊，沒那麼容易。</p> <p>受：我會先了解說你的價位、想要的感覺是什麼，我一定會推薦優質的民宿，那我一定會去看過他家、經營者的理念什麼的都OK，我才会推薦。</p> <p>受：我們這邊有些同業在說，為什麼這些民宿業者都沒有丟客人給他啦，…阿是要怎麼丟給你，有時候丟給你客人滿意度差的時候，我敢丟嗎?一個兩個都說服務不好的時候，我根本就不敢丟阿…所以我們會找</p>						

	好的異業結盟，像我就常常介紹客人到胡搞蝦搞(餐廳)去
A4 認為推薦是以自己的信用背書，所以極為嚴格，其他商家不容易得到推薦。 認為客人喜歡他們這種質感，所以會挑選服務好，理念等級相似的商家做異業的結盟。→相似性、互補性	
A5	<p>受：我們(客滿)會跟他們合作(推薦)，比如說庄腳所在、山頂所在、大礁溪左岸…，其他的像是波的農場、大礁溪農場、庄腳所在，庄腳所在他有農場，它們也有一些 DIY 烤番薯，我們客人想去的話也會介紹他們過去。</p> <p>受：(套裝)行程可能像採果 DIY…還是看客人需求，如果他們只想要採果不想 DIY，那我就會介紹採果的給他…就是看各個層面啦，因為客人想要 DIY 的東西也不一樣…</p> <p>受：會我會考慮(合作的對象)，看他對客人的態度，就像你說合作的店家，我們之前也有跟一家民宿合作，但是客人的反應都很不好，會回來抱怨，所以我們後來就不會再介紹客人給他</p>
A5 若房間客滿時，會推薦客人去其他的民宿。→房間資源互補 主要根據客人的需求推薦商家，也會看對方的服務品質來評估。→未提及相似性。	
A6	<p>受：我會問你(客人)的需求是什麼，幾個人，看有什麼比較適合的，大概要的是什麼</p> <p>受：像有人要吃紅心芭樂冰我就會跟他講阿，還是阿蘭城的醋，就近啦~那零星的時間兩個小時一個小時，像張媽媽筍餐我也會跟他講阿，</p> <p>訪：那像如果你們這邊滿了，會推薦給其他民宿嗎?</p> <p>受：會，我們也是會，不過其實平常日不會，大部分當是大日的時候，像過年啦，這種很大日的，人很多。到真的很大日的時候，(客人)只要有房間就好了。</p>
A6 若客滿也是會推薦給其他民宿→房間資源的互補 在異業部分，視客人的需求來做推薦。→未提及相似性	
A7	受：其實是私交啦，就是朋友嘛，大家的頻率比較相同。
A7 合作的依據是商家之間的關係。→未提及相似性或互補性。	
A8	<p>受：像這些(商家)平常就有在互動啦，所以都會說…我都是跟客人說讓他們自己去選，我不會預訂好。</p> <p>受：像我們這邊可以接到 20 桌的也就我、山頂會館、庄腳所在而已，是可以去哪裡，噢…還有千里光~他們那個搞到很大間。</p> <p>受：旅行社問，我們會跟他說很多間…不過你也要去考慮說他能不能裝那些人，像亞典阿、茵寶貝他們比較可以裝這些人，看他們的人數多少來調整…像那個千喜點心最近在蓋，我是跟他說你那個體驗教室最好能裝到一百五十個，這樣以後我們比較好跟他配合啦~</p>
A8 視客人需求，但會考量人數，推薦規模相當的商家。→相似性	

Factor		Item		Definition / Evidence			
Moderating variables		IT-enabled collaboration with partners		商家透過 IT 與其他業者互動的程度 不用 IT 互動/基本交流/溝通合作事宜			
A1	A2	A3	A4	A5	A6	A7	A8
Medium	Low	Low	Medium	Medium	Low	Medium	Low
A1		<p>受：我(Facebook)現在裡面有一千多人，主要還是民宿業者、貨是我們在地的，也有一些外面的啦，但是會在互動的還是那幾個。</p> <p>受：商家之間的關係都是不錯的，會來按個讚阿留言阿。</p>					
A1 電腦能力還不錯，會用 FB 跟其他商家進行基本的交流。→medium							
A2		<p>受：像以前老爺酒店是直接來我們休閒農業區跟總幹事接洽，我們總幹事提供行程給他們選。</p> <p>訪：所以都是透過當面的方式？</p> <p>受：對對，他們也很慎重阿，會帶整個部門的人來玩一次看看。</p> <p>受：從網站這樣看(其他商家的資訊)，是會有幫助，但那個還只是皮毛，應該最主要還是現場去看。</p> <p>受：也是會 FB 啦但是很少，大部分都是同業，還有其他休閒農業區的也有，認識的。</p>					
A2 合作的洽談是面對面的，少有網路互動的方式。→low							
A3		受：為像我之前做網頁，也有台北那邊的幾家餐廳阿看到就跟我們訂貨。					
A3 有部落格做好放著很久沒更新，工作忙沒有時間用電腦。→low							
A4		<p>受：FB 上商家會有什麼樣的互動呢…怎麼講，像我在 FB 上的應用是自然而然的，不是很商業行為的…那互動好像比較少啦。像如果有人在我 FB 留太商業行為的話我也都是直接砍，包括他跟他的朋友都隔絕掉。</p> <p>受：我也會看網路上的評論阿，像民宿的話也都會稍微 search，我在網路上的功課做的還蠻多的。</p>					
A4 不刻意去宣傳，自然而然形成互動，能善用網路了解其他 商家。→medium							
A5		<p>受：(商家間)都是用打電話，主要還是這邊的商家…</p> <p>受：FB 有，就是用個人帳號那後面有寫隱居山林，</p> <p>受：偶爾有(用 FB 跟商家互動)，就在 FB 上按個讚阿說你的照片很漂亮阿…就比較朋友間的。</p>					
A5 透過 FB 與商家維持朋友間的互動。→medium							
A6		<p>受：FB 的話…就是跟我自己的朋友，沒有跟其它的商家，因為我用我自己的名字不是用山頂所在啦。</p> <p>受：有時候交流也會知道，喔有什麼奧客阿~不過都是面對面的啦，透過網路的就比較少。</p> <p>受：大部分還是面對面。</p>					
A6 商家的互動幾乎都是面對面的，不會用網路跟其他商家互動。→low							
A7		受：我們這邊有枕頭山休閒農業區的官網，但是後來就是價格的問題，					

	<p>那一年的維護費阿還蠻高的，因為他也達不到什麼效益，所以後來很多就退出。</p> <p>受：FB 有，YAM 天空也有，就是枕頭山這邊…也會跟其他商家互動。</p> <p>受：我們還是開會比較多啦，網路上面的串連好像就用 FB 而已。</p>
A7 會用 FB 等與其他商家作互動串連。→medium	
A8	受：(商家間)都打電話啦，不然就叫客人直接跟他們聯絡..
A8 幾乎不去用電腦，所以也不會用 IT 與商家連絡。→low	

Factor		Item		Definition / Evidence			
Moderating Variables		IT-enabled collaboration with customers		The frequency of the firm to communicate with customers through the IT-enabled collaboration.			
A1	A2	A3	A4	A5	A6	A7	A8
Medium	Medium	Low	High	Medium	Low	Medium	Low
A1		<p>訪：您在使用電腦方面的頻率？</p> <p>受：我上班幾乎都是電腦，然後下班也是會偶爾看一下 Facebook 或部落格，如果有上就是看一兩個小時這樣。</p> <p>訪：會不會使用電腦和之前的客人互動？</p> <p>受：之前我常跟他們互動啦，像來這邊的客人我會拍照片上傳部落格，然後寄給他們。可是後來我就懶得…反正我就不是很想經營啦…。以前會常常做，現在就懶得做。</p> <p>訪：您在留言板上與顧客的回應頻率多嗎？</p> <p>受：之前有啦，但後來我幾乎很少去看它。</p> <p>受：我會在部落格上放一系列的圖片、當天的心情、與顧客互動的情形等等。像望龍埤是我先介紹出來的，所以有很多顧客會看到然後打電話來詢問。</p> <p>受：之前過年或什麼節日會送個賀卡給顧客，現在都沒弄。</p> <p>受：我很少用 Email 跟顧客聯絡。</p>					
A1		A1 之前很常與顧客互動，近期較少，平均而言頻率尚可。 → Medium					
A2		<p>訪：留言板你大概是多久會去看？</p> <p>受：信箱每天都會看，留言板我會設定有留言的話會寄到信箱，再去做回覆。</p>					
A2		A2 每天會收信，偶爾與顧客互動。 → Medium					
A3		<p>受：網路行銷這些都是我老婆和我女兒幫我處理。</p> <p>受：之前做了網頁之後，有台北幾家顧客(大戶)來訂，之後我就很忙，哪有時間去看那個網頁，所以整個零售商這一塊就整個中斷掉。那當然將來我那一邊做的話就不能忽略這一塊。</p> <p>受：留言是一定有，只是目前比較少，因為你…坦白講，人就是有新的東西比較有吸引力，現在我們就是沒有去更新….</p>					

	受：(留言)通常是由我老婆做回應，但是可能不高啦。
A3 互動由家人處理，且非目前主力，頻率極低。 → Low	
A4	<p>受：我會利用很多很多不同的資訊廣告幫民宿做 Push。</p> <p>受：讓民宿的粉絲團，自然而然地認識民宿的周遭事物，不是強烈的置入性。其實就是我把我生活的一些過程 show 在 (FB) 上面。像有很多人就說老闆你可以當望龍埤的代言人。</p> <p>受：我都會去 google 搜到網友文章。我把它(某一篇它搜尋到的網友文章)PO 在網路上面的時候，每個人解讀不一樣。這會把我的感覺寫出來。</p>
A4 每天都會透過各種平台與顧客互動與了解顧客。 → High	
A5	<p>受：我會(定期)更新民宿資訊，然後每天大概就是上網看一下有誰寄信給我。</p> <p>訪：所以您跟客人大部分都是透過 Email 來溝通嗎？</p> <p>受：很少，大部分都是接電話，因為其實客人也很少用 Email。</p> <p>受：偶爾會透過 facebook 跟客人互動，但是比較少。像是上一次客人來，他們感覺不錯，然後後來他們就看到我們門口那個歌仔戲的照片，然後他們就跟那個照片合照，合照了以後他們就上那個 facebook，就把照片貼上去，然後我就會在上面說讚，然後跟他們說歡迎再來。然後後來他們那個主辦人來宜蘭還專程做蘿蔔糕送來給我。</p> <p>受：有客人在留言版上跟我留言。</p> <p>受：然後也有客人透過 facebook，就是跟我說，因為他曾經問我說他們過年想要去哪一家餐廳吃，來宜蘭吃飯，我就推薦給他，然後他後來就透過 facebook 跟我謝謝，因為那一家真的又好吃又便宜。</p> <p>受：有一兩個客人會在 facebook 上說生日快樂，老闆娘最近好不好。然後會有客人在部落格跟我說我的早餐很好吃。</p>
A5 有些許顧客會與之互動，頻率尚可。 → Medium	
A6	<p>訪：那有你需要帳號密碼登入的平台嗎？</p> <p>受：沒有耶，那些我不會操作所以…。</p> <p>訪：那有部落格嗎？</p> <p>受：我沒用耶。之前也許有我也不知道，好像有一個，但如果沒持續一直用，斷掉就沒用了啊。</p> <p>訪：那有用像 facebook 嗎？</p> <p>受：facebook…現在沒耶。用我自己的名字而已。跟我自己的朋友聊一下而已。</p> <p>訪：那有來過這裡的顧客會加你 facebook 嗎？</p> <p>受：恩…他不知道我。</p> <p>受：我會固定收信。</p> <p>訪：那會有顧客寄 Email 給你嗎？頻率多嗎？</p> <p>受：會會。不多，大部分還是打電話。</p>

	<p>受：之前有留言版，客人說有留言，但就沒有看到。所以我很生氣，就沒有用了。</p> <p>受：有一些比較工夫(費力)的會寄(透過 Email)幾張照片給他們(客人)。</p>
A6 僅與極少數顧客透過 Email 互動。 → Low	
A7	<p>訪：會用平台與顧客互動留言嗎？</p> <p>受：互動嗎？會阿會阿，留言阿什麼的。</p> <p>受：像留言板應該是很好用，像就跟我們反應這邊蚊子很多，我就要快點處理，像有人說很髒亂阿，我就要趕快掃一掃。</p>
A7 認為留言板很好用，有時與之互動。 → Medium	
A8	<p>訪：你們有什麼部落格嗎？會在上面更新東西嗎？</p> <p>受：有啦，都我大兒子在用，不然就上次都我女兒在用。有時候會用不然都沒用。</p> <p>受：我以前在做總幹事時，我會每天去給它看上面的那個網站，我現在沒做總幹事我就沒去看。現在都叫我兒子去用。</p> <p>訪：有人會在(平台)上面問說你這邊…？</p> <p>受：沒沒沒，都打電話。在網路上看到然後他打電話給我。如果你沒透過電話要來吃我也不讓他吃。</p>
A8 有互動平台但幾乎沒有在使用。 → Low	

Factor		Item		Definition / Evidence			
Dependent Variables		Performance		收入增加/顧客關係/商家關係			
A1	A2	A3	A4	A5	A6	A7	A8
Medium	Low	Low	High	Medium	Low	Low/Medium	Low
A1		<p>訪：有因為透過 Facebook 認識原本不認識的商家嗎？</p> <p>受：也是有啦不過基本上就是讚一下，留言這樣子。</p> <p>訪：所以其實商家之間的關係還不錯？</p> <p>受：有阿有阿，我們都是有在互動。</p> <p>訪：是透過什麼在販賣商品？</p> <p>受：現在在 Facebook 上有一個社團是專門在販賣的，做公益，所以我現在是希望有一個平台可以專門販售，因為 Facebook 一定要有帳號才能使用。</p>					
A1 透過 Facebook 與商家維持不錯的互動關係，並且利用此增加商品部分的銷售金額。 → Medium							
A2		<p>訪：接觸的客人廣泛嗎？</p> <p>受：有阿，外國的也有新加坡、大陸的。</p> <p>訪：會不會利用這樣的互動平台找到旅遊產業的新朋友？</p> <p>受：會阿會阿，會想阿，就要多認識阿。</p> <p>訪：會希望可以透過這樣互動？</p> <p>受：對，一定是要互動很好有交情人家才會跟你講深入一點，沒有交情</p>					

	沒人教，生意就會不好了阿。
A2 來訪消費的顧客相當廣泛，非常注重與其他商家的關係，希望可以從中學習到經營上的一些方法，但目前僅限於面對面。→Low	
A3	受：台北那邊都是從平台得到我們的資訊這樣，看到我們的產品，就打電話來問這樣，就有進貨試一下，阿不錯就繼續訂這樣。
A3 很少用資訊科技相關的東西，所以並沒有太大績效成長→Low	
A4	受：卡幄汀很大的優勢就在三、四年前部落格盛行的時候，我可以說累積下來了好幾百篇文章，那個就是幫我們背書，消費者一定會去做搜尋。 受：像我都會運用一些免費的資訊科技來行銷。 受：現在我的 FB 朋友有 900 多個，從 200 多個後我就沒主動加入了，一般的商家或是顧客我會評估一下，不是太商業行為的話我會同意加入他好友。 受：很多人會加我朋友，粉絲團我是沒經營，但其實這個互動是很不錯的，你不用很商業行為，但就會讓人覺得好想要再來。
A4 利用部落格和 FB 等免費的平台成功增加許多收入和降低了成本，同時也與商家和顧客建立了不錯的互動關係(非商業)。→High	
A5	受：偶而會跟附近的商家用 Facebook 互動，照片讚一下這樣。 訪：是否有認識其他地區的商家然後互動？ 受：其他的區有，像內城那邊有，我們有時會幫他按讚。 訪：透過這些資訊科技平台是否能夠有新的顧客來訪嗎？ 受：會，但覺得不多，因為現在各種平台太多了。 受：然後也有客人透過 Facebook，就是跟我說，因為他曾經問我說他們過年想要去哪一家餐廳吃，來宜蘭吃飯，我就推薦給他，然後他後來就透過 Facebook 跟我謝謝，因為那一家真的又好吃又便宜。
A5 利用這些平台並沒有增加太多的收入，但是認識了許多商家與顧客，互動性也相當良好，維持著不錯的關係。→Medium	
A6	訪：會不會用 Facebook 跟顧客或是商家互動？ 受：不會耶，就自己的朋友這樣。 受：跟其他家交流阿，比較不會。 受：不太善於在沒看到人的情況下去表達。 受：大部分還是網路看到來的客人啦。
A6 收入主要來自於網路或是朋友介紹，但其實也非常有限。對於顧客和商家的關係上少有互動或是交流，也沒有意願要認識更多商家。→Low	
A7	訪：您有透過像資訊平台或是 Facebook 因此認識原本不認識新的業者？ 受：其實 Facebook 該怎麼講，有的都是看共同朋友，對阿，如果共同朋友很多就會知道我是誰，因為我都是用假的名字阿。其實他可以透過誰誰誰這樣知道我是誰。

	受：例如說我們一些業者，你跟他還蠻好的，然後你又跟他是朋友，那我也知道我可能認識你，但可能沒交集，但可以試著加他看看。
A7 由於剛轉手尚未開始經營，所以跟顧客之間的關係還沒完全建立，而目前透過 Facebook 認識新的商家並與附近商家保持密切互動。→Low to Medium	
A8	訪：你有沒有覺得用網路那種比較多人來？ 受：我跟你說，我這邊人來都是看 DM，看什麼放牛吃草。 受：(商家間)都打電話啦，不然就叫客人直接跟他們聯絡。
A8 的都是靠實體的宣傳工具來增加銷售量，與顧客和商家的互動主要都是靠電話，並不會使用網路來聯絡。→Low	

