

Inter-Organizational Service Delivery in Chinese Hospital Industry: A Social Exchange Perspective

SHI Huibin^{[a],*}; LI Yuan^[b]

^[a]School of Economics and Management, Xidian University, Xi'an, China.

^[b]Antai College of Economics & Management, Shanghai Jiaotong University, Shanghai, China.

* Corresponding author.

Received 12 May 2014; accepted 20 July 2014

Published online 31 August 2014

Abstract

This article develops and tests a conceptual framework to shed light on relationship benefits and the inter-organizational patient referral process between Chinese hospitals. Based on a sample of 175 dyadic pairs of responses, the study empirically tests for reciprocal behaviors in inter-organizational service delivery process. Chinese hospitals can be divided into low and high level categories, and their benefits in the cooperation are different. The results indicated that performance improvement and knowledge acquisition as the benefits of low level hospitals positively influence their willingness of providing upstream patient referrals to their partner, and market development as the benefits of high level hospitals positively influences their willingness of providing downstream patient referrals to their partner. Thus, the realization of each party's benefits has a significant effect on the success of inter-organizational healthcare delivery. Some implications are provided for practitioners, academics, governments as well as the public.

Key words: Reciprocity; Knowledge acquisition; Inter-organization healthcare delivery; Market development; Patient referrals

Shi, H. B., & Li, Y. (2014). Inter-Organizational Service Delivery in Chinese Hospital Industry: A Social Exchange Perspective. *Canadian Social Science*, 10(6), 63-71. Available from: <http://www.cscanada.net/index.php/css/article/view/5468> DOI: <http://dx.doi.org/10.3968/5468>

INTRODUCTION

The provision of healthcare represents a patient-oriented system that typically involves service delivery from hospitals or physicians to patients (Li & Benton, 2003). In this respect, healthcare delivery can take place at the individual level - between physicians and patients, as well as at the organizational level - between hospitals and patients and inter-organizational level - between hospitals (Oliver & Montgomery, 1996). The provision of healthcare is the subject of growing academic and practitioner based research and healthcare service delivery on both individual level and organizational level has been extensively studied. For example, Safran et al. (1998) demonstrate that effective communication between physicians and patients can enhance the overall service delivery quality, and a host of academics report that when hospitals adopt a market orientated approach, they improve the quality of their service delivery (Tsai, 2013; Wood, Bhuian, & Kiecker, 2000).

Inter-organizational service delivery meanwhile is necessary in healthcare, as the nature of such service lends itself to effective networking (Klischewski & Wetzel, 2003). For example, enabling a comprehensive diagnostic, curative and care process when investigating and treating severe diseases requires close cooperation among specialized healthcare providers. Despite some contributions in this arena, a lack of clear understanding exists regarding inter-organizational healthcare delivery, and research in this area is scant. This lacuna is evident particularly in transitional economies such as China. Two limitations in the extant literature are present.

First, the basis for cooperation is that each exchange partner can realize benefits that outweigh those of the alternative non-cooperation. Resource - pragmatic needs, organizational legitimacy, and the probability of reducing transaction costs motivate service delivery collaboration

(Boonekamp, 1994). In fact, the benefit that one party obtains from cooperation should have an obvious positive effect on the exchange partner (Rodriguez & Wilson, 2002). Although some research revealed the dependence of mutual benefits of the cooperative partners from reciprocity perspective (e.g. Das & Teng, 2002), their analyses were based on enterprises and not hospitals. Further, very little empirical research addresses the issue of how the benefits of one party in the cooperation influence the benefits of another exchange partner. In order to realize the successful inter-organizational healthcare delivery, a thorough understanding of the goals (or benefits) of each provider and their mutual influence is needed.

Second, little research explores the subject in non-western societies - especially in emerging countries such as China. In China, the range and type of hospitals are somewhat diverse, and there are several categories of hospitals that exist which have different resources and capabilities to offer. While village clinics, township and county hospitals provide healthcare services in rural areas, community or enterprise, and city hospitals deliver healthcare in urban districts. This range of hospitals constitutes a multi-level healthcare system. County and city hospitals have relatively greater capability to cure severe diseases and provide service in more extensive regions and fall into the category of higher level hospitals (HLHs). The village clinics, township, and community or enterprise hospitals have lower capabilities - they only provide basic medical treatment in a specific area and under the Chinese healthcare system are low level hospitals (LLHs). The roles of Chinese different hospitals in the healthcare system were demonstrated in Figure 1.

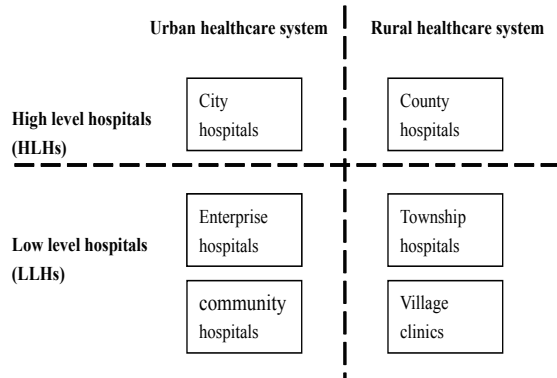


Figure 1
The Roles of Hospitals in Chinese Healthcare System

Chinese healthcare financing plans covered nearly 90 percent of china's population in 1975 (World Bank, 1997). Basic health services were readily available at low cost for most citizens in both rural and urban areas of China. At the same time, all hospitals in China were state-owned before economic reforms and received almost total financial support from government. With the Chinese economic reforms since 1980s, Chinese hospital industry also transited into a market-driven system. The consequences were that individuals finance most

healthcare costs out of their own pockets; government funding support to healthcare is drastically decreased and hospitals faced a large financial shortfall (Hesketh & Zhu, 1997), and both low and high level hospitals are more responsible for themselves survival and development.

The reforms had led some changes in hospitals' behaviors. (a) The hospitals have inevitably come to develop a heavy reliance on user fees to finance a large proportion of service delivery (Bloom & Gu, 1997). (b) The low and high level hospitals are more polarization. In the one hand, more investment in HLHs led to the discrepancy extended between HLHs and LLHs. On the other hand, aware that their health care is poorer in quality, rural residents with serious illnesses frequently bypass village clinics and township hospitals and present directly at a county or city hospital. (c) The self-financing regimes and governmental large funding regimes in the major cities led to severity competition between HLHs, and HLHs confronted intense competitive threats. At the same time, the ignorance of rural and community health system led to LLHs facing severe survival pressure.

Even though Chinese government had improved their healthcare insurance system and introduced some reforms on hospital management policies after 2003, hospitals' revenue is still haltingly based on fees-for-service and depends on the populations hospitals serve. Acquiring fee-paying patients is also crucial under the current Chinese healthcare system, and attracting profitable patients is the key challenge for all hospitals. Although LLHs in general are geographically close and can build friendly relationships with patients, the absence of facilities and key staff limits their service provision and ability to attract more patients. There is a need for enhancing capabilities and improving performance, so that LLHs can survive. Although HLHs are more technically superior in terms of their facilities and quality of physicians etc., they operate with high costs, and require a significant number of fee-paying patients to break-even or achieve a surplus. In terms of their long term development, HLHs are also facing challenging times, as they aim to attract more profitable patients through greater networking with LLHs in wider geographic regions of China.

In response, and in order to survive in China's new market-driven healthcare economy, most Chinese hospitals are looking to invest more on building stronger strategic links with other hospitals. Most of the cooperation happened between HLHs and LLHs, and the cooperation provides the chances for LLHs to relieve their survive problem and enhance their capability through knowledge acquisition and performance assistances and for HLHs to reinforce their competitive advantages through market development. At the same time, the inter-organizational healthcare delivery is finished through patient referrals between cooperative partners. In reviewing the literature there appears a dearth of research in the area of cooperative behavior among Chinese hospitals.

In drawing on the resource based view of the firm and social exchange theory, this research investigation builds a conceptual framework to help advance understanding of the subject and explain how different hospitals benefit from one another under the patient referral process in the Chinese context. The contribution of this research is thus threefold:

(a) Theoretically; we have displayed that successful cooperation depended the reciprocity in the cooperation and one party's benefits will heavily influence the benefits of other parties. The organization which wants to get more benefits from the cooperation also should consider the realization of its partner's benefits. In Chinese hospital industry, only hospital perform reciprocal behaviors, they can catch their goals in the cooperation, LLHs can relieve their survive problems through performance improvement based on the cooperation and enhance their capabilities through acquiring knowledge and HLHs can enhance their competitive advantages through market development. Successful inter-organizational healthcare service delivery (represented by patient referral process) will realize based on the sound cooperation between LLHs and HLHs.

Cooperative benefits provide an attainable goal for both partner hospitals. A successful patient referral process is therefore a key requirement that facilitates an effective inter-organizational healthcare delivery system in China.

(b) Empirically; drawing on a sample of 175 Chinese dyadic relationships (through personal interviews with hospital directors), the research illustrates the interdependence between cooperative benefits and their effect on the operation of inter-organizational service delivery.

(c) While much of the literature about the cooperation between hospitals focuses on western context (Entwistle & Quick, 2006; Oliver & Montgomery, 1996), our research which based on the biggest emerging economy, China, will provide some new insight about inter-organizational healthcare delivery in emerging countries. The findings also present some insightful understandings about how Chinese hospitals interact with one another to achieve success in terms of knowledge acquisition, performance assistance, and market development.

The structure of the manuscript is as follows: a review of the literature, conceptual development and hypotheses development, research method, empirical findings and a discussion and conclusion, including managerial implications and research limitations.

1. THEORETICAL BACKGROUND

Although economic models examine the nature of inter-organization cooperation, researchers argue that social exchange theory is useful for investigating cooperation (e. g. Das & Teng, 2002; Young-Ybarra & Wiersema, 1999).

According to such theory, social exchange maintains the scarcity of resources by prompting actors to engage with one another to obtain valuable inputs (Das & Teng, 2002). While the origins of social exchange are at the individual level, the theory is also relevant at organizational and inter-organizational levels, which divide according to various types of exchange relations (Jacobs, 1974; Levine & White, 1961).

Social exchange theorists hold that on-going cooperation allows parties to be better off and benefit from such joint activities (Cropanzano & Mitchell, 2005). According to social exchange theory, reciprocity is influential in understanding relationships between organizations (Gouldner, 1960; Stocking & Mueller, 1957). Reciprocity is useful for promoting business, as through applying mutual concessions, one party acts with the other's best interest (Stocking & Mueller, 1957). Reciprocity has powerful implications in many important economic domains (Fehr & Gächter, 2000).

Reciprocity represents the mutual reinforcement among two parties of each other's actions (Wade-Benzoni, 2002). In response to friendly actions, reciprocity leads people to become much nicer and more cooperative than acting in one's own self-interest. In contrast, and in response to hostile actions, people become much nastier – even brutal. Reciprocity consists of several different forms of exchange, ranging from 'negative' to "balanced" to "generalized" (Sahlins, 1972). Balanced reciprocity represents the focus of this research, where the equivalence and mutual interest between two exchange parties is apparent (Sparrowe & Liden, 1997). Balanced reciprocity contains two dimensions: (a) A value dimension consisting of the resource or economic nature of the exchange, and (b) a frequency dimension, relating to the movement back and forth of the exchange (Li & Rowley, 2000). The value balance in the relationship is central to partners' behaviors, and cooperative and stable exchanges are only possible if there is a balance in terms of value in the relationship (Axelrod, 1984; Keohane, 1986). Frequent balance is important for facilitating cooperation, as it provides a means for both parties to increase their commitment in the relationship through responding positively on their partner's previous actions (Li & Rowley, 2000).

As the basis for further discussion, the conceptual framework in Figure 2 outlines several hypotheses for testing. Acquiring knowledge and improving performance represent benefits for LLHs when cooperating with HLHs. Market development represents benefits for HLHs when cooperating with LLHs. Upstream and downstream patient referrals are vital in the inter-organizational service delivery process, and represent reciprocal behavior among LLHs and HLHs for their acquired benefits in the cooperation. The framework illustrates the relationships among benefits of LL and HL hospitals collaborative partners and patient referrals in the process of inter-organizational healthcare delivery process.

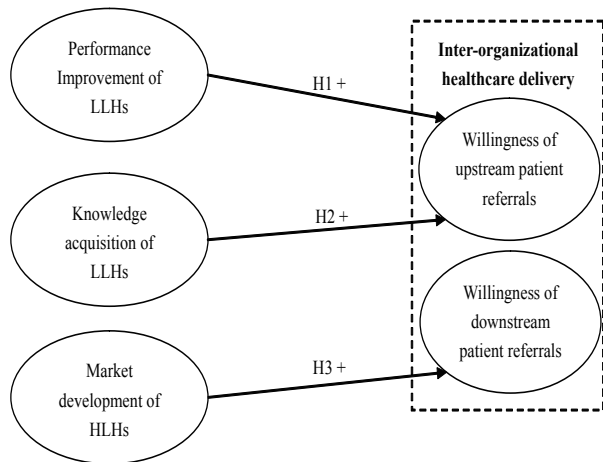


Figure 2
The Conceptual Framework

2. HYPOTHESES DEVELOPMENT

2.1 Reciprocity and Inter-Organization Healthcare Delivery

Given that inter-organizational service delivery involves long-term cooperation, reciprocity is therefore an important factor in this process. The willingness of hospitals referring appropriate patients to their partners is crucial for the success of inter-organizational healthcare delivery (Huckman, 2006; Nakamura, 2010). Thus, the implement of the inter-organizational healthcare delivery heavily depends on that LLHs are willing to provide upstream referral of patients to their partner HLHs and HLHs are willing to provide downstream referral of patients to their partner LLHs.

Besides to acquire referral of patients, hospitals in China also have other appeals (or benefits) in the cooperation under the process of inter-organizational healthcare delivery. Owing to insufficient internal capabilities and a lack of funding, LLHs endure more survival pressure than HLHs. In this case, LLHs seek to develop external relationships and networks, particularly with HLHs to enhance their capabilities and improve performance. During cooperation with HLHs, improving performance and acquiring knowledge are crucial for LLHs. HLHs face intensive competitive threats, and seek to enhance their market position by leveraging economies of scale advantages. An important cooperative objective for HLHs is to strength their market position through market development.

Then, we argue that LLHs' willingness of upstream referral of patients is their reciprocal behaviors to the results of their performance improvement and knowledge acquisition in the cooperation with HLHs, and HLHs' willingness of downstream referral of patients is also their reciprocal behaviors to the results of their market development in the cooperation with LLHs.

The reciprocity plays an important role in Chinese inter-organizational healthcare delivery process.

2.2 The Willingness of Upstream Patient Referrals

Research suggests that continuous cooperation positively influences firm performance through (a) sharing key resources (Collins & Hitt, 2006), (b) reducing a partner's risks (Glaister & Buckley, 1996), (c) meeting the demands of customers on time (Narasimhan & Nairb, 2005), and (d) increasing the efficiency of a partner's resources (Cegarra-Navarro, 2005). In China, HLHs often offer assistance to their partner LLHs via assigning doctors to work with them. They also joint brand – in order to enhance the reputation of LLHs and sometimes donate surplus to requirement medical equipment. Such support often has a direct effect on improving the financial position of LLHs, and helps relieve their short-term survival problems.

In organizational learning theory, each organization is a knowledge system, and acquiring and creating knowledge through inter-organizational learning is an influential source for obtaining competitive advantage (Grant, 1996). In the cooperation with HLHs, LLHs are able to obtain access to external knowledge and build on their existing competencies (Yli-Renko, Autio, & Tontti, 2002). LLHs also can efficiently improve their service through obtaining knowledge from their alliance partners (Grant & Baden-Fuller, 2004). Thus, Acquiring knowledge is helpful for enhancing the service quality and long-term survival capability of LLHs.

In acquiring knowledge, and improving performance in the form of collaborative assistance, it is important that LLHs nurture stable and cooperative relationships with their HLH partners. Reciprocity is a useful mechanism for enabling a cooperative and stable relationship. If reciprocal behavior of LLHs (i.e. the upstream referral of patients) helps in acquiring further knowledge and improving performance, then LLHs willingly provide patient referrals to their partner HLHs. In receiving patient referrals, HLHs may display reciprocal behavior through helping LLHs to enhance their capabilities and improve performance – with the view of receiving even more patients from them in the future. The cyclical process therefore stimulates referral behavior among LLHs.

H1: Performance improvement in the form of collaborative assistance positively influences LLHs' willingness of providing upstream patient referrals to partner HLHs.

H2: Acquiring knowledge from HLHs positively influences LLHs' willingness of providing upstream patient referrals to partner HLHs.

2.3 The Willingness of Downstream Patient Referrals

In strategic positioning theory, organizations' cooperation with others is motivated by desire to shape competition,

consolidate organizations' market position, and enter into new market (Glaister & Buckley, 1996). These motivations (or objectives) can be labeled as market development. In China, HLHs can maintain or strengthen their position in existing market, facilitate geographical expansion, and launch new healthcare services through the cooperation with LLHs. These strategic objectives are crucial for the success of HLHs which operates in a dynamic and competitive healthcare environment.

A durable and sound cooperation is needed for HLHs in order to implement the market development strategies by the cooperation with LLHs. Reciprocity mechanism is also helpful for maintaining a durable and sound cooperation. If reciprocal behavior of HLHs (i.e. the downstream referral of patients) helps in their market development, then HLHs willingly provide patient referrals to their partner LLHs. In receiving patient referrals, LLHs may display reciprocal behavior through helping HLHs to strengthen their strategic position by market development – with the view of receiving even more patients from them in the future. Thus, the reciprocity between HLHs' market development based on the cooperation with LLHs and downstream patient referrals to partners LLHs has been established.

H3: market development based on the cooperation with LLHs positively influences HLHs' willingness of providing downstream patient referrals to partners LLHs.

3. METHOD

3.1 Data and Sample

The data used to test the hypotheses were drawn from a cross-sectional survey of hospitals in Shaanxi, Henan, Shandong and Shanxi provinces of China. These four provinces were used because they have previously been selected by the Chinese government as experimental provinces to pilot a new healthcare reform policy based on creating a market driven system. The survey consisted of a multi-stage research process. First, the governmental health bureau in each province was asked to provide details of their five largest city hospitals. This sample of hospitals was used for the initial stage of the research, where key informants at each hospital were asked to talk about the nature of the collaborative relationship that they had with five of their most important cooperative hospitals. These cooperative hospitals which mainly consisted of county, enterprise and community hospitals then became a target for the second stage of the research process, and again key informants were asked to refer another three cooperative hospitals, and these were mainly township and village hospitals (these eventually became the target for the third research stage). Figure 2 illustrates the three stages of the research process. The process resembles a pyramid of interconnecting relationships that link the hospitals.

A survey instrument was developed based on constructs and items found in the management literature and previous healthcare research. The survey was undertaken on site, at each hospital. A team of three well trained academic researchers scheduled appointments to see two directors in each hospital to separate, independent times. The cooperation questions in the questionnaire were developed based on the paired dyad (to focus on the cooperative relationship between LL and HL hospitals).

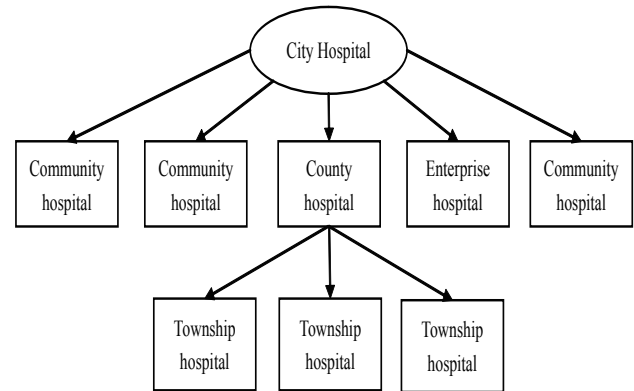


Figure 3
The Research Stages and Pyramid of Hospital Relationships

Primary research was undertaken over a three month period. Initially 250 hospitals were approached and asked to take part in the exercise. Of these, 216 were willing to participate, but a further 23 were ineligible as there are a lot of missing values to the questions – leaving 190 in total. In seeking dyadic data from the 190 collaborative hospitals, the cooperation between city and county hospitals were also excluded because they are both HLHs - leaving a grand total of 175 matched pair dyads that emphasize relationship collaboration among LL and HL hospitals.

One common concern when undertaking surveys is the issue of non-response bias. Non-response bias was assessed here by comparing respondent against non-respondent hospitals on demographics including hospital beds (an indicator of hospital size) and hospital location. After comparing the data (non-significant) – non-response bias does not appear to be an issue with this data.

Another concern in survey research is that a single respondent may answer all the questions in a consistent manner that can result in common methods bias. In order to minimize for this effect – two directors from each hospital were asked to take part in the study. Dependent variable measures were taken from one of the questionnaires, whilst the independent variable data were taken from the other questionnaire. This method avoids problems of retrospective bias which is increasingly common with some survey techniques (Hitt, Ahlstrom, Dacin, Levitas, & Svobodina, 2004).

3.2 Constructs and Measurement

All items relating to constructs in the model were measured by 5-point Likert scales ranging from ‘strongly disagree’ to ‘strongly agree’. Where feasible, measures were taken from existing scales based on the pertinent literature - outlined as follows. Where certain measurement instruments were modified to reflect the specific context of the study, the method advised by Churchill (1979) was followed.

Performance improvement - based on cooperation: The respondents of LHLs were requested to assess performance in terms of their overall satisfaction with the degree of cooperation in the relationship, or specifically in terms of the extent to which the cooperation had met its stated objectives. In referring to the research of Geringer and Herbert (1991) and Kumar and Nti (1998), performance improvement via the cooperation from HLHs is measured by four indicators. Through cooperation we have (a) strengthened our core business, (b) enlarged our service scope, (c) increased our business income and (d) improved our service quality.

Knowledge acquisition: Using the measurement instrument of Shenkar and Li (1999) and Gupta and Govindarajan (2000), the battery of items was adjusted in order to fit in with the context of the research. Four indicator measures focus on LLHs acquiring knowledge from their HLHs partners. Through cooperation we have gained (a) diagnostic knowledge and skills from our partner, (b) the knowledge and skills to develop new products or services from our partner, (c) management

knowledge and skills from our partner, and (d) operational knowledge and skills from our partner.

Market development: The cooperation with LLHs can help HLHs to maintain existing market and develop new market. In referring to the research of Glaister and Buckley (1996), market development based on the cooperation with LLHs is measured by four indicators. The cooperation is useful in (a) maintaining position in existing market, (b) competing against our competitors, (c) implementing geographical expansion, (d) entering into new market.

Willingness of patient referrals: The willingness of upstream patient referrals from LL to HL hospitals and the willingness of downstream patient referrals from HL to LL hospitals both are measured used a 5-point Likert indicator and responded by the managers of LL and HLHs respectively.

Control variables: Hospital size represents a control variable in the study. The number of beds is an indication of hospital size, and has a direct relationship with the service choice decision (Li & Benton, 2006). We measured hospital size as the log-transformed number of bed size.

4. RESULT ANALYSIS

The descriptive statistics and correlations for all the variables in the study are present in Table 1. Most of the correlations are low to moderate. The values of the VIFs are all below 10 signaling that multi-collinearity is not a problem in this study (Hair, Anderson, Tatham, & Black, 1998).

Table 1
The Descriptive Statistics and Correlations

Variables	Mean	S.D.	1	2	3	4	5	6	7
1) Performance improvement	4.033	0.705	1						
2) Knowledge acquisition	3.875	0.817	.546**	1					
3) Willingness of upstream referral	4.094	0.829	.344**	.309**	1				
4) Hospital size of LLHs	3.475	1.047	-.085	-.118	-.011	1			
5) Market development	3.775	0.703	-.079	.021	.003	-.191*	1		
6) Willingness of downstream referral	3.765	1.069	.004	.142	.003	-.287**	.604**	1	
7) Hospital size of HLHs	5.415	0.988	-.065	-.145	-.063	.504**	-.095	-.171*	1

Note. Significance level: * $p < 0.05$; ** $p < 0.01$

4.1 Reliability Analysis

Composite reliability assesses the inter-item consistency for each construct. Typically, reliability coefficients in excess of 0.70 provide adequate composite reliability (internal consistency) for each construct (Cronbach, 1951). The Cronbach’s alpha values (see Table 2) for all the constructs are greater than 0.7, suggesting the items are useful for measuring the constructs and show good internal reliability.

4.2 Construct Validity

Construct validity is the extent to which the items on a scale measure the abstract or theoretical construct

(Chandler, 1991; Churchill, 1979). Testing of construct validity concentrates not only on determining whether an item has significant loading on the factor it is measuring (i.e., convergent validity), but also ensuring that it measures no other factors (i.e., discriminant validity) (Campbell & Fiske, 1959). Convergent validity is useful for demonstrating the statistical significance of loadings at a given alpha (e.g., $p < 0.05$). A loading of 0.7 indicates that about one-half of the item’s variance (the squared loading) is attributable to a particular construct (Fornell & Larcker, 1981).

Loading values for each of the items is in excess of 0.6 (see Table 2), with the majority having a factor

loading of > 0.8 - implying the statistical significance of the relationship between the items/constructs and reliability of the individual items. All the estimates for AVE are

greater than 0.50 (Bagozzi & Yi, 1988) and the square of the inter-correlations between two constructs are less than the AVE estimates of the two - thus demonstrating sound discriminant validity (Fornell & Larcker, 1981)

Table 2
Convergence and Validity of Constructs

Constructs and scale items	Factor loadings
Performance improvement ($\alpha = .903$, AVE = 0.776, GFI=0.954, NFI=0.966, TLI=0.908, CFI=0.969)	
1. the cooperation has strengthened our core business;	.878
2. the cooperation has enlarged our service scope;	.922
3. the cooperation has increased our business income;	.869
4. the cooperation has improved our service quality.	.853
Knowledge acquisition ($\alpha = .873$, AVE = 0.73, GFI=0.987, NFI=0.989, TLI=0.981, CFI=0.994)	
1. diagnostic knowledge and skills from our partner;	.756
2. the knowledge and skills to develop new products or services from our partner;	.887
3. management knowledge and skills from our partner;	.851
4. operational knowledge and skills from our partner.	.911
Market development ($\alpha = .759$, AVE = 0.583, GFI=0.958, NFI=0.917, TLI=0.788, CFI=0.926)	
1. maintaining position in existing market	.682
2. competing against our competitors	.816
3. implementing geographical expansion	.775
4. entering into new market	.776
Willingness of downstream Referrals	
We are willing to refer appropriate patients to our partner	-
Willingness of downstream Referrals	
We are willing to refer appropriate patients to our partner	-
Hospital size	
The log of the number of hospital beds size	-

4.3 Hypothesis Testing

Table 3 and Table 4 present the results of the regression analysis relating to the conceptual framework. The analysis of Table 3 is about the benefits and behaviors of LLHs in the cooperation with HLHs. The control variables appear in Model 1, with knowledge acquisition and performance improvement added in Model 2. From Model 2 in Table 3, both knowledge acquisition and performance improvement have a positive effect on the willingness of upstream patient referrals (.175, $p < 0.05$; .251, $p < 0.01$) in support of hypotheses H1 and H2.

Table 3
Results of the Regression Among Performance Improvement, Knowledge Acquisition, and Willingness of Upstream Patient Referrals (N=175)

	Model 1	Model 2
Controls		
Hospital size	-.011	.031
Predictors		
Knowledge acquisition (KA)		.251***
Performance improvement (PI)		.175**
R square	.011	.140
Adjusted R Square	.006	.125
F-test	.021	9.278**

Note. Significance level: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

The analysis of Table 4 is about the benefits and behaviors of HLHs in the cooperation with LLHs. The control variables appear in Model 1, with market development added in Model 2. From Model 2 in Table

4, market development has a positive effect on the willingness of downstream patient referrals (.593, $p < 0.01$) in support of hypothesis H3.

Table 4
Results of the Regression Between Market Development and Willingness of Downstream Patient Referrals (N=175)

	Model 1	Model 2
Controls		
Hospital size	-.171**	-.115*
Predictors		
Market development (MD)		.593***
R square	.171	.378
Adjusted R square	.029	.371
F-test	5.220**	52.327***

Note. Significance level: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

DISCUSSION AND CONCLUSION

In considering this study in the Chinese context, the research makes a contribution by extending the literature in terms of service delivery and collaboration between hospitals. The present study emphasized a critical question: What leads to sustainable cooperation in inter-organizational healthcare delivery process? Through examining relationships between each party's benefits in the cooperation from a social exchange perspective, following theoretical and empirical contributions emerge.

Theoretically, we address the problem by articulating a view that Chinese hospitals cooperation mainly happened between different level hospitals (e.g. LLHs and HLHs), and they have different benefits in the cooperation. These hospitals emphasize on resources sharing, knowledge acquisition and market development in cooperation in a rapid changing market-driven healthcare market. Further, the success of inter-organizational healthcare delivery (or the upstream and downstream patient referrals) and the realization of each party's benefits will depend on mutual reciprocal behaviors and the realization of the other party's benefits.

At the empirical level, acquiring knowledge, and improving the performance in LLHs both have positive effects on the willingness of upstream patient referrals LLHs provide to their partner HLHs. Moreover, market development in HLHs has positive effect on the willingness of downstream patient referrals HLHs provide to their partner LHLs. These findings clearly demonstrate that, based on the realization of their strategic goals, both LL and HL hospitals have an incentive to build stable and cooperative relationships with one another. The benefits for each exchange party are dependent on the other's cooperation, providing corroboratory evidence - albeit in a somewhat different context to support research by Palmer (2002) and Wade-Benzoni (2002) confirming the reciprocal nature and benefits that cooperation offers. The research provides evidence to suggest that improving performance and acquiring knowledge are important attributes for LL hospitals. Market development meanwhile is of important value for HLHs, and when combined, these attributes play a significant role in facilitating cooperation and inter-organizational healthcare delivery in a Chinese inter-organizational healthcare context.

A. Managerial Implications. Some important implications for managerial practitioners follow from the results of this investigation. The results confirm that both performance improvement of LLHs and their knowledge acquisition from partner HLHs have a positive influence on the upstream patient referral process, and market development of HLHs has a positive effect on the downstream patient referral process. Thus, hospitals should realize and consider the importance of the benefits that cooperation can bring. Based on such complimenting benefits, both Chinese LL and HL hospitals need to focus more attention on reciprocation and collaborative exchange to provide the type of benefits which can serve to nurture effective business relations over the mid to long-term.

B. Limitations and Future Research Directions. Despite making an incremental contribution to the body of knowledge surrounding the research area, the investigation succumbs to several weaknesses which need acknowledging. First, this study focuses on the cooperation between hospitals in the inter-organizational healthcare delivery process. In fact, hospitals may need not only to cooperate with their suppliers, but also with

other hospitals in order to finish the healthcare delivery process. Future studies should therefore examine the effects of the relationships with such parties that provide healthcare service provision in the inter-organizational healthcare delivery process.

Second, the cross-sectional research design in this study discounts any causal statements that may be apparent in such business relationships. A longitudinal approach would therefore be useful in future investigations. Finally, the results of this study are context specific. Geographically, limiting the study to China, and not considering cross-country differences is an obvious limitation. More research needs to focus on the area, and not only in developing nations such as China, India and areas of South America etc, but the model also needs testing in western economies such as North America, Europe and Japan that strive to develop state of the art healthcare systems. This avenue of investigation presents a fertile area of research which has clear implications for practitioners, academics, governments as well as the public at large.

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