



Linking Resource-Based Strategies to Customer-Focused Performance for Professional Services: A Structural Equation Modelling Approach

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This paper links professional service firms' resource-based strategies to their customer-focused performance for formulating service quality improvement priorities. The research applies the structural equation modelling approach to survey data from Hong Kong construction consultants to test some hypotheses. The study validates the various measures of firms' resource-based strategies and customer-focused performance and bridges the gaps in firms' organizational learning, core competences and customer-focused performance mediated by their strategic flexibility. The research results have practical implications for professional service firms to deploy resources appropriately to first enhance different competences and then improve customer-focused performance using their different competences.

Keywords: organizational learning; core competences; strategic flexibility; customer satisfaction; structural equation model; professional services

Introduction

Worldwide developed economies have been dominated by services for decades, and Hong Kong is not an exception. However, Hong Kong is also well known for its energetic real estate market and the related construction industry, evidenced by the high density of well-functioned commercial and residential buildings. In fact, of Hong Kong's limited non-service sectors, construction industry has been a major business with a share of about 35 percent in recent years.

In the construction industry, the consulting part of a project is traditionally awarded to an outsourcing consultant (architect, surveyor, etc.) who can complete it with the minimum tendering price, and commission for the consultant's professional services is agreed on a mandatory fee scale based on a certain percentage of the project's construction cost (Carr, 1982). As recent as late 1990s, the Hong Kong Housing Authority still engaged construction consultants for their housing projects based on the mandatory fee

scale. However, competitive fee tendering is rapidly gaining popularity in the construction industry as a mechanism for distributing consultancy projects to willing professional service providers, and the awarding decision is based on the consultants' tendering fees and quality scores assessed from their technical submissions by the clients (i.e., government agencies or private firms). For example, a study by Drew, Li, and Shen (2000) identified that 89 percent of quantity surveying consultancy projects in Hong Kong is allocated through the competitive fee tendering mechanism.

The special feature of the competitive fee tendering system, as compared to the traditional price bidding, is its use of a quality score in addition to the fee score in evaluating professional service providers' submissions. It is therefore important for professional consultants in the construction industry to measure and improve their service quality. However, service quality, although often 'created' by the service provider, is eventually perceived by the customers. Just as Drucker (1973) noted four decades ago, business success is not determined by the provider, but by the customer and the customer-focused dimension should be the priority of managerial attention. In today's turbulent environment, customers are playing an even more important role in business competition and, accordingly, customer-focused performance represents a decisive source of firms' competitive advantage. Taking the competitive fee tendering system for example, superior client-perceived consulting quality can help a construction consultant submit relatively higher bidding prices, while still maintaining his overall competitiveness, for higher and long-term profits.

Although customer-focused performance is important, it can only be achieved by translating into measures or actions of what a firm should do to meet customers' requirements. However, there have been few studies effectively addressing the linkage between customer-focused performance and firms' operational or resource-based strategies. Noticeable exceptions are the recent works of Wang and Lo (2003, 2004) who identify the key components and resource-based determinants of customer-focused performance and propose a conceptual framework of cause-effect paths to link firm's resource-based strategies to customer-focused performance. This provides a meaningful approach for construction consultants to identify measures, antecedents, and consequences of their client- or customer-focused service quality for successfully bidding in the competitive fee tendering system.

The current study aims to apply the conceptual framework of Wang and Lo (2003, 2004) to construction consulting services in Hong Kong. It was originated from a Hong Kong government-funded project to model competitive fee tendering in the local construction industry. An important objective of the project was to examine how service quality and customer satisfaction are linked to the strategies and core competences of professional

consultants, so as to help them formulate service quality improvement priorities and develop appropriate bidding strategies. For that purpose, this paper first reviews the conceptual framework with developed detail constructs and proposed relationships. Then sampling method, measurement scales and survey data are described and the structural equation modelling (SEM) results are analysed, such as validating the measures and testing the SEM's goodness-of-fit and the expected relationships. Detail discussions of the modelling results are presented next, which reveal a number of relationships unique to knowledge-intensive services, such as professional consulting in this study. Finally, concluding remarks are provided, including managerial implications for service firms in general, and construction consultants in particular, to improve their customer-focused performance, as well as limitations of the current research and suggestions for future studies.

The Conceptual Framework

This section will present a conceptual framework to link a firm's resource-based strategies to its customer-focused performance based on literature review with a number of research hypotheses implicitly proposed. Resource-based strategies include organizational learning, core competences and strategic flexibility, while customer-focused performance is composed of customer-perceived service quality and value, as well as customer satisfaction.

Key Components of Customer-Focused Performance

As widely accepted in the marketing literature (Chan et al., 2003; Fornell, Johnson, Anderson, Cha, & Bryant, 1996), especially due to their direct relations to customer's purchasing decisions, customer-perceived service quality, customer-perceived service value, and customer satisfaction can be regarded as the three comprehensive and effective dimensions of customer-focused performance. It is noticed that the three dimensions of customer-focused performance interact positively with one another. For example, Oliver (1993) suggests that service quality should be antecedent to customer satisfaction, and Fornell et al. (1996) further identify customer-perceived value as another key driver of customer satisfaction. It is also evident that enhanced service quality should increase service value (Chan et al., 2003; Fornell et al., 1996).

Resource-Based Determinants of Customer-Focused Performance

Superior customer-focused performance can only be achieved through a firm's resource-based strategies, which interact with one another and are combined to lay a solid foundation for the firm's distinctive competences.

The resource-based view allows each strategy or action to be referenced to the delivery of quality services of high value, which in turn lead to the satisfaction of customer requirements (Chmielewski & Paladino, 2007). The firm must build and upgrade its own competences through organizational learning and strategic flexibility to help identify business trends, track customer-focused performance, and facilitate quick market response (Akroush, 2012).

Core competences can be viewed as firm-specific skills and cognitive traits directed towards the attainment of higher customer satisfaction in comparison with the competitors (Hamel & Heene, 1994). These competences can be leveraged directly to satisfy the existing customer needs or indirectly to develop a range of core services, based on which a stream of final services of higher quality and value is delivered. According to the intensive literature reviews by Bani-Hani and AlHawary (2009) and Wang and Lo (2003, 2004), two distinct types of core competences can be identified: *marketing competence* that determines the target customers and market demand of the firm's service offerings, and *technological competence* that determines the offerings' technical contents. This is in line with the three components of dynamic capabilities, a similar concept to core competences, as summarized by Wang and Ahmed (2007): adaptive capability, absorptive capability, and innovative capability. Largely, marketing competence corresponds to adaptive capability, and technological competence relates to absorptive capability and innovative capability.

Integrative competence, although suggested by Wang and Lo (2003, 2004) as another type of core competences, is roughly a combination of marketing and technological competences and hence will not be included in this study for simplicity. It is expected that a firm's core competences positively affect its customer-perceived quality and value, which in turn help the firm achieve higher customer satisfaction (Wang & Ahmed, 2007; Wang & Lo, 2003, 2004).

Strategic flexibility is the ability of a firm to respond to the changes in the environment in a timely and appropriate manner with due regard to the competitive forces in the marketplace (Golden & Powel, 2000; Shimizu & Hitt, 2004). In modern economy, strategic, organizational, and marketing variables have to be adapted for the firms to be efficient (Milgrom & Roberts, 1995). As Kak (2004) argues, no matter how you understand the sources or contents of strategic flexibility, core competences of a firm always exert great influence on its strategic flexibility. For example, a firm's marketing competence determines its speed and cost to detect any changes in the customer requirements or market demand, and its technological competence enables its provision of technologically new services to respond to the market changes. That is, a firm's core competences constitute the ma-

jour sources of its strategic flexibility and determine the level of its strategic flexibility to a great extent.

It is also appropriate to assume positive impacts of a firm's strategic flexibility on its customer-focused performance (Matthyssens, Pauwels, & Vandenbempt, 2005). Hence it can be expected that a firm's strategic flexibility mediates the impacts of its core competences on customer-focused performance. Just as Wang and Ahmed (2007) propose, firm's capabilities or competences are 'more likely to lead to better firm performance when particular capabilities are developed in line with the firm's strategic choice.' This sounds appealing, since a firm's strategic flexibility may be more directly felt by customers than its competences, which are built by the firm in a longer process.

Organizational Learning. Addressed by Cyert & March (1963) over 50 years ago as a process by which organizations learn through interaction with their environments, organizational learning acts as an important antecedent of organizational competences (Murray & Donegan, 2003; Hung, Yang, Lien, McLean, & Kuo, 2010). That is, firms must learn in practice how to acquire, generate or explore as well as how to access, apply or exploit relevant knowledge effectively and efficiently to remain competitive and upgrade their core competences (Grant & Baden-Fuller, 2004; Kang, Morris, & Snell, 2007). As performed in Wang and Lo (2003, 2004), this empirical study will measure and test organizational learning in a narrower sense of learning orientation with three dimensions of straightforward meanings: *commitment to learning*, *shared vision*, and *open-mindedness*. Indeed, as Kang et al. (2007) and Murray and Donegan (2003) argue, it is the learning environment, orientation or culture that fundamentally determines a firm's learning propensity and process, and hence its competence upgrading and leveraging process.

All of the above expected relationships between the research constructs lead to a path model as shown in Figure 1, which, after detail measures for each construct are developed, forms a typical structural equation model (SEM).

Sampling, Measurements and Data

Sampling Population

This study aims to examine how service quality and customer/client satisfaction are related to the strategies and core competences of the outsourcing consultants in the Hong Kong construction industry, which generally requires data from two sources. On one hand, data from different construction consultancy firms are needed to test the interactive relationships among firms' key resource-based strategies. On the other hand, data from different customers are needed to test the interactive relationships among

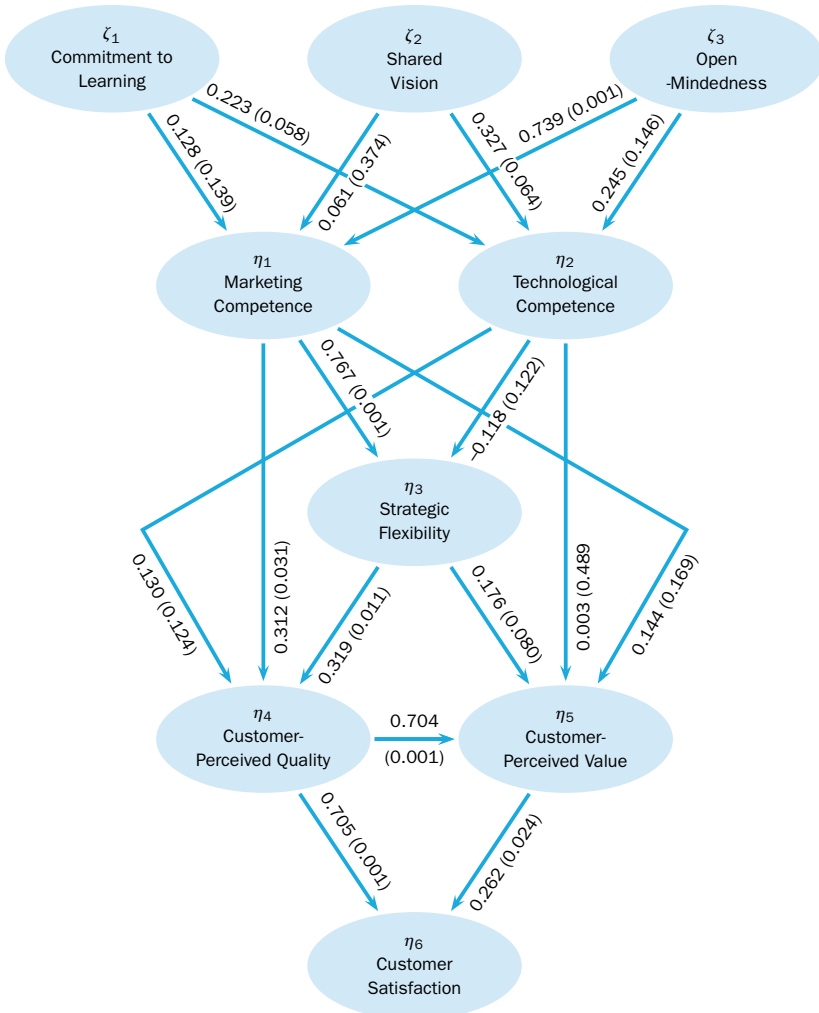


Figure 1 The conceptual model and estimated standardised path coefficients with one-tail p-values (in brackets)

the key components of customer-focused performance. More importantly, all of the surveyed customers should be the customers of the surveyed firms in order to link and test the relationships between the two parts, i.e., firm’s resource-based strategies and customer-focused performance.

Ideally, the sampling procedure would be to first survey a number of consultancy firms in order to get their self-evaluated resource-based performance data, and then to interview a sufficient number of the customers for each firm, whose responses are averaged to get a set of customer-

focused performance data for the particular firm. A firm's resource-based performance data and its corresponding customer-focused performance data make up a complete data point or observation. For each firm, tens of, if not hundreds of, its customers should be successfully surveyed to make the customer-focused performance data representative and reliable.

In doing so, thousands of customers should be clearly identified and successfully surveyed. This can only be done with full involvement of each firm and is a heavy burden for the study. To be simple, customer-focused performance data were collected indirectly from the firms surveyed and not directly from the firms' customers, i.e. only firms were surveyed. Each surveyed firm not only supplied a set of its resource-based performance data as usual, but also provided a set of its customer-focused performance data as perceived by the firm itself, not by its customers as done in some similar studies (Salomann, Dous, Kolbe, & Brenner 2005; Nasution & Mavondo, 2008).

It is felt that professional service firms included in our study should understand the quality of their services in general and the perceptions of their customers in particular. Hence, the obtained customer-focused performance data, although potentially over- or under-estimated, could be viewed as an initial alternative in this exploratory study for the sake of simplicity and cost-saving. Otherwise, similar to many empirical studies that are primarily related to firms' resource-based strategies (Murray & Donegan, 2003; Hung et al., 2010) or their customer-focused performance (Fink, James, Hatten, & Bakstran, 2008; Hall, 2007), it is operationally and financially difficult for this research to link the two important parts. Furthermore, due to their professionalism or ethics standards, these consulting firms are also less likely to over-estimate their customers' evaluations. In case of possible over-estimations it should be noted that if all firms over-estimate their customers' perceptions in the same manner, the directions and significance levels of the links from resource-based strategies to customer-focused performance would be the same as using actual customer perceptions in a linear model as in this paper, which provides additional support for our simplified approach.

Measurement Scales

The current research developed the measurement scales according to the key ideas suggested by Churchill (1979), i.e. first mapping out the domain of each construct and then establishing the scale items to represent the domain. The first issue of specifying the domains of the constructs in this study has been addressed above where the components of customer-focused performance and its key resource-based determinants have been appropriately defined. As for the second issue, multi-item measures are

strongly recommended to represent the domain of a construct to reduce the measurement errors or increase the measurement reliability. Actually, the use of multi-item measures is almost a must for a well-developed survey instrument in practice.

Hence, a multi-item approach was adopted in this study with each construct measured by several items to capture its domain reliably. In particular, resource-based strategies were directly evaluated by the firms according to their actual performance, and customer-focused performance was indirectly evaluated by the surveyed firms in relation to their established goals, their major rivals in the marketplace, and their customers' desires in certain areas (Beard & Dess, 1981). Based on the previous discussions, and especially on the reviews and suggestions of Wang and Lo (2003, 2004), multiple measurement items were developed to reflect each of the three customer-focused performance constructs and the six resource-based strategies constructs as shown in Table 1.

Each measurement item in Table 1 corresponded to a survey question, which was answered using the popular 7-point Likert scale. For example, the third survey question for the *commitment to learning* construct (denoted as x_{13}) was: 'Learning in our firm is seen as a key to organizational survival.' Respondents were asked to show, from 'strongly disagree' (coded as 1) to 'strongly agree' (coded as 7), their degrees of agreement with this positive statement for the measurement item.

Survey and Data

Based on the above-proposed measurement scales, a questionnaire was developed and mailed with a cover letter to a population of 355 Hong Kong construction consultancy firms. These firms provided construction consulting services in architecture, building surveying, etc. to local developers, contractors, private clients and government departments. The names, addresses and persons in charge of these consulting firms were obtained from local business trade directories and professional societies and associations. Finally, 122 firms returned usable questionnaires, representing a quite high response rate of 34.4 percent as compared to many similar surveys (Salomann et al., 2005; Velcu, 2010). The corresponding data formed the basis for this study, which, due to the high response rate, can be viewed well representative of the professional consultants in the Hong Kong construction industry.

Among the 122 construction consulting firms successfully surveyed, 45.9 percent were smaller with no more than 50 employees while 41.8 percent were relatively large with more than 200 employees, and 83.6 percent had offered construction consulting services for more than 10 years. In particular, 88.5 percent of the surveyed firms used the competitive fee tendering system, of which 65.7 percent and 19.4 percent had positive and

Table 1 Constructs, Survey Items, Reliability Measures, and R-Squares

Constructs (ζ_i, η_j), survey items (x_{ik}, y_{jn}), reliability measures and R-squares (R^2)	SFL
ζ_1 Commitment to Learning (AVE = 0.770, Cronbach's α = 0.903)	
x_{11} The basic values of our firm include learning and knowledge sharing as keys to improvement.	0.796
x_{12} Our firm sees 'employee learning' an investment, not an expense.	0.927
x_{13} Learning in our firm is seen as a key to organizational survival.	0.904
ζ_2 Shared Vision (AVE = 0.768, Cronbach's α = 0.907)	
x_{21} There is a common goal in our firm (for example, to provide clients with quality service).	0.831
x_{22} There is total agreement on our firm's vision across all levels, functions and divisions.	0.873
x_{23} All employees are committed to the goals of our firm.	0.923
ζ_3 Open-Mindedness (AVE = 0.601, Cronbach's α = 0.810)	
x_{31} We are not afraid to review critically the assumptions we have made about our clients.	0.877
x_{32} Colleagues realize that they must continually review and discuss the way they perceive the market, in terms of the opportunities and threats in the competitive market environment.	0.780
x_{33} We often collectively question the way we interpret clients' information.	0.653
η_1 Marketing Competence (AVE = 0.568, Cronbach's α = 0.835, R^2 = 0.801)	
y_{11} Our capability in obtaining real time information about changes of clients' needs is very strong.	0.728
y_{12} Our capability in communicating with clients about their potential and current demands is very strong.	0.816
y_{13} We have strong capability in benchmarking our services to our major competitors.	0.729
y_{14} We have strong capability of managing effectively long-term, close relationships with clients.	0.737
η_2 Technological Competence (AVE = 0.507, Cronbach's α = 0.780, R^2 = 0.550)	
y_{21} Our firm always makes relatively heavy investment in R&D activities.	0.585
y_{22} We have accumulated a broad spectrum of strong professional knowledge and skills.	0.665
y_{23} We are skillful in applying new technology, knowledge or practice to problem-solving.	0.854
y_{24} We always lead the innovation of technology or practice in the construction industry.	0.717

Continued on the next page

natural assessments of the system respectively, demonstrating the popularity and effectiveness of the new project bidding system.

Modelling Results and Analyses

The covariance-based SEM approach was used to estimate and evaluate the proposed model using the Amos package and the survey data. Following the two steps recommended by Anderson and Gerbing (1988), the various mea-

Table 1 *Continued from the previous page*

Constructs (ζ_i, η_j), survey items (x_{ik}, y_{jn}), reliability measures and R-squares (R^2)	SFL
η_3 Strategic Flexibility (AVE = 0.624, Cronbach's $\alpha = 0.889, R^2 = 0.591$)	
y_{31} We have strong capability to redirect the strategic positioning of our services quickly and effectively.	0.793
y_{32} We have strong capability to respond quickly to the actions taken by our competitors.	0.822
y_{33} We have strong capability to respond quickly to rapidly changing clients' needs.	0.829
y_{34} We have strong capability to redeploy strategic resources quickly according to environmental changes.	0.791
y_{35} Strategic resources in our firm can be used in many different areas.	0.709
η_4 Customer-Perceived Quality (AVE = 0.833, Cronbach's $\alpha = 0.936, R^2 = 0.464$)	
y_{41} Our clients always get services of high quality from our firm.	0.866
y_{42} Our clients consider the quality of our services good.	0.918
y_{43} Our clients are confident of the quality of our services.	0.952
η_5 Customer-Perceived Value (AVE = 0.582, Cronbach's $\alpha = 0.775, R^2 = 0.760$)	
y_{51} Overall, our services are value for money.	0.799
y_{52} Considering expenses and quality they get, clients believe that it is a right decision to use our services.	0.848
y_{53} Our firm always tries to reduce the time and effort clients have to spend in the process of obtaining and consuming our services.	0.624
η_6 Customer Satisfaction (AVE = 0.684, Cronbach's $\alpha = 0.865, R^2 = 0.878$)	
y_{61} Our firm can provide services that meet client's expectation.	0.775
y_{62} Comparing with the desirable level, our services always make clients satisfied.	0.894
y_{63} Taking the major competitors' services into consideration, clients are very pleased with us.	0.808

Notes SFL – standardized factor loadings.

asures were first validated and then the proposed hypotheses or structural relationships were tested.

Validating the Measures

To validate the measures of the constructs, the proposed model was first estimated with all paths deleted, but all constructs assumed to be correlated to each other. The estimated reliability results are summarized in Table 1. It can be seen that, firstly, the Cronbach's coefficient α of each construct is greater than the conventional threshold of 0.700, with a maximum of 0.936 for customer-perceived quality. This demonstrates each construct's composite reliability for internal consistency.

Secondly, the standardized factor loadings for all but one measurement items are above the conventional cut-off of 0.6. In fact, among all of the 31 measurement items, 27 have factor loadings greater than 0.7. It is also

noticed that all factor loadings are highly significant ($p < 0.001$), showing strong evidence of convergent validity of the measures. At the same time, the average variance extracted (AVE) of each construct in the model is more than 50 percent, with a maximum of 83.3 percent for customer-perceived quality, guaranteeing that more valid variance than error is explained for each construct (Fornell & Larcker, 1981).

Thirdly, the constructs should also show high discriminant validity which, according to Fornell and Larcker (1981), can be demonstrated if the square root of AVE of each construct is higher than the correlation coefficients between it and any other constructs in the model. Most AVEs and correlations from the modelling results meet this criterion, largely showing that the constructs are both conceptually and empirically distinct from each other.

Evaluating the Model's Fit

The full model estimation results provide various measures to evaluate the model's goodness-of-fit. Firstly, the estimated covariances and variances of the model's three exogenous organizational learning constructs, i.e. commitment to learning, shared vision, and open-mindedness, are highly significant ($p < 0.001$). The estimated variances for the regression errors of the model's six endogenous constructs are also highly significant ($p < 0.01$). These provide a good basis for correctly estimating the model.

Secondly, *R*-square (R^2) for the regression equation to predict each of the model's six endogenous constructs is from 0.464 to 0.878 as shown in Table 1, quite high as compared to many SEM studies. This indicates a strong predictive power of the proposed model.

Thirdly, although the estimation results show a significant chi-square ($R^2 = 748.47$, $df = 414$, $p < 0.001$), other overall fit indexes are relatively satisfactory given the smaller sample size in this study. Especially, the model has a low χ^2/df of 1.808, a reasonably high non-normed fit index of 0.874 and comparative fit index of 0.888, and a reasonably low root mean square error of approximation of 0.082. These suggest an acceptably good fit of the model to the data, providing a reliability support for testing the cause-effect relationships between the model's constructs.

Testing the Expected Impacts

The estimated standardized regression coefficient (*b*) for each path of the model and the associated one-tail *p*-value are shown in Figure 1, which can be used to test the expected impacts. It is noticed that the impact of technological competence on strategic flexibility and shared vision on marketing competence is highly insignificant ($p > 0.30$) and cannot be verified. Also, the impact of marketing competence on customer-perceived value, open-mindedness on technological competence, commitment to learning on mar-

keting competence, technological competence on customer-perceived quality and value is insignificant at the $p < 0.10$ level, although four of them are positive as expected.

Other expected impacts can be verified with significantly ($p < 0.10$) positive path coefficients, including the impact of commitment to learning and shared vision on technological competence and strategic flexibility on customer-perceived value. Especially, the impact of market competence and strategic flexibility on customer-perceived quality and customer-perceived value on customer satisfaction is significant at the $p < 0.05$ level. Most noticeable are the highly significant ($p < 0.001$) paths from open-mindedness to marketing competence, from marketing competence to strategic flexibility, and from customer-perceived quality to customer-perceived value and customer satisfaction.

Discussions of Modelling Results

Impact of Organizational Learning on Core Competences

In the current era of knowledge economy, it is not enough for firms to only possess certain competences. To succeed, they must be able to develop new competitive advantages through organizational learning to meet the changing market conditions and customer needs. This is especially true for construction consulting services, which are knowledge-intensive (but not technology-intensive) and hence continuous organizational learning of new knowledge is necessary for them to be technologically competitive. Furthermore, these services are faced with different client needs for budgets and project styles and hence continuous organizational learning of changing market conditions is necessary for them to be marketing competitive. That is, organizational learning is expected to enhance a firm's core competences. This study largely validates the hypothesis, evidenced by the positive influences of the three components of organizational learning on both technological and marketing competences as shown in Figure 1. In detail, the modelling results reveal that:

1. A firm's commitment to learning has a more significant impact on its technological competence ($b = 0.223$, $p = 0.058$) than on its marketing competence ($b = 0.128$, $p = 0.139$). This seems natural since technological competence, as opposed to marketing competence, is indeed based more on acquiring, processing and applying new information and knowledge – all reflected in commitment to learning.
2. Shared vision has a much more significant impact on the technological competence ($b = 0.327$, $p = 0.064$) than on the marketing competence ($b = 0.061$, $p = 0.374$), implying that a higher degree of shared vision can improve the technological competence, but may

not improve the marketing competence. This possibly suggests that marketing competence – building closer relationships with customers – requires more flexibility or open-mindedness than shared vision or uniformity. Another point to support this result is that shared vision is more important than flexibility for harmonious communication between experts and employees in acquiring and sharing new knowledge and skills to improve the technological competence.

3. Unlike commitment to learning and shared vision, which have more significant influences on the technological competence than on the marketing competence, open-mindedness has a much more significant impact on the marketing competence ($b = 0.739$, $p < 0.001$) than on the technological competence ($b = 0.245$, $p = 0.146$). This is understandable, since, among the three dimensions of organizational learning, open-mindedness requires the firm to continuously and critically review market conditions and customer requirements to the greatest extent, which associates more with marketing competence than with technological competence.

Impact of Core Competences on Customer Perceptions

The modelling results reveal a much more significant impact of marketing competence on customer-perceived quality ($b = 0.312$, $p = 0.031$) than on value ($b = 0.144$, $p = 0.169$). This implies that, for construction consulting services, a firm's marketing competence may be viewed more from the quality perspective than from the value side to create higher customer satisfaction. Since service quality can be perceived more easily and objectively than service value, firms tend to build their competences, including marketing competence, mainly for improving their service quality. In this study, construction consultancy firms are engaged in competitive fee tendering, which will specifically assess the firms' quality scores in addition to their bidding prices. Hence firms' endeavours or competences should indeed be devoted to the service quality side, which in fact is also the major objective – measuring and managing service quality – of this research.

This study fails to demonstrate a significant impact of the technological competence on both customer-perceived quality and value. As construction consulting services are not technology-intensive, this implies that technological competence may not considerably help a construction consulting firm in improving its customer-perceived quality and value, hence it may not be particularly necessary to be technologically competitive.

The Mediating Roles of Strategic Flexibility

Strategic flexibility plays a mediating role in the proposed model to link a firm's competences to its customer-focused performance. On one hand, the

model shows that market competence exerts a substantially more significant impact ($b = 0.767$, $p < 0.001$) on strategic flexibility than technological competence ($b = 0.003$, $p = 0.489$). This is not unexpected. A firm's market competence is based on a profound understanding of customers' current and future needs and competitors' possible actions, which will help the firm to respond quickly to market changes and hence enhance its strategic flexibility. But a firm's technological competence is unique in some sense, and hence is usually difficult to replace by substitute processes, difficult for competitors to imitate, and immobile across firm boundaries (Grant, 1991), which may not enhance its strategic flexibility.

On the other hand, the modelling results reveal that strategic flexibility has a more significant impact on customer-perceived quality ($b = 0.319$, $p = 0.011$) than on customer-perceived value ($b = 0.176$, $p = 0.080$). This could again be understood from the reasoning that construction consulting firms' endeavours are likely to focus more on their professional service quality, which can be more easily perceived by the clients. Combining with the previous results, this study also reveals a leading role of strategic flexibility in enhancing the customer-focused performance – among the resource-based determinants (i.e. technological competence, marketing competence and strategic flexibility) of customer-perceived quality and value, strategic flexibility is the most important with the largest and most significant impact coefficients.

Finally, it is interesting to examine the strategic flexibility's mediating role in linking a firm's competences to its customer-focused performance. Since the direct impact of technological competence on customer-perceived quality and value and on strategic flexibility is insignificant, strategic flexibility does not mediate the impact of technological competence on customer-focused performance at all. However, the mediating role of strategic flexibility in linking a firm's marketing competence to its customer-focused performance is obvious, evidenced by considerable direct impact of marketing competence on customer-focused performance and also indirect impact through its significant influence on strategic flexibility. This again shows that marketing competence is more important than technological competence in improving customer-focused performance for consulting services.

In detail, strategic flexibility has a strong mediating role in linking a firm's marketing competence to its customer-perceived quality, as implied by significant direct impact of marketing competence on customer-perceived quality and its significant indirect impact via strategic flexibility. But its mediating role is much weaker in linking a firm's marketing competence to its customer-perceived value, as evidenced by a much less significant direct impact of marketing competence on customer-perceived value and its less significant indirect impact via strategic flexibility. This once again demon-

strates that a consulting service firm's marketing competence has more to do with customer-perceived quality than with customer-perceived value, with or without the mediation role of its strategic flexibility.

Customer-Perceived Quality and Value

As well established in the marketing literature, this study confirms that customer-perceived quality helps enhance customer-perceived value and that both customer perceived quality and value increase the customer satisfaction. In the study it is noticed that these customer perceptions are not really from the clients themselves, but are ascertained by the consultancy firms. The confirmed significant relationships among these 'customer' perceptions prove the quality of the existing measures of structural relations among the customer-focused performance constructs. This shows the appropriateness of letting firms (indirectly) reveal customer perceptions, as performed in this study, since it is reasonable to assume that firms should be able to know, at least partly, their customers' perceptions.

The positive path coefficients relating customer-perceived quality to value and satisfaction are highly significant ($p < 0.001$), showing the strong predictive power of quality on value and satisfaction. A positive impact of customer-perceived value on satisfaction is also significant ($p < 0.05$), but weaker than the impact of quality. This is in line with the marketing notion that value may be more essential for customers' initial choices, but quality is much more fundamental for their consumption experiences (Fornell et al., 1996). In fact, the above modelling results demonstrate much stronger impacts of core competences and strategic flexibility on customer-perceived quality than on customer-perceived value, logically suggesting a higher importance of quality than value. The dominating role of quality over value in forming customer satisfaction also supports the previous results that a service firm should associate its competences and strategic flexibility more with quality than with value.

Summary and Concluding Remarks

Originated from a Hong Kong government-funded project to model competitive fee tendering in the local construction industry, this study aims to examine how customer-focused performance relates to professional consultants' core competences, and hence to help them formulate service quality improvement priorities for developing appropriate bidding strategies. By establishing a structural equation model (SEM) with the help of survey data collected from local construction consultants, the current paper largely validates the conceptual framework of Wang and Lo (2003, 2004), which links a firm's resource-based strategies to its customer-focus performance and hence accomplishes the proposed research objective. In general, the

modelling results support the positive impacts of organizational learning on a firm's core competences, which in turn positively influence customer-focused performance directly and indirectly through its strategic flexibility. In particular, a number of hypothesized impacts are verified at the one-tail 10 percent significant level, including the positive impact of commitment to learning and shared vision on technological competence, open-mindedness on marketing competence, marketing competence on strategic flexibility and customer-perceived quality, and strategic flexibility on customer-perceived quality and value.

Managerial Implications

This study also reveals several relationships unique to the construction consulting businesses that are not technology-intensive, which have managerial implications for professional services. Firstly, a firm's degree of shared vision exerts much bigger influence on its technological competence than on its marketing competence, while its open-mindedness has just the reverse pattern of effects. This implies that, if technological competence is considered more important, the firm should maintain a higher degree of shared vision or uniformity to promote harmonious communications between its experts and employees in acquiring and sharing new knowledge and information. However, if marketing competence is deemed more influential, which is usually the case for services, the firm needs more flexibility or open-mindedness to continuously review the market conditions in order to build closer relationships with customers.

Secondly, a firm's marketing competence has much stronger impact on its strategic flexibility and customer-perceived quality and value than its technological competence. This shows that the higher cost and lower provision rates of technological competence make it less influential than marketing competence for the strategic flexibility and customer-focused performance of professional service firms, which are not technology-intensive. Such service firms are better off to deploy their resources more on building marketing competences, such as actively understanding customers' current and future needs and competitors' possible actions, and quickly responding to market changes and providing operational solutions.

Thirdly, a firm's competences and strategic flexibility have greater impact on customer-perceived quality than on customer-perceived value, leading to somewhat unusual conclusion that quality is much more important than value in forming customer satisfaction for professional services. This implies the dominating role of quality over price in professional services, which are highly knowledge-intensive (but not necessarily technology-intensive) and whose clients are usually highly knowledgeable. Hence, firms should pay more attention to their service quality than offering prices by not only

maintaining their technological competences, but continuously improving their marketing competences and strategic flexibilities as well.

Research Limitations and Future Directions

This paper demonstrates the influential links from resource-based strategies to customer-focused performance for professional services using a conceptual framework and survey data from 122 construction consulting firms in Hong Kong. As reported above, the research findings are interesting and have certain managerial implications. However, since the constituents of organizational learning, core competences and strategic flexibility and their differentiated effects on customer-focused performance have only recently emerged as an important subject for empirical research (Duysters & Hagedoorn, 2000; Wang & Lo, 2003, 2004), limitations do exist in this paper, and future studies should attempt to overcome them.

Firstly, although many relationships in the conceptual framework are validated in the study, some are found to be insignificant at the one-tail 10 percent level, including the links from shared-vision to marketing competence and from technological competence to strategic flexibility. Similar studies are thus needed to verify all relevant relationships expected from the conceptual framework. Especially, more samples from not technology-intensive services are required to verify the dominating role of marketing competence over technological competence in achieving superior customer-focused performance. Studies of services with more technological requirements are also called for to distinguish the different roles of marketing and technological competences of different firms in enhancing their customer-focused performance.

Secondly, this study is based on an admittedly small sample of 122 construction consulting firms in Hong Kong, which may be the major reason for the SEM's not-so-good fitting, including a number of insignificant paths. Given the small economic scale of Hong Kong and the highly knowledge-intensive nature of the construction consulting services, the sample size of 122 is actually not unacceptably small. However, corresponding to the model's 9 constructs and 31 measurement items, the sample size is indeed small. In this regard, the current research with the limited survey data has little room to improve, and future researches are required to conduct larger scale of surveys of firms in different service settings to present more complete and reliable studies into the important cause-effect chain from organizational learning to core competences and then to customer-focused performance.

Thirdly, due to the difficulty in identifying and surveying each firm's customers, customer-focused performance data were simply obtained from the firms, not directly from the customers. Although difficult, it is still hoped

that future studies can obtain data from the firms for their resource-based strategies and data from each firm's customers for their perceptions of the firm's performance, and hence more reliably examine the conceptual framework linking a firm's resource-based strategies to its customer-focused performance.

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