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Segmentation of quantity surveying professional services for focus strategy and diversification

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Abstract

Purpose – Notwithstanding that numerous studies have focused on strategy in quantity surveying (QS) professional service firms, there is a paucity of investigation on the segmentation of QS professional services. The purpose of this study is to investigate the segmentation of QS services for diversification and a focus strategy formation.

Design/methodology/approach – This study adopts the positivist stance and quantitative approach in which a simple random sampling technique was used to select participants. In total, 110 survey questionnaires were administered to registered professional QS, out of which 79 completed questionnaires were returned for analysis.

Findings – The paper identifies three main QS service segments characterised by low, moderate and high competition. In addition, this study found that the concentration of traditional QS services in the building construction sector is due to the unwillingness of QS professional service firms to diversify into the non-construction sectors such as oil and gas. The diversification of QS services in the low competitive segment requires the adoption of agile approaches.

Research limitations/implications – The study was limited to numeric analyses and so would be complemented by qualitative research in the future.

Practical implications – This paper is useful to QS professional service firms interested in diversifying their services into the non-construction sectors to enhance the pricing of their services.

Originality/value – Segmentation of QS services is fundamental to the formulation of focus strategy for non-construction sectors such as oil and gas and mining to enhance the pricing of QS professional services.

Keywords Strategy, Management, Strategic management, Competitive advantage, Business strategy, Professional quantity surveyors, Diversification, Quantity, Surveying, Professional, Segmentation, Pricing

Paper type Research paper

Introduction

High level of competition in the business environment erodes the opportunities of quantity surveying (QS) firms (Abidin *et al.*, 2014; Ofori and Toor, 2012). Professional QS firms

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respond to intense competition by engaging in unethical practices during service delivery to clients. These unethical practices include under-pricing of services; conflict of interest; divulging of trade secrets and denial of fault to survive in a competitive business environment (Olatunji, 2007; Olatunji and Ogunsemi, 2006; and Smith, 2004). QS firms that offer traditional services to clients face intense competition because over-concentration of firms creates a "red ocean" market segment (Kim *et al.*, 2008, p. 522). A red ocean market segment characterised by a high level of competition, and low-profit margin (Kim and Mauborgne, 2015) makes it difficult for QS firms to survive. In addition to the high level of competition, QS firms are facing various challenges in turbulent business environment because of difficult economic conditions; lack of access to finance and credit and rapidly changing technology (Kaklauskas *et al.*, 2011; Frei, 2010). Turbulent business environment affects the performance, profitability and survival of QS firms operating in the over-concentrated market segment. Thus, diversification of non-traditional QS services into non-construction sectors such as oil and gas and mining ensures the survival and profitability of QS firms.

Diversification is a corporate level strategy that firms use to seize opportunities in new markets segments to improve their performance, growth, survival and access to capital (Jang, 2012). In addition, earlier studies by Andrews (1980) and Gluck (1985) defined diversification as a strategy for expanding the core business activities of organisations into new market segments. Furthermore, diversification is key to strategy formation in organisations. Studies by Ansoff (1958) and Rumelt (1974) focused on the models of diversification and its impacts on the value of firms. A study by Ganiyu *et al.* (2012) on the diversification and performance of QS firms concludes that diversification increases the knowledge of QS professionals. Despite this conclusion, Ganiyu *et al.* (2012) did not consider the specific market segments and sectors for QS services diversification.

The demand for traditional QS services has reduced over the last three decades. For instance, the demand for preparation of bills of quantities that accounted for 80 per cent of QS services in the 1980s reduced to 10 per cent in 2003 (Smith, 2004). Despite the fact that the demand for traditional QS services continue to decrease, opportunities exist in the non-construction sectors. Therefore, the low concentration of non-traditional QS services in the non-construction sectors provides opportunities for QS to use a focus strategy to drive the diversification of their services. The aim of this study is to investigate QS professional services and classify them into appropriate segments to ensure the diversification of QS professional services.

Literature review

This section of the paper focuses on the review of existing literature on QS professional services; non-traditional services and focus strategy in QS practices.

Quantity surveying professional services

Quantity surveyors provide different types of services to clients in different industries (Olanrewaju and Anahve, 2015) at the various stages of construction projects. For instance, QS professionals provide cost management services throughout the life cycle of construction projects to ensure financial accountability, transparency and value for money (Olanrewaju and Anahve, 2015). Olawale (2006) classifies QS professional services by highlighting emerging services such as alternative dispute resolution (ADR). Olatunde (2006) categorises QS services using the pre-contract, contract and post contract stages as a criteria. QS professional services are classified based on the roles of quantity surveyors at various stages of construction project delivery. For instance, contract management, construction

procurement management and life cycle costing are categorised as contract procurement management services.

Burnside and Westcott (1999) and Seeley (1997) classify QS services as traditional and non-traditional services. Traditional QS services refer to the category of technical and professional services that are accredited and regulated by recognised QS professional bodies (Burnside and Westcott, 1999). According to Seeley (1997), traditional QS services include preparation of tender documents, measurement and valuation of variations, preparation of final accounts, valuing work in progress and contract administration. The Canadian Institute of Quantity Surveyors (2002) classifies traditional QS services into cost consulting, mortgage monitoring, life cycle costing and value management. These classifications of QS services enable QS professional bodies and third level institutions to develop training programmes that address the skills requirements of QS firms. While traditional QS services receive significant attention in scholarly investigations, non-traditional QS services receive far less attention in that regard. Thus, this paper examines non-traditional QS services below.

Non-traditional services

The complex nature of the construction industry (Ofori and Toor, 2012) has resulted in the emergence of non-traditional QS services. In addition, the increasing demand for non-traditional QS services has led to the emergence of contemporary roles of quantity surveyors in both construction and non-construction sectors (Owusu-Manu *et al.*, 2014). Usually, clients in non-construction sector require the services of QS professionals to undertake core business activities (Cartlidge, 2009). In the banking and financial sector, quantity surveyors offer bank monitoring services by providing impartial advice to banks on proposed construction projects. However, QS firms are unable to provide most of their services to clients in the non-construction sector (Smith, 2004) because of the lack of focus on the non-construction sector. An analysis of previous studies indicates that the contribution of non-traditional services to the income of QS firms has been increasing since 2003 from 10 per cent in 1995 to 50 per cent of the total income generated (Smith, 2004). To increase the level of their income generation, QS firms require a focus strategy that drives the diversification of their services.

Focus strategy

Focus strategy deals with the concentration of services or products in a market segment (Littler, 2015; Weber and Polo, 2010). According to Porter (1989), a focus strategy is suitable for developing market segments that provide services to the satisfaction of clients. Subsequently, clients' satisfaction leads to long-term relationship and repeat business (Taylor, 2005), which are necessary for competitive advantage in a market segment with many substitutes. Tanwar (2013) notes that fewer substitutes create a competitive advantage for firms operating in a niche market. Therefore, firms that intend to develop the focus strategy must identify and invest in the market segments with fewer substitutes (Cao and Gruca, 2005; Alba *et al.*, 1997; Treacy and Wiersema, 1993). Furthermore, it is necessary for firms to consider the factors that influence the formation of focus strategy such as buyer group; product line and geographical market (Porter, 1986). In this study, a product line represents the QS services market segment with limited supply, while buyer groups represent different types of clients in a particular QS services market segment. The geographical market in this study represents the construction and non-construction sectors. The success of a focus strategy depends on the long-term vision of the firm; delegation of

authority during decision-making; client-relationship management and expertise of professionals (Weber and Polo, 2010; Treacy and Wiersema, 1995).

Focus strategy in quantity surveying professional service firms

Focus strategy enables QS firms to capture a considerable number of clients to become leaders in a particular market segment. Innovative communication and service delivery enhance the relationship between the client and QS firms (Waller *et al.*, 2000; Anderson *et al.*, 1994), which leads to differentiation of services and repeat business (Jennings and Betts, 1996). Despite the importance of differentiation to focus strategy formation, Cheah *et al.* (2007) note that large financial requirement for differentiation makes it difficult for smaller QS firms to undertake new projects. However, the use of digital technologies and effective networking reduce the financial difficulties associated with differentiation in small and medium QS firms. Therefore, large financial requirements must not be an obstacle to differentiation and focus strategy formulation in small and medium QS firms.

Methodology

The choice of a research methodology depends on the philosophical stance of the researcher (Sexton, 2007). This study adopts the positivist stance and deductive reasoning that culminates into the use of the quantitative approach. The quantitative approach involves the use of numbers and statistical procedures to collect and analyse data (Naoum, 2013). A survey questionnaire comprising closed-ended questions with a series of scales of measurement was used to collect data from respondents. The choice of survey questionnaire for data collection was to ensure the validity and reliability of the information gathered (Ameyaw *et al.*, 2017; Opoku *et al.*, 2016; Hoxley, 2008). A pilot study was undertaken by administering the survey questionnaires to 16 research experts comprising 8 academics, and 8 QS practitioners that led to the refinement of the questionnaire in terms of clarity; choice of words; speed of completion and suitability of variables. The survey questionnaire was in three sections, namely, respondents' profile, sectors of operation and QS services provided to clients. The third section consists of QS services gleaned from the literature review on QS services, as shown in Table I.

A five-point Likert scale was used to measure the variables shown in Table I with the following response options: 1 = not competitive; 2 = Less competitive; 3 = moderately competitive; 4 = competitive and 5 = highly competitive. To ascertain the reliability of the Likert scale, a Cronbach alpha test for variables in Table I gave 0.90. The Cronbach alpha value is between 0 and 1. The value closer to 1, indicates a high degree of reliability of scale of measurement. Hence, the Cronbach alpha value of 0.90 shows that the scale of measurement is highly reliable for the measurement of the variables in Table I. Investigations by Aghimien *et al.* (2018) and Oke (2018) yielded Cronbach alpha values of 0.93, 0.81 and 0.92, respectively. The study focused on a target population of 372 registered quantity surveyors of the Ghana Institution of Surveyors (GhIS). The participants consisted of 37 fellows; 282 professionals and 53 technicians. The target population of 372 is similar to the number of participants involved in existing studies by Ling *et al.* (2018) and Aghimien *et al.* (2018) in Singapore and Nigeria with target participants of 430 and 330, respectively. The GhIS was established by the Royal Institute of Chartered Surveyors in 1969.The GhIS operates under the laws of Ghana as a professional body for assessing, training, certifying and regulating professional QS practice in Ghana. Ghana is a thriving sub-Saharan country located in West Africa with a population of 29 million. The economy of Ghana is market-based with significant growth opportunities in the services and agricultural sectors. The construction industry contributes 13.7 per cent to the gross domestic product of Ghana and

Variables	Sources
Preparing tender documents	Burnside and Westcott (1999)
Interim valuations and payments	Owusu-Manu *et al.* (2014)
Valuation of construction work	Ofori and Toor (2012)
Valuation of variations	Olanrewaju and Anahve (2015)
Cost control of projects	Olatunde (2006)
Final account preparation and agreement	Cartlidge (2009)
Claims preparation	
Financial statements	
Cost planning and cost checking	
Advice on contracting methods	
Preliminary cost advice	
Contract administration	
Preparing cash flow forecasts	
Negotiating contract prices	
Project management	
Value management	
Arbitrations and disputes resolution	
Advice on procurement strategy	
Construction management	
Program management	
Facilities management	
Maintenance management	
Whole life cycle cost management	
Business planning	
Risk management	
Commercial management	
Management of capital expenditure	

Table I.
List of variables and sources

employs about 320,000 people (Ghana Statistical Service, 2017; Darko and Löwe, 2016). Having defined the target population and the scope of the study, the Kish (1965) formula was used to determine the sample size of the study. The Kish formula has been used in studies by Ashmawi *et al.* (2018), Adesi (2014) and Bolstein and Crow (2008) to determine the sample size for their investigation. Thus, the Kish formula is stated as follows:

$$n = \frac{n^1}{1 + n^1/N}$$

From the Kish formula above, *n* represents the sample size to be determined and N depicts the total number of the target population. To obtain the value of n^1, the standard deviation at a confidence interval of 95 per cent was divided by the standard error of the distribution at 5 per cent. Thus, with these parameters, the Kish formula gave a sample size of 79 respondents. The simple random sampling technique was used to select the 79 respondents from the target population of 372 quantity surveyors because of the availability of a list of quantity surveyors registered with GhIS. Lette *et al.* (2018) used the simple random sampling technique in their investigation of work-related injuries among construction workers. A self-completed questionnaire was administered to 110 respondents through an internet-mediated online survey in which 79 usable responses were received for analysis. The main tools for data analysis were the descriptive statistics and competitive index (CI). Porter (2000) and Sala-i-Martin *et al.* (2004) developed the Global Competitiveness Index for

categorising countries into high, middle and low stages of development, which was adapted for the segmentation of QS services shown in Table IV of this study. Based on Sala-i-Martin *et al.* (2015) and Underwood (2013), the CI was computed as follows:

$$CI = \frac{\sum_{i=1}^{n} x_i, \quad i = 1, 2, \ldots, n}{(A * N)}.$$

Drawing from the CI expression, n represents the variables associated with a question, i denotes the response of participants from the first respondent $i = 1$ through to the last respondent; A denotes the highest response rating on the Likert scale, i.e. 5 and N represents the total number of responsive participants in the study.

Results from data analysis

This section of the study presents the results of the data analysis on the profile of respondents; sectors of operation and QS services segmentation. The profile of respondents focused on the legal status of QS firms involved in the study; the number of years in operation; the rate of work acquisition and sectors of operation in Table II below.

The results in Table II above show that 12 per cent of respondents involved in the study are sole practitioners. In addition, QS firms operating as a private limited company employ 56 per cent of respondents. Similarly, 17 per cent of respondents work in QS firms that are into partnership, and 15 per cent of participants belong to QS organisations operating as consultants for government institutions. The results show that 38 per cent of the QS firms have been in existence for less than 10 years, while 37 per cent of QS firms involved in the study have been operating for 10-20 years. Similarly, 9 per cent of the firms that participated in the study have been in existence for 21-30 years, while 16 per cent of QS firms have been operating for over 30 years. Concerning the rate of work acquisition, Table II shows that 42

Table II. Profile of respondents

Profile of firms	No. of respondents	(%)
Legal status		
i. Sole proprietorship	10	12
ii. Private limited company	44	56
iii. Partnership	13	16
iv. Others	12	15
Total	*79*	*100*
Age		
i. Under 10 years	30	*38*
ii. 10-20 years	29	*37*
iii. 21-30 years	7	*9*
iv over 30 years	13	*16*
Total	*79*	*100*
Rate of work acquisition		
i. Not frequent	8	*10*
ii. Moderately frequent	26	*33*
iii. Frequent	33	*42*
iv. Very frequent	12	*15*
Total	79	*100*

per cent of QS firms frequently acquire works, while 15 per cent of QS firms acquire works very frequently. Furthermore, Table II shows that 33 per cent of QS firms in the study have a moderate rate of work acquisition, while 10 per cent of firms do not acquire work frequently. The study seeks to ascertain the various sectors of operation for QS firms involved in the study. These sectors include the building construction; civil engineering; mechanical engineering services; oil and gas; mining and urban planning, as shown Table III.

The results in Table III above show that majority of QS firms representing 82.3 per cent seldom operate in the mining sector despite opportunities existing in the mining sector for the diversification of QS services. Similarly, 86 per cent of QS practices do not explore and exploit opportunities in the oil and gas sector by offering services to clients. In Table III, 58 per cent of respondents do not frequently operate in the mechanical engineering services sector. These results of Table III show that it is important to use a criterion for the segmentation of QS services; hence, this paper use competition as a criterion for segmentation of QS services in Table IV.

Drawing from Table IV, the highly competitive QS service segment consists of traditional QS services offered to clients within the building construction sector, suggesting a concentration of traditional QS services in the building construction sector. Moderate competitive QS services market segment comprising contract price negotiation; project management and value management services are shown in Table IV. Similarly, Table IV shows that the low competitive market segment consists of eleven (11) QS services that are rarely offered to clients by QS firms.

Discussion of results

The result of the study in Table II shows that most QS firms operate as private limited companies. The legal character of a firm determines the ownership structure and the types of activities undertaken (Owusu-Manu *et al.*, 2010). According to Teece (1996), the ownership structure of a firm is related to the type of innovation, technology and policy adopted to ensure competitive advantage. The experience of a firm depends on its age and the ability to mobilise resources for service delivery to clients. Furthermore, a firm's age influences its performance, profitability and knowledge acquisition (Pervan *et al.*, 2017). The knowledge of QS firms in professional service delivery enables them to make decisions that support the formation of a focus strategy for a particular market segment. In addition, the results show that a considerable number of firms involved in this study have been in existence for less than twenty years. This indicates that QS

Table III. Sectors of operation for QS firms in Ghana

Sectors	Responses					
	Not frequent (%)	Less frequent (%)	Moderately frequent (%)	Frequent (%)	Very frequent (%)	Total (%)
1. Building construction	3.8	5.1	29.1	35.4	26.6	100
2. Civil engineering	11.4	29.1	38.0	15.2	6.3	100
3. Mechanical engineering services	58.2	30.4	6.3	5.1	0.0	100
4. Oil and gas	86.1	8.9	1.3	3.7	0.0	100
5. Mining	82.3	10.1	1.3	1.2	5.1	100
6. Urban planning	38	34.2	19.0	6.3	2.5	100

Segment name and QS services	*N*	Sum*	Competitive index	Ranking	Missing**
High competition					
1. Preparing tender documents	79	318	0.81	1	
2. Interim valuations and payments	79	308	0.78	2	
3. Valuation of construction work	79	306	0.77	3	
4. Valuation of variations	79	301	0.76	4	
5. Cost control of projects	79	296	0.75	5	
6. Final account preparation and agreement	79	296	0.75	5	
7. Claims preparation	79	286	0.72	6	
8. Financial statements	79	285	0.72	6	
9. Cost planning and cost checking	79	280	0.71	7	
10. Advice on contracting methods	79	279	0.71	7	
11. Preliminary cost advice	79	278	0.70	8	
12. Contract administration	78	274	0.70	8	
13. Preparing cash flow forecasts	79	273	0.69	9	
Moderate competition					
14. Negotiating contract prices	79	260	0.66	10	
15. Project management	79	248	0.63	11	
16. Value management	79	239	0.61	12	
Low competition					
17. ADR	79	183	0.46	13	
18. Advice on procurement strategy	78	175	0.45	14	1
19. Construction management	78	168	0.44	15	1
20. Program management	78	167	0.43	16	1
21. Facilities management	78	169	0.43	16	1
22. Maintenance management	78	166	0.43	16	1
23. Whole life cycle cost management	78	152	0.39	17	1
24. Business planning	78	151	0.39	17	1
25. Risk management	78	151	0.39	17	1
26. Commercial management	78	150	0.38	18	1
27. Management of capital expenditure	78	146	0.37	19	1

Table IV.
QS services segments

Notes: *Sum of rating ranging from 1-5 assigned to each variable multiply by the number of respondents; **Missing: represents the number of respondents who skipped the rating of these QS services

firms that have been in existence for more than ten years have considerable experience and knowledge about the QS market.

The rate of work acquisition by QS professional service firms is important for skill development and experience. For instance, Lee *et al.* (2013) highlighted the role of experience in career development and lifelong learning among QS professionals. Similarly, work acquisition improves the professional experience and knowledge acquisition of graduates entering the QS profession. The results on the rate of work acquisition show that QS firms with a high rate of work acquisition are able to provide opportunities for career and skills development than QS firms with a moderate and low rate of work acquisition. In addition, the result indicates that diversification into the non-construction sectors increases the rate of work acquisition for QS firms. Studies by Mzyece *et al.* (2010) and Hanid *et al.* (2007) on QS professional service in construction and non-construction sectors show that the non-construction sector has considerable opportunities for diversification.

Non-construction sectors: mining, oil and gas

Mining and construction industry are closely related because mining operations require the services of construction professionals such as quantity surveyors. Construction activities in the mining sector such as site excavation; bulk material handling; construction of access roads and pad construction offer opportunities to QS practices. However, the result in Table III shows that QS professional service firms are unable to diversify their services into the mining sector because they continue to focus on building construction sector. Less concentration of QS service firms in the mining sector provides an opportunity for diversification. This implies that the mining sector remains an uncontested market segment or "blue ocean" (Kim and Mauborgne, 2014, p. 4) for QS service firms. The diversification of QS services such as value engineering; procurement services; cost control; estimation; feasibility studies; construction management and commercial management (Hanid *et al.*, 2007) into the mining sector addresses the existing challenges in that sector. These challenges include cost, time and budget overruns; overpricing and underpricing of projects and professional services and disputes related to claims.

The oil discovery in Ghana provided QS firms with opportunity to diversify their services to support operations such as drilling and engineering in the oil and gas industry (Addai *et al.*, 2009). According to Ajator (2014), QS services in the oil and gas sector include cost engineering and estimating services; procurement, contracting and commercial management; value management and facilities management. However, the results of this study suggest that QS practices seldom offer services to clients in the oil and gas sector. This means the oil and gas sector is uncontested and less saturated with QS firms. The success of QS services diversification in to the oil and gas sector of Ghana requires a focus strategy to create competitive advantage. A focus strategy enables QS practices to provide differentiated services in order to meet the expectations of clients in the oil and gas sector.

Construction-related sectors

The results in Table III show that a high concentration of QS firms in the building construction sector will erode competitive advantage. Therefore, QS firms must diversify their services into non-construction sectors such as oil and gas and mining using a focus strategy to drive the differentiation and provision of services to clients at low cost. Similarly, the results in Table III indicate that half of the respondents involved in the study do not provide services to clients in the mechanical engineering sector. This shows that the mechanical engineering sector is less saturated with QS firms than the building construction and the civil engineering sectors.

The reasons for a moderate concentration of QS practices in the civil engineering sector is because of the availability of civil engineering standard method of measurement (Seeley and Murray, 2001) and training of civil engineers in cost management and estimation (Adelil and Wu, 1998). In addition, the results in Table III suggest that it is not profitable for QS practices to focus on the provision of services in the civil engineering sector because it is in the moderately competitive market segment. Rapid technological changes have enhanced project and service delivery to clients. As a result of increasing competition, QS firms need to formulate strategies that focus on less saturated but profitable segments of both construction and non-construction sectors to create competitive advantage. In this study, QS professional services were categorised into segments based on the level of competition among QS firms. Previous studies examined the increasing level of competition among QS practitioners without considering competition as a criterion for the segmentation of the QS services. The choice of competition as a criterion for segmentation of QS services is consistent with Lin's (2002) suggestion for the selection of variables for segmentation.

Furthermore, investigations by Drew *et al.* (2001) and Rahim *et al.* (2013) found high competition among QS practitioners. Highly competitive QS market segments have low profitability because of fee cutting to win more contracts than their rivals. Despite the emphasis on the use of information technology to create a competitive strategy, Jennings and Betts (1996) did not consider the segmentation of QS services as shown in Table IV of this study. The success of QS firms operating in highly competitive QS segment depends on the use of digital technologies such as building information modelling; data analytics and cloud computing to provide low-cost services to clients. QS firms that intend to diversify into the moderately competitive QS service segment must develop focus strategies that address the needs of clients and strategically position themselves in the market segment to make a profit (Larsen, 2010). The low competitive QS service segment suggests less saturation of QS firms and the availability of opportunities for diversification. It is important for QS firms to forecast the demand for their services in the three main QS service segments in Table IV before diversification. An analysis of the results reveals key issues regarding low competitive segment; high competitive segment; building construction and non-traditional sectors, as shown in Figure 1.

Drawing from Figure 1, it is important to highlight four main issues arising from this study. First, QS firms that operate in the building construction sector provide only services in the highly competitive segment and do not diversify. Second, QS firms can operate in more than one service segment identified in Table IV using the focus strategy with flexibility. Third, QS firms that intend to diversify their services in the highly competitive segment to less concentrated sectors such as oil and gas and mining must use focus strategy with agility to capture opportunities before their competitors begin to enter the potential market segments. Finally, the low competitive QS service segment has a better prospect for diversification in non-construction sectors such as mining, oil and gas. The high

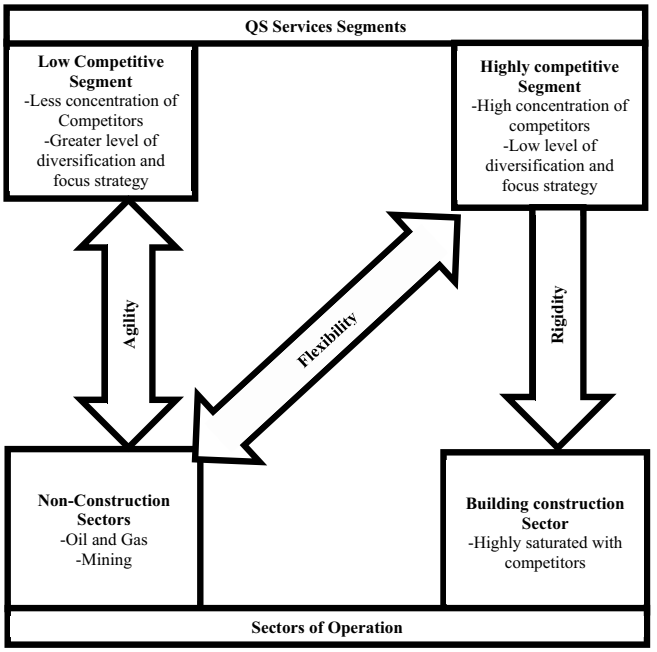

Figure 1.
QS services segments for diversification

concentration of firms in the highly competitive segment, as shown in Figure 1, is because of the rigidity of QS firms to diversify into less saturated service segments. The rigidity QS to diversify into the non-construction sector is because of the lack of strategic vision to explore opportunities in new market segments and sectors despite the risks and threats associated with operating in highly competitive QS service segment. Drawing from Figure 1, QS firms require strategic agility and flexibility to effectively operate in the low competitive segment in non-traditional sectors such as mining and oil and gas.

Conclusion

The diversification of QS professional services in both construction and non-construction sectors is fundamental for developing a focus strategy that enhances competitive advantage and pricing. Increasing competition and globalisation underscore the importance of focus strategies especially for diversification of QS professional services. However, the inability of QS firms to diversify their services creates a high level of competition in the building construction sector. The segmentation of the QS professional services enables strategists in QS firms to select the most profitable segments for diversification during the formulation of focus strategy. Critical sectors identified by the study for diversification of QS services include mining, oil and gas and mechanical and engineering. At the initial stages of the diversification, it is important to collaborate with firms already operating in the QS service segment targeted for diversification. This provides access to inter-organisational resources to reduce the cost of diversifying QS services. Despite the contribution of this study to the diversification and segmentation of QS services, further research focusing on the diversification of non-traditional QS services will provide significant benefits to QS professional service firms. Thus, key areas for further studies include:

- environmental analysis for non-construction sectors for successful diversification;
- exploring and developing strategies for partnering and alliancing of QS professional service firms in diversified sectors such as mining; and
- investigating organisational ambidexterity in QS practices for diversification in non-traditional sectors.

Diversification of QS services will improve the performance and survival of QS firms operating highly saturated QS services market segments. The diversification of QS firms into non-traditional sectors leads to the creation of more jobs and increased revenue through tax.

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