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A COMPARATIVE ANALYSIS OF KEY ELEMENTS OF THE STRATEGIC DECISION-MAKING PROCESS ACROSS CONSTRUCTION PROFESSIONAL SERVICES FIRMS: EVIDENCE FROM THE IRISH CONSTRUCTION INDUSTRY

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The Irish construction industry is experiencing a well-established growth phase following a prolonged recession. While the economic impact has been well documented, there remains less emphasis on discipline-specific studies pertaining to strategy within construction firms in Ireland. Additionally, evidence regarding strategic management within the construction sector is predominantly concentrated on contracting organisations, with less emphasis on highly knowledge intensive professional service firms (PSFs). As the construction sector in Ireland continues its sustained growth, there have been increased calls within the industry for further collaboration between key stakeholders. However, exploring collaboration within project-centric firms without understanding the individual strategic decision-making processes within them may be problematic. In the construction industry in particular, collaboration needs to be integrated into the overall strategy of individual stakeholders to be effective. Therefore, this study reports a unique insight pertaining to the strategic choices and characteristics of the decision-making process within consultant engineering (CE) and Quantity Surveying (QS) practices in Ireland as part of an ongoing study. The paper reports on findings from the first phase of a two-stage data collection, namely a widespread surveying of QS and Consultant Engineering practices in Ireland. The study provides two specific contributions. First, it adds to the body of knowledge by identifying key considerations in the strategic decision-making process within the context of highly knowledge intensive firms in a turbulent construction sector environment. Secondly, it addresses the recommendations of earlier studies about the need for cross-profession comparative analysis within PSFs, by comparing the process across two key disciplines within a significantly changed industry. The findings of the study contributes current insights into the state of competitive strategy and decision-making in the highly turbulent construction environment in Ireland.

Keywords: strategy, professional service firms, consultant, engineering

INTRODUCTION

The Irish construction industry has undergone substantial change over the last decade after experiencing a deep, lengthy period of recession. As the economy continues its

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path to recovery, there is increasing concentration on investigating the competitiveness and the survival of firms operating in the sector through future economic cycles. Murphy (2012) explored strategic process characteristics related to quantity surveying (QS) practices in Ireland, recommending cross-professional analysis of the strategy process in professional service firms (PSFs). There has been no follow-up study exploring these firms, despite the fact that the industry has changed significantly and has returned to growth (CSO, 2018). The reason for the under-investigation of the strategy processes in Irish PSFs may be due to the following reasons:

- The already established complexity involved in the study of strategic management as a field of enquiry within construction (Cheah and Chew, 2005)
- The turbulent nature of the construction industry, making it difficult to analyse (Flanagan *et al.,* 2007)
- The focus of strategy research on manufacturing and non-construction sectors (Murphy, 2012)
- Unique characteristic of professional service firms, i.e. intangibility of output, client involvement, highly professionalised workforce (Løwendahl, 2005)

Recent calls within the construction sector in the Farmer Review (2016) and the McKinsey report (MGI, 2017) have stressed the need for construction industry professionals to rethink their strategy. In the same vein, the Rodrigues de Almeida and Solas (2016) in a World Economic Forum (WEF) report on Shaping the Future of Construction emphasised the need for new perspectives in thinking for the construction sector, but there is yet lacking a multidisciplinary approach employed to the topic of strategy in PSFs. More importantly, there has been no cross-professional study exploring the strategy processes within consultant engineering (CE) firms and QS firms within Ireland, despite the fact that these two professions are key, interrelated professions within the sector.

Within Ireland, only two known empirical studies in strategy have been conducted among construction professionals i.e. Architectural firms (Flemming, 2011) and QS firms (Murphy, 2012), with CE firms being largely ignored in empirical research, despite being a critical component of the AES sector in the Irish construction industry. As a response to the improving prospects in the industry, it becomes essential to align with recent research directions within strategy research by exploring the decision-making process within PSFs in Ireland. This follows from the recommendations of Murphy (2012) on the need for cross-professional studies in PSFs, therefore warranting this investigation. We address this recommendation by investigating the selected characteristics of the process within these firms and comparing them across professions. The most recent inquiry into strategy in Irish CPSFs was conducted by Murphy (2012), with the only other study carried out by Tansey (2014) focused on contracting firms only, which are significantly different from CPSFs.

In the following section, a review of key literature on characteristics of the strategic decision-making process in CPSFs is presented. Afterwards, the methodology adopted for the study, particularly the research design, sample size and data collection process is outlined, followed by the data analysis. A comparative analysis is then undertaken. In conclusion, brief discussion of the implications of the study is presented, with possible future research directions proposed.

LITERATURE REVIEW

Mintzberg (1978; 935) outlined that 'strategy in general and realised strategy, in particular, will be defined as a pattern in a stream of decisions' and further asserted that 'the field of strategic management cannot afford to rely on a single definition of strategy' (Mintzberg, 1987a; 11). There is still no one agreed definition of strategy, with several researchers providing differing viewpoints and definitions in line with the evolving nature of competitiveness. Porter (1996) also posits that 'competitive strategy is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of value' (p. 64). This unique mix of value is what is often considered as competitive advantage and there is considerable evidence to suggest that engaging in the strategic management leads to superior firm performance (Pamulu, 2010), hence making it crucial to investigating the processes involved within the context of construction PSFs. Although several process characteristics have been espoused in strategy literature, this paper will concern itself with four central themes, ergo; strategic types (Miles and Snow, 1978), business strategy (Porter, 1980, 1985), risk attitude (Ingram and Thompson, 2012) and planning horizon (Alogan and Yet[idot]ş, 2006). Although Murphy (2013) explored these four themes within the Irish context, the industry has changed significantly since then and the study was carried out on a single profession (QS firms). Therefore, an opportunity exists to re-examine the strategy processes and conduct a comparative analysis between two key professions within Ireland.

Strategic types

Miles and Snow (1978) posit that a firm's approach to strategy will have an impact on the formality of the process and they named these approaches strategic types. They argue that although each firm may adopt different strategies based on their unique characteristics, their behavioural patterns will centre around four organisational types namely: prospector, analyser, defender and reactor. Oyewobi (2014) outlined that these typologies enhance understanding of how organisations perform in their interactions with their environment. Leitner and Guldenberg (2010) also found in their study of Austrian SMEs that most of the firms investigated fell under the analyser's type, i.e. firms which combine both prospector and defender types into a single system, via defending existing market share while seeking new market opportunities by offering new products. While a considerable number of construction professional service firms (CPSFs) will fall under the SME category, it would be important for the study to understand what strategy type they adapt within the Irish context and the implication on their decision-making process particularly within a multidisciplinary context, i.e. QS firms and CE firms. These typologies have previously been applied within the Irish context (e.g. Murphy, 2013), but not within a cross-professional context and more so, not within the last five years. Anikeeff and Sriram (2008) established that while the Miles and Snow (1978) strategic types deal mainly with a firm's product-market domain, it is also important to explore the business level strategies, which are concerned primarily with competition and maintaining distinct advantage. The two are inextricably linked and the latter will be explored further in the next section.

Business Level Strategy

Business-level strategy is primarily built on the seminal work of Porter (1980, 1985), who espoused three generic strategies; cost leadership, differentiation and focus. The core of business strategies is related to a business's overall competitive direction; the

way it positions itself in the marketplace to gain competitive advantage and the different positioning strategies that it can use in different industry settings (Tansey *et al.,* 2014). The Porter (1980,1985) model is widely accepted as a means of outlining the strategic options/choice pursued by firms, as evidenced by the number of studies in construction which utilise same in the Irish context (Murphy, 2013; Flemming, 2011; Tansey *et al.,* 2014). The focus strategy is sometimes extended to become cost-focus and differentiation-focus (Tansey *et al.,* 2014). These business strategies is explored in CPSFs, in tandem with the risk attitude, which is a major consideration when making strategic choices (Connaughton *et al.,* 2015)

Risk Attitude

The risk attitude of a firm is primarily concerned with how the firm takes decisions within the business environment. Although Baird and Thomas (1990) note that there is a lack of an accepted model of measuring risk-attitude among decision-makers, one can explore the interplay between organisational processes and the business environment to understand attitudes to risk. Ingram and Thompson (2012) proposed four categories for assessing risk attitudes. These categories include: Pragmatists, who view the world as being uncertain and unpredictable; Conservators, who believe the world is at high risk and adopt a conservative approach; Maximizers, who embrace risks and explore potentials by viewing the world as fundamentally self-correcting; and Managers, who believe the world is moderately risky, but not too risky for firms that have proper guidance. Therefore, these four risk attitudes are adopted in assessing Irish CPSFs attitudes to risk, particularly within the context of the turbulent business environment in construction in Ireland. Since the business environment is continually changing, it is also vital to examine the timeframe within which strategic decisions are made.

Planning Horizon

Harrison (1995) argued that planning horizons represent time spans over which strategy will be accomplished, resulting in the attainment of the strategic objectives. The time horizon for strategic planning differs from annually to as much as five years (Alogan and Yet[idot]ş, 2006). Murphy (2013) established that within the context of a changing business environment, the content of the strategic plan cannot stay the same, making the time horizon of the strategic decision-making important for consideration. With no recent planning horizon within the literature for Irish CPSFs, an investigation into the duration of planning within the significantly changed business environment is warranted.

METHODOLOGY

The research purpose for this study is exploratory, i.e. investigates what is happening within the firm and seeks new insights without investigating reasons (Robson, 2002). The approach employed is inductive, as it employs a ‘bottom-up’ approach and seeks to gain a close understanding of the strategic decision-making process (Easterby-Smith and Lowe, 2002). Also, the research philosophy employed is pragmatic while the research strategy is a quantitative survey (Saunders, 2012). The sampling technique adopted is purposive sampling (Bryman, 2012) and the participants were selected based on personal judgment of the researchers. The Association of Consulting Engineers Ireland (ACEI) and the Society of Chartered Surveyors Ireland (SCSI) supported this study, facilitating dissemination of the survey to member practices. The sample size involved senior members of each practice, who were

selected to ensure that only those who are considered are particularly informative and knowledgeable about the topic being investigated (Neuman, 2006). The survey was administered an online survey tool and data exported to Microsoft Excel for analysis. While online surveys are reputed to garner low responses from respondents, care is taken to ensure that the average response rate was above 21%, which is the average suggested by Dillman (2002).

DATA ANALYSIS

The data was gathered over a period of three months (January-March, 2018), with the QS sample size being 236 companies and that of CE firms being 99 firms. The QS sample returned a response rate of 27.96% (66 responses) while the CE firms recorded a response rate of 43.43% (43 responses) with only 42 usable responses. Table 1 presents the profile of respondents to the online survey.

Table1: Demographic data of respondents' organisations

	QS Firms		CE Firms	
	Frequency	% responses	Frequency	% responses
Respondent type				
Managing Director/ CEO	49	74.24	34	79.07
Director	13	19.70	9	20.93
Associate director	3	4.55	0	0.00
Senior Mgr (QS/Eng.)	1	1.51	0	0.00
Years of operation				
1-5 years	7	10.60	2	4.65
6-10 years	17	25.76	6	13.95
11-20 years	11	16.67	4	9.30
more than 20 years	31	46.97	31	72.10

Strategic Types

Table 2 below outlines the strategic types of both professions, highlighting nearly similar characteristics. While QS firms are mostly reactors (ranked 1st), CE firms are predominantly a mix of both reactors and defenders (both typologies have a similar percentage response rate of 40.48% of respondents respectively). Miles and Snow (1978) however warns of the dangers of the reactor typology, outlining that these firms are unable to efficiently respond to environmental change and uncertainty.

Table 2: Miles and Snow Strategic Types

Strategic types	QS Firms		CE Firms	
	% Response	Rank	% Response	Rank
Prospector	16.92	3rd	7.14	3rd
Defender	15.39	4th	40.48	1st
Analyser	29.23	2nd	11.90	2nd
Reactor	38.46	1st	40.48	1st

Firms within the reactor typology are exposed to the dangers posed by environmental pressure and Brunk (2003) states that reactors are often late to change and often their lateness to change results in subpar performance in the industry. García-Pérez *et al., (*2014) outlined that strategic reactor types would likely record worse strategic outcomes than analysers, defenders and prospectors. CE firms, on the other hand, are primarily reactors and defenders. Defenders seek ways of defending current market share in some sectors while exploring promising opportunities in others after a careful review of the market (Murphy, 2011). This is understandable for CE firms, given the

deep, lengthy period of recession experienced within the construction sector and these firms seek to maintain their current market share while carefully observing the market for more opportunities. Prospector firms also rank third within the CE profession, similar to the QS firms who have only a small number of their population as prospectors. Overall, QS firms appear to be more reactive and adopt a wait and see approach while CE firms are predominantly reactors and defenders. The next section will now build on the strategic types, exploring what strategic choices both professions take in the decision-making process.

Business Level Strategies

The highest business strategy pursued by QS firms in Ireland is differentiation. The three pure strategies being pursued are low-cost, differentiation and focus strategies. The differentiation strategy ranks highest, with 55.38% of QS respondents seeking to differentiate their service offerings from competitors (see table 3). This is surprising since professional service firms have been reported to pursue differentiation strategies ahead of others (Amonini *et al.,* 2010). The second highest ranked strategy is the combination strategy, which is further illustrated in table 3. In the combination strategy, five (5) firms select the cost-focus strategy, while four (4) firms choose the differentiation-focus strategy, with the third being cost-differentiation with three (3) respondents only.

Table 3: Business level strategies of QS and CE firms

Answer Choices	QS Firms (%)	Rank	CE Firms (%)	Rank
Low-Cost	13.85	2nd	0.00	-
Differentiation	55.38	1st	19.06	2nd
Focus	12.31	3rd	7.14	3rd
Cost-Differentiation	7.70	4th	0.00	-
Cost-Focus	4.60	5th	0.00	-
Differentiation Focus	6.16	6th	71.42	1st
Stuck-in-the-middle	0.00	-	2.38	4th

CE firms are very different from QS firms in their business strategy, mainly since none of them engages in pure low-cost business strategies (see table 3). The implications are that CE firms may choose not a bid for projects with low fee potential, reducing the possibility for price wars. A large percentage of CE firms pursue combination strategies and only 26.19% of them follow pure strategies with 19.05% pursuing differentiation strategies and 7.14% aligning with the focus strategy. The unique nature of CE firms is further reinforced in the fact that one of the respondents select that they pursue a combination of all three pure strategies plus a combination, which is interpreted as being stuck-in-the-middle as espoused by Porter (1980). This is because the firm said they pursue more than one generic strategy in the same area, making their strategy seem confusing and hard to decipher. This stuck-in-the-middle firm is an outlier within the sample and their choice of this strategy will make it difficult to define what distinguishes them from other firms.

The reason why CE firms are averse to the low-cost route of business strategy is inconclusive from the quantitative data alone, but from the comments section by respondents, they are more agreeable with offering superior differentiating services while focusing on a niche area of service offerings. One possible explanation may be, however, that since the firms surveyed are consulting firms and not ordinary CE firms,

the low-cost business strategy may be undesirable due to the high level of expertise held by these firms.

Risk Attitudes

Based on the risk attitudes proposed by Ingram and Thompson (2012), managers are the most common category exuded by QS firms (47.69%). These firms believe the world is moderately risky, but not too risky for firms that explore incrementally. These firms manage risk via taking necessary steps to mitigate it but that does not stop them from exploring opportunities. CE firms are different from QS firms in that there are more risk-takers among the population with 35.71% of CE firms ranking highest among respondents. This highlights that CE firms are more willing to take risks above QS firms.

Table 4 Attitudes to Risks

Answer Choices	QS Firms (%)	Rank	CE Firms (%)	Rank
Maximisers	26.16	2	35.71	1
Conservators	18.46	3	28.57	3
Managers	47.69	1	33.34	2
Pragmatists	7.69	4	2.38	4

A notable pattern between both professions is the inverse nature of their risk attitudes. Harland *et al., (*2003) outline that risk attitude changes with experience, i.e. an individual or firm used to taking risks may change their attitude after experiencing shocks or substantial losses. With the construction industry in Ireland having experienced a deep, lengthy recession between 2008 and 2012, Murphy (2013) had reported that most of the QS firms investigated were predominantly risk-averse. However, the current study has shown a change in risk attitude of firms in the industry, suggesting a shift in the risk attitude of firms in the industry i.e. CPSFs have become less risk-averse. The third-ranked risk attitude category are the conservators (18.46% QS; 28.57% CE). The Farmer report (2016) emphasised the risk-averse nature of the construction industry and this continued caution on the part of Irish firms may be due to the aftershocks of the recession. Although, Seaden *et al., (*2003) explained that smaller firms in construction tend to be more risk-averse, as they do not have the capacity or safety net to absorb shocks posed by risks, but this study does not explore peculiarities based on firm size. The last and final category of firms are pragmatists, who adopt a cautious wait and see approach, taking up only a small percentage of both professions. This turnout is not unexpected given the consistent growth recorded in the Irish construction sector over the last three years. In the next section, the timeframe for strategic decision-making will be considered, as strategic decisions are made and renewed on an ongoing basis within changing business environments.

Planning Horizon

From Table 5, it is evident that both QS and CE firms predominantly plan annually, with the ad-hoc planning horizon ranking second across both professions. Brock and Barry (2003) outline that plans that are longer than a year may be beneficial, but they cost more over the long term and difficult to justify. Thus, it is not strange that just a limited number of firms have a planning horizon of beyond a year. The high number of firms that review their strategy as often as required is commendable, because as Blumentritt (2006) outlined, managers may be forced into either conforming to an

obsolete strategic plan or acting as mavericks when change in the business becomes evident. Neither of these are attractive options, thus making the notion of long-term plans beyond a year undesirable for both professions. Therefore, it can be deduced that most CPSFs plan annually or on-demand, based on the nature of the industry and its susceptibility to change and economic cycle induced fluctuations.

Table 5: Planning Horizon

Planning horizon	QS firms		CE Firms	
	Response%	Rank	Response %	Rank
Annual cycle	46.88	1st	40.48	1st
Biennial	6.25	3rd	9.52	3rd
Triennial	3.13	4th	9.52	3rd
Quinquennial	1.56	5th	9.52	3rd
Ad Hoc/as often as needed	42.18	2nd	30.96	2nd

CONCLUSIONS

This study set out to explore four key elements of the strategic decision-making process in two professions within construction (QS and CE firms) in Ireland. The findings can be summarised thus: First, QS firms are primarily reactors, employing a responsive posture to decision-making rather than being proactive. CE firms on the other hand have an equal distribution of reactors and defenders, exploring opportunities while defending their market share at the same. Secondly, QS firms are predominantly differentiators in terms of business-level strategy, distinguishing themselves via offering unique services to clients. CE firms on the other hand do not adopt a low-cost strategy at all. Instead, they adopt differentiation-focus strategy as a proxy, delivering value on a dual front while charging a fair price.

Thirdly, the risk attitude of QS firms (managers) shields them from shocks and environmental uncertainties, but may also have its disadvantages, as lesser risk does not equate better competitiveness. CE firms are typically risk-takers, embracing risks with potential for high returns. The consequence of this is that CE firms will be more entrepreneurial and looking for new opportunities and exploring new markets above QS firms, who would rather wait and receive proper guidance before taking risks. Lastly, QS and CE firms are similar in their planning horizons, with both professions adopting the annual planning cycle for the most part and with the ad-hoc/on-demand planning cycles ranking second. Hamel and Prahalad (1994) outlined that planning horizons spanning long time spans are impracticable, thus making it understandable that both professions choose to plan annually or as often as required.

In conclusion, this study found that the decision-making process differs across QS and CE professions in construction. Since these firms are being encouraged to collaborate, we have pointed out key differences in decision-making on a strategic level that may affect these firms working together on a project-level. The scene has been set for further analysis to understand why these professions make different strategic choices and how this may be understood within the broader context of the complex, changing construction sector.

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