An analysis of the business strategy, performance measures and organisational performance of Spanish firms during the financial crisis (2008–2010)

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Abstract: During economic and financial crises, it is vital for companies to adapt their strategies to an increasingly complex business environment, and to consider the degree to which various measures of performance indicate effectively whether they are achieving their goals. Few researchers have explored the implications of economic and financial crises for strategic management, and few of the studies that do exist have focused on Spain. Results of a survey (N = 43) distributed to some of the largest Spanish firms indicate that respondents perceived the business environment to be very dynamic, hostile, and restrictive between 2008 and 2010. Economic variables exerted the most substantial force on the environment. Most companies adopted a differentiation approach, which was related to perceived environmental uncertainty. Companies also considered financial performance measures to be more important than non-financial. The results of the survey show there was a relationship between the differentiation approach and self-reported organisational performance.

Keywords: perceived environmental uncertainty; strategy; performance measures; crisis; Spain.

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1 Introduction

In forming their business strategies, managers incorporate perceptions about the environment in which their business operates. They may perceive the external factors that comprise the business environment – including market competition, customer preferences, technological advances, and economic elements – to be dynamic and unpredictable. Therefore researchers such as Miller (1988) and Hernández-Espallardo and Delgado-Ballester (2009) have long studied the nature of the relationships between environmental uncertainty or dynamism and the perception-guided choice of organisational strategy.

The control of the realisation of a business strategy implies that managers must use various performance measures to analyse the degree to which their strategic goals will be achieved. To this end, researchers such as Govindarajan (1984) and Verbeeten and Boons (2009) have analysed not only the various links between the adoption of certain strategies and the use of specific performance measures, but also the relationship between the business environment and those performance measures. Owing to their collective importance for guiding organisational decision making, studies exploring the impact of the alignment of the business environment, strategy, and performance measures on organisational performance have come to the fore, for example those by Baines and Langfield-Smith (2003) and Hoque (2004).

An economic and financial crisis demands operations that occur in continuous time, and are characterised by reformulated strategies, goals, and controls. This is why management accounting[1] faces significant pressure (Hopwood, 2009). Managers scan their business environment prior to draft business strategies. Therefore, it becomes necessary to comprehend the repercussions of economic and financial crises on managers' levels of perceived environmental uncertainty (PEU). As will be demonstrated in the literature review, there is no research at all on the effects of economic and financial crises on PEU. Research in Spain on this matter, such as that carried out by López-Gamero et al. (2011) and Casillas et al. (2011), was also set within a pre-crisis time frame.

Once managers have scanned the business environment, they formulate the strategy which they consider most appropriate for getting through crises. There are few recent studies on the appropriateness of a certain strategic approach. Furthermore, researchers who have concentrated on the Spanish economy, such as Simon-Elorz et al. (2015), Endenich (2014) or Alonso-Almeida and Bremser (2013), have reached different conclusions. The achievement of strategic objectives is controlled through the use of performance measures. There are also few studies which examine performance measures during the last economic and financial crisis. Despite the works of Li et al. (2011) and Lorain et al. (2015), research in Spain is no exception. Moreover, studies on the alignment of the previous variables with PEU, such as those completed by Baines and Langfield-Smith (2003) and Fleming et al. (2009), have concluded that there is a positive association between the appropriate fitting of strategic performance measures and organisational performance. There is nonetheless little research on this alignment during economic and financial crises. It has been stated that "management accounting gives little or no guidance on the modes of organisational response to economic crisis" [Hopwood, (2009), p.800], not to mention that Spanish companies were unprepared to address the financial crisis (Endenich, 2014). Therefore, the period of economic crisis between 2008 and 2010 offers a natural opportunity to research the relationships between business

environment, strategy, and performance measures, which are absent during 'times of normal change' [van der Stede, (2011), p.606]. Because of the relative novelty of management accounting in Spain, there is also a particular need for innovations related to management accounting to be disseminated there (Endenich, 2014).

There is a pressing need to understand how companies can better adapt to economic and financial crises, and try to fill the aforementioned research gaps. These are the research objectives of this study:

1 as a way of laying the foundations for this research, the first objective is to examine the level of PEU and characteristics of the business environment that Spanish company managers perceived from 2008 to 2010

2 the second objective is to determine which type of Porter's (1980, 1985) strategic approaches (differentiation or low-cost) were most effective in terms of self-reported organisational performance for Spanish companies during the economic and financial crisis

3 subsequently, the third objective is to identify what group of performance measures (financial or non-financial) was considered most appropriate during this period, and what its impact on performance was

4 lastly, the fourth research objective is to find out if the alignment of strategy and performance measures resulted in a better organisational performance for Spanish firms from 2008 to 2010.

To address the research objectives outlined above, the paper is organised into a series of interrelated sections. First, I review extant literature salient to the issues previously mentioned. Second, I describe my methodology for exploring these issues. Third, I summarise and discuss the results of my analyses. Finally, I make some concluding remarks, describe the study's limitations, and offer various practical and research-based recommendations.

2 Literature review

2.1 Environment

Organisations operate in a symbiotic relationship with their environments (Khandwalla, 1977). Khandwalla (1977) describes five environmental characteristics – turbulence or dynamism, hostility, diversity or heterogeneity, technical complexity, and restrictiveness – which may be affected by managerial perceptions. He suggests that the external environment is a source of constraints, contingencies, problems, and opportunities. Companies must therefore adapt to the ways in which the environment changes; these environmental changes influence not only organisations' structures but also their strategies.

Govindarajan argued that organisational effectiveness relies on the perfect integration of an organisation and its environment, and he defined environmental uncertainty as "the unpredictability in the actions of the customers, suppliers, competitors, and regulatory groups that comprise the external environment of the business unit" [Govindarajan, (1984), p.127].

The Spanish economy underwent a period of sustained growth between 1994 and 2007; during this period, Spain's economy developed at a faster rate than those of other advanced economies (Fernández-Villaverde and Ohanian, 2010). This period of global prosperity and price stability contributed to the real estate boom. However, this boom was largely tempered by the eventual subprime crisis that affected a number of economies worldwide. Because of Spain's limited commercialisation of financial products related to the subprime crisis, the country was largely unaffected by the crisis itself. However, the international liquidity crisis incited a greater attention to the assessment of underlying risks (Alvarez, 2008). In Spain, the banking system was highly concentrated; banks controlled equity positions in companies with which they also maintained large credits, and the majority of their lending activities were concentrated in the real state sector (Fernández-Villaverde and Ohanian, 2010). Then drops in housing prices caused the burst of the housing-market bubble, thereby precipitating the dramatic fall of the Spanish economy, beginning in the spring of 2008. This downfall of the Spanish economy led to a decrease in domestic demand, deflation, growing unemployment, and financial difficulties in Spanish financial institutions.

There are no studies at all about PEU during economic and financial crises, and few of those that exist on Spain are regionally delimited. For example, Oreja-Rodríguez and Yanes-Estévez (2007) analysed the level of PEU of 34 tourism firms which operated in the Canary Islands from January to April 2004. The authors found that perception of uncertainty was linked to dynamism and complexity thanks to variables such as demand situation, demand income and competitors. Subsequently, Yanes-Estévez et al. (2010) surveyed 74 managers of firms belonging to the agrifood[2] supply chain in the Canary Islands. The typologies intrinsic to the survey represent perceptions of environmental uncertainty in terms of diversity and complexity. Yanes-Estévez et al. (2010) concluded that managers of firms in the agriculture and agrifood industries had perceived low (agriculture industry) and moderately low (agrifood industry) levels of environmental uncertainty from February to June 2003. Similarly, managers within the distribution sector perceived their environment to be relatively stable (low levels of PEU). However, their findings should be considered as mere indicators rather than statistically supported evidence, as they did not achieve statistical significance. Yanes-Estévez et al. (2013) also studied 142 small and medium size companies in the Canary Islands. They found that the majority of companies perceived that the business environment in 2005 was characterised by low uncertainty. Those who perceived their environment as complex placed more emphasis on external networks with customers and suppliers in order to address this.

In a study of ecological issues, López-Gamero et al. (2011) explored the relationship between PEU and the natural environment. Using a interviews, direct observation and internal documents for the period 1997–2003, they analysed eight Spanish firms from Murcia, Girona, Valencia (two companies), Barcelona (two companies) and Madrid (two companies), which produced differing levels of pollution and came from different sectors (primary, secondary or tertiary). The authors concluded that company managers in the food, agriculture and waste management industries believed there to be high levels of environmental uncertainty in their customers' preferences, environmental technology, and their competitors' actions, as a consequence of their intensive use of natural resources. In contrast, managers of companies that specialise in new technologies believed there to be low levels of environmental uncertainty.

With an interest in family firms, Casillas et al. (2011) analysed 317 companies in Andalusia (Spain). Data from a survey conducted in 2004 showed that environmental

dynamism played a moderating role when next generations took part in entrepreneurial activities. Moreover, environmental hostility was positively associated with risk-taking attitudes and negatively associated with proactiveness.

The 2010 Encuesta Sobre Estrategias Empresariales (ESEE; Survey of Business Strategies) survey (Fundación SEPI, 2011) also provides useful information regarding company perceptions of their business environment. It showed that between 2008 and 2010 the extent to which manufacturing companies of fewer than 200 employees believed the market to be in recession varied. In 2008, 50.3% of firms thought the market to be in recession; this figure grew to 60.5% in 2009, but by 2010 the figure had dropped to 51.9%. Companies with more than 200 employees had a more optimistic outlook: only 17.1% in 2008, 9.1% in 2009, and 16.9% in 2010 of these companies perceived the market to be in recession over those years.

2.2 Strategy

Organisations implement business strategies to adapt to their surrounding environment and plan how to attain competitive advantage and their long-term organisational goals of survival and growth. Johnson et al. (2008) explained that organisations consider their stakeholders' expectations in establishing the long-term direction, but only after the organisations have analysed their resources and competencies in relation to their surrounding environment as a means of identifying their competitive advantage.

Owing to the importance of aligning environmental conditions and strategy, there is interest in the environmental conditions under which firms operate and the strategies they implement (Porter, 1980). The effect of the business environment on a firm's performance is palpable throughout the process through which business strategy is formulated and implemented.

A number of researchers, such as Miles et al. (1978), have considered elements of the business environment in defining generic strategies. Other researchers analysed the organisational use of strategies based on the magnitude of environmental uncertainty. For example, Miller (1988) explored the match between organisational strategy and the business environment, which he analysed using Khandwalla's (1977) attributes. Miller's (1988) study provided evidence of there being a positive correlation between innovation, product differentiation, and environmental uncertainty in successful companies, characterised by dynamism and unpredictability. Miller (1988) also found evidence of there being a negative relationship between a cost leadership strategy and environmental uncertainty. Ultimately, Miller (1988) argued that environmental unpredictability and change generates price competition, which is incompatible with the necessary economies of scale when pursuing a low-cost strategy. Miller's results did not provide statistical support for this assertion, however. Similarly, Miller's (1988) work provided no evidence of there being an association between focus strategy and market heterogeneity.

Hernández-Espallardo and Delgado-Ballester (2009) employed Porter's five competitive forces – extant competitors, potential entrants, suppliers, buyers, and substitute products or services – to gauge organisational pressure (i.e., PEU) that Spanish firms face. These researchers investigated the influence of product innovation on the effectiveness of small manufacturing companies from the region of Murcia. Interviews with top executives of these companies revealed that when companies faced competitive forces, a relationship between product innovation (i.e., differentiation) and performance

emerged. However, and in contrast to past research in this domain, the authors failed to find evidence to support the belief that product innovation affects organisational performance when the pressures from competitive forces are low.

A business environment characterised by economic and financial crisis can threaten a firm's survival, and therefore influence the strategies employed by managers of companies that operate within it. To explore this possibility, Collins et al. (1997) analysed the effects of Latin American societal crisis on strategy choice and budget use. They measured general business outlook, the conditions that threatened a firm's survival, the state of crisis, and job security to assess the perceived crisis. As the authors predicted, the choice of a defender (avid for stability and staunch maintenance of their market position) or reactor (responding to events without adhering to a specific market approach) strategy was positively associated with perceptions of societal crisis. In contrast, firms that adopted a prospector strategy (searching for new products or services and market opportunities) or analyser strategy (copying successful products or services and market opportunities) were less likely to believe there was societal crisis. In similar research, Latham (2009) studied American software companies during the economic recession of 2001 to 2003. He demonstrated that whereas large firms tend to use cost-reduction strategies to incite financial turnaround, start-ups were more heavily associated with revenue-generating strategies. More recently, Endenich (2014) analysed changes in management accounting practices related to the onset of economic crisis. Although Endenich's (2014) findings failed to achieve statistical significance, his interviews with nine German and nine Spanish senior management accounting executives qualitatively demonstrated that their emphasis on reducing costs (i.e., cost strategy) was associated with investment, human resources, and production processes from May 2010 to April 2011. Endenich's (2014) interviews further showed that Spanish companies prioritised the maintenance of liquidity during the financial crisis. Both German and Spanish executives conceded that regardless of the strategies they implemented, their companies were unprepared to address the financial crisis satisfactorily.

In an analysis of the Spanish hospitality sector, Alonso-Almeida and Bremser (2013) surveyed a large proportion of the hotels in Madrid and performed a number of descriptive and factorial analyses. Ultimately, the authors sought to explore the influence of the financial crisis on hotels in 2009. More specifically the authors sought to describe the measures the hotels took to address the crisis, and analyse the effects of the crisis on the hotels' financial performance (measured in the variation in hotel prices). Through this study (and consistent with Porter's differentiation strategy), Alonso-Almeida and Bremser (2013) found that hotels that emphasise their high quality, maintain a positive brand image, and retain loyal customers perform better in times of crisis than those that do not. The authors additionally found that hotels largely implemented proactive measures (such as increasing their marketing expenses) to address the recession out of fear that cost-cutting strategies could jeopardise their competitive position. This inference was empirically supported: Alonso-Almeida and Bremser (2013) found that hotels that implemented cost-cutting measures tended to perform worst.

Simon-Elorz et al. (2015) studied the wineries of Castilla-La Mancha (Spain) between 2004 and 2010. After analysing the financial information of 102 companies, the authors concluded that the focus on avid exporting strategies involved an evolution from marketing strategies to financial strategies during the economic crisis. Hence, competition in foreign markets was based on a cost leadership strategy. As a consequence of the adoption of this cost approach, business performance was affected negatively.

These authors also remarked that traditional wineries were better positioned to deal with price competition than newly created ones because of their reduced production costs, and the newly created wineries had overestimated their initial price and consumption expectations.

Strategies must be monitored by using certain performance indicators, which allow organisations to determine not only whether operational goals are being attained, but also whether companies' strategies should be adjusted to accommodate changes in the organisational environment.

2.3 Performance measures

Organisations need "a feedback process of planning, objective setting, monitoring, feedback, and corrective action to ensure that outcomes are in accordance with plans" [Simons, (1990), p.128], a process known as management control. Given this need, businesses often use formal and information-based routines, systems and procedures to determine whether they should retain or change certain types of organisational activity [Simons, 1990; Simons (1995) cited in Langfield-Smith (2007, p.754)]. These routines, systems, and procedures are often collectively referred to as management control systems (MCS) (Henri, 2006).

Performance measurement systems (PMS) are critical elements of MCS. PMS have been defined as "a set of metrics used to quantify both the efficiency and effectiveness of actions" [Neely (1994) cited in Neely et al. (2005, p.1229)]. These metrics can be classified as financial or non-financial, internal or external to the organisation, short- or long-term focused and ex-ante or ex-post. Organisations use multi-perspective frameworks that incorporate a range of financial and non-financial performance measures to indicate the degree to which specific goals are met (Langfield-Smith, 2007). These types of frameworks are commonly referred to as strategic PMS (Langfield-Smith, 2007).

Extant research on performance measures and strategy has adopted one of two approaches (Ittner et al., 2003). The first approach is a diversity approach; this involves the use of a variety of financial and non-financial performance measures to achieve superior performance. Ittner et al. (2003) and van der Stede et al. (2006) have advocated this approach. Second is the alignment approach, which is based on contingency theory. This assumes that PMS should be designed in accordance with an organisation's strategy. However, some researchers have failed to find support for this relationship. For example, Verbeeten and Boons (2009) failed to produce empirical evidence for the relationship between PMS and organisational strategy. The authors explained that may have been attributable to the use of different performance measures when organisations have different priorities; whereas organisations that prioritise growth use non-financial performance measures, organisations that prioritise financial performance tend to use financial performance indicators. In their study of Dutch manufacturing firms, Lillis and van Veen-Dirks (2008) found that companies that adhere to a differentiation strategy used efficiency and financial measures to assess manufacturing performance. The authors posited that these measures were used as monitoring and control tools over differentiation strategy.

Researchers on Porter's (1980, 1985) strategies and performance measures have argued that there are two types of relationships. The first assumes that product differentiation can be achieved through uniqueness. Therefore, companies following a

differentiation strategy tend to emphasise non-financial performance measures. In contrast, because a cost leadership strategy can be pursued through economies of scale, companies that seek to be cost leaders tend to emphasise cost control (Porter, 1980), and thereby rely more heavily on financial performance metrics. Govindarajan (1988) found that better performing organisations which used a differentiation strategy tended to combine high managerial internal locus of control (the perception that rewards are within the manager's control) with a low emphasis on meeting budgets. More recently, Tsamenyi et al. (2011) arrived at similar conclusions. They demonstrated that companies that pursue a differentiation strategy made more intensive use of non-financial MCS, thereby improving organisational performance. The authors observed this same positive effect among companies pursuing a low-cost strategy which employed financial-based MCS.

In an effort to identify the qualities of non-financial information that managers perceived as useful, analyse whether changes in context would affect managers' perceptions, and determine whether perceptions of usefulness were related to the use of non-financial information, Aranda-León et al. (2008) investigated 31 manufacturing firms from Navarra (Spain) that had a turnover greater than €40 million. They concluded that adherents to cost-based strategies used non-financial performance measures because of their reliability. This enhanced the accuracy, analytical power, timeliness, clarity and instructiveness of their PMS. In contrast, firms that employed a differentiation strategy used non-financial performance indicators related to the factors deemed most critical for change. Aranda-León et al. (2008) concluded that different perceptions of usefulness typically resulted in different uses of non-financial information, despite similar perceptions of its relevance.

Not only strategy but also the business environment can influence the adoption of certain types of performance measures. Several researchers have asserted that companies have historically used financial and formal controls in conjunction with budgets to cope with uncertain external environments (Chenhall, 2003). For instance, in one of the most prominent studies in this domain, Simons (1987) found a positive relationship between Khandwalla's (1977) industry dynamism characteristic and return on investment for prospectors. Among companies that adopted a defender strategy, however, this relationship was negative. Simons (1987) also found that high performing organisations emphasised forecast data, tight budget goals, and output monitoring, but he neglected to explicate the possible reasons why these particular attributes may contribute to organisational success (Langfield-Smith, 2007).

Some studies have provided evidence against the widespread assumption that environmental uncertainty is related to financial performance. For example, Govindarajan (1984) demonstrated that there is a significant, positive relationship between environmental uncertainty and the use of subjective assessments in performance evaluation. In contrast, when environmental uncertainty was low, firms tended to use financial data to inform performance evaluations. Govindarajan (1984) revealed that among effective companies there was a significant association between environmental uncertainty and the subjective calculation of bonuses. Ultimately, these results led him to conclude that subjective evaluations were a stronger predictor of organisational effectiveness than formula-based evaluations. Although results to support this assertion were not statistically significant, these findings were consistent with those found by Gordon and Narayanan (1984), Chenhall and Morris (1986), Gul (1991) and Gul and Chia (1994). Later, Hoque (2005) studied 52 manufacturing companies in New Zealand,

adapting Khandwalla (1972), Govindarajan (1984) and Gordon and Narayanan's (1984) environmental measures. Hoque (2005) concluded that the use of non-financial performance measures was positively associated with organisational performance under a business environment characterised by uncertainty. The prevalent non-financial performance measures were those related to customer perspective, internal business processes, and growth.

A business environment characterised by economic crisis can also influence the choice of performance measures. The previously mentioned Collins et al.'s (1997) study during a societal crisis provided evidence to suggest that because prospectors attribute importance to forecast controls, companies following a prospector strategy made extensive use of budgets to settle financial goals, plan, coordinate operations, measure performance, and demonstrate authority. Through two time-lagged quantitative and qualitative studies, Janke et al. (2014) analysed 332 cases obtained from German, Austrian, and French companies in spring 2009 and fall 2010. They concluded that the change in the interactive use of MCS was positively associated with economic crisis. This change was justified by a forward-looking use of cash flows, forecasts and budgeting, which sought medium- and long-term solutions after an initial shock phase. Furthermore, the perception of the negative consequences of the economic crisis was positively linked to change in the interactive use of MCS. Janke et al. (2014) assumed this change to be caused by a rise in consciousness of the adverse outcomes of the economic crisis. Recently, Pavlatos and Kostakis (2015) investigated the effect of the Greek economic crisis on management accounting practices. They found that during the economic crisis, activity-based costing systems, planning, strategy and strategic management accounting techniques gained in prominence, and the use of traditional cost accounting techniques declined. Budgeting techniques remained in use during the economic crisis in Greece.

In one of the few examples of scholarship in the Spanish context, Li et al. (2011) explored how small- and medium-sized enterprises in the furniture and agricultural industries responded to economic crises. Their study was limited to firms in the Catalonian region between 2004 and 2008. Using secondary financial data drawn from the Iberian Balance Sheet Analysis System (SABI), Li and his colleagues speculated about the possible causes of the evolution of their key financial indicators. For example, they indicated that variation in fixed assets among firms in the furniture sector could be attributed to attempts to increase productivity. Changes in return on assets (ROA) and return on equity (ROE) in the agricultural sector in 2007 were caused by a poor harvest. The authors further interpreted decreases in the liquidity ratios of firms in both sectors as indicative of the firms' conservative approach (though the agricultural sector was considered to be more flexible than the furniture sector). Finally, the authors explained that both sectors are vulnerable to crisis as a result of their high percentages of gearing.

In line with Collins et al.'s (1997) research, Lorain et al. (2015) studied the evolution and adaptation of budgeting practices in Spain between 2008 and 2013. From their analysis of the environment, they concluded that the ability to provide accurate financial forecasts in an uncertain environment worsened between 2008 and 2013. Although they were useful in an unstable and turbulent environment, budgets became outdated as soon as they were approved. It was therefore necessary to increase the flexibility and frequency of budget reviews. Changes in budgets were explained by unexpected events, customers' actions, and poor prediction reliability in 2013. Lack of environmental information was among the main causes of change in budgets enumerated in 2008. Lorain

et al. (2015) concluded that budgeting was widely employed in 2008 and 2013. There was an increase in the formalisation of budgeting and link with strategic planning. This involved increasing emphasis on the preparation stage and the analysis of cost variances in order to monitor performance through cost control.

Taken together, the research outlined in the previous sections suggests that there are complex relationships between PEU, strategy, and performance measures, so these variables cannot be considered in isolation. The natural evolution of research in this field demanded the exploration of whether and how strategy and performance measures can be aligned to optimise organisational effectiveness, given different levels of PEU.

2.4 Environment, strategy and performance measures

Despite the lack of studies concentrating on economic and financial crises, various researchers have examined the associations between PEU, strategy, and performance measures outside this context. For example, Chong and Chong (1997) found evidence to support the notion that both strategic priorities and PEU are determinants of the performance of strategic business units (SBUs). The authors provided evidence of there being a positive association between PEU, a broad scope (external, financial and future-oriented) of management accounting systems (MAS) and performance. These results supported the conclusions of Gul (1991) and Gul and Chia (1994). Chong and Chong (1997) additionally concluded that SBU strategy and PEU both influence MAS design, and that the broad scope of MAS information contributes to SBU performance.

Baines and Langfield-Smith (2003) explored whether changes in the external environment would lead manufacturing companies to change their strategy, organisational design, manufacturing technology practices, or management accounting practices. They found that firms facing a competitive environment tended to use a differentiation strategy, which involved increasing their use of advanced manufacturing technology and management accounting practices, and more variation in organisational design. Changes to organisational structure resulted in a greater reliance on non-financial information, which in turn enhanced organisational performance.

Consistent with previous research, Hoque (2004) found that the alignment of strategic priorities with appropriate performance indicators resulted in improved organisational performance. However, Hoque (2004) neglected to find empirical support for a positive relationship between perceived uncertainty – characterised by the unpredictability of deregulation and globalisation, competence, customer preferences and technology – and dependence on non-financial performance measures as reported by Govindarajan (1984) and Gordon and Narayanan (1984).

The growing prominence of the Chinese economy in the global economy has caused several authors to focus their empirical efforts on China. For example, Tan and Litschert (1994) found that under conditions of high environmental complexity and dynamism, managers preferred to adopt a defensive strategic orientation and use profitability as the primary indicator of firm performance. In contrast, managers tended to avoid proactive strategies when they perceived environmental uncertainty. In a more recent study of Chinese firms, Fleming et al. (2009) found that firms that perceive there to be substantial environmental uncertainty and competition put less emphasis on growth strategies and made greater use of integrated PMS. As a consequence, these firms performed better than firms that adopted alternative strategies. Interestingly, Chinese managers' strategic responses to PEU (combining a cost approach with financial performance measures) are

often completely different from those observed in research on Western countries [Fleming et al., (2009), p.274].

3 Research methodology

3.1 Sample selection and data collection

This research is centred on the first three years of the financial crisis, with the sampling period between January 2008 and December 2010. Unlike other research on the Spanish economic crisis, this analysis did not focus on any specific industry or region within Spain. My findings can therefore be generalised to other industries. Because large firms and groups are likely to have established strategies and therefore use different types of performance measures (Kaplan and Norton, 1992), the sample was limited to firms that are twice the size of 'large companies' as described by the European Commission Recommendation 2003/361/EC. To obtain a sample of firms that meet these criteria, the SABI database was used. The SABI database contains financial information about Spanish and Portuguese companies from 1990 to today. The SABI database provided me with a population of 649 organisations that met my criteria. Fifteen firms were removed from the sample because they were public companies or had ceased trading, leaving a population of 634 companies from which to draw the sample. Of the 634 organisations in the population, 367 (58%) were selected for the sample because their contact information was available, which allowed me to provide the organisations with the data collection instrument.

To gather the necessary data, a survey was mailed to prospective sample firms. The survey was constructed (and translated into Spanish) after reviewing salient literature to inform its development and piloting with financial managers and auditors. After evaluating the questionnaire's clarity and utility, as well as making revisions following pilot testers' suggestions, the final iteration of the questionnaire (Appendix) was mailed to chief financial officers, senior managers, or financial controllers. Although the survey could have been administered to any number of personnel within the sample organisations, the questionnaires were sent to these individuals because they have a nuanced understanding of their organisations' respective strategies (Pertusa-Ortega et al., 2009), and therefore are well aware of the organisation's methods for gauging performance. I sent 206 (56%) respondents a pre-notice email via the LinkedIn professional social networking site.

There are often low rates of response to surveys distributed within Spain [ranging from less than 10% to 20%; Ortega (1992) cited in Alvarez-Dardet et al. (2003, p.35); Pertusa-Ortega et al., 2009], so respondents were offered a small incentive to complete the surveys in order to increase the response rate [consistent with Dillman et al. (2009) and Naranjo-Gil (2006)]. I offered to make a one-euro donation to a Spanish Red Cross campaign of the respondent's choosing if they completed the questionnaire. Finally, I sent a thank-you email to all respondents.

3.2 Statistical methodology

I carried out a number of statistical analyses to achieve the research objectives outlined above. First, to verify the internal reliability of the scales intrinsic to the questionnaire, I

calculated Cronbach's alpha for each scale. Second, I evaluated multiple descriptive statistics (e.g., statistics of central tendency – mean and mode) associated with some cross-sections of the data. In addition, before performing any inferential statistical test, I carried out a non-parametric Kolmogorov-Smirnov test to ascertain the degree to which salient variables were normally distributed. Once the normality of the variables was determined, I performed correlational analyses to demonstrate the degree to which the variables covary. Then for predictive models in which multiple independent variables predicted a single outcome variable, I performed multiple linear regression analyses. All statistical tests were performed using IBM's Statistical Package for the Social Sciences (v. 20).

3.3 Variable measurement

3.3.1 Environmental uncertainty

As they are fundamental for this research, the characteristics of the business environment during the 2008–2010 period need to be clarified. To measure PEU, I adapted an instrument developed by Khandwalla (1972, 1977). This instrument was intended to gauge respondents' perceptions of their organisation's environment between 2008 and 2010. The items that comprise this instrument were seven five-point Likert scales related to price competition; new products or services within the firm; environmental stability; predictability of competitors and consumer preferences; legal, political, and economic constraints; and emergence of innovations. To generate a single score for overall PEU, I averaged the seven responses for each participant (higher average scores indicated higher levels of PEU). According to Field (2005), the reliability estimate for an overall PEU scale was poor (α = .45), so I removed two items from the composite PEU index: competition for manpower and bidding for purchases or raw materials. After this modification, the reliability estimate for the scale improved (α = .67), closer to the lower limit of the interval that Field (2005) deemed acceptable (.7–.9).

3.3.2 Business strategy

After analysing the level of PEU and its characteristics, the second goal of this study was to investigate the business strategy followed by Spanish companies during the analysed period. Porter's (1980, 1985) framework is used for this study because of its inherent simplicity and the ease with which managers can understand it (Miller and Dess, 1993). To measure the business strategies of respondents' companies, the technique employed by Tsamenyi et al. (2011) was used. Specifically, I requested that respondents judge their products and/or services in relation to the products and/or services of their leading competitor between 2008 and 2010. Then the responses were averaged to develop a composite index for identifying business strategy. An average score of 3 indicates that the respondent's company adopted a strategy similar to its competitors; an average score lower than 3 suggests that the company followed a cost leadership approach; and an average score higher than 3 suggests that the company focused on differentiation. The reliability estimate for this scale was high (α = .87).

In line with Mintzberg and Waters' (1985) deliberate and emergent strategies, this section of the questionnaire mailed to prospective sample firms also asked respondents to state whether they considered the aforementioned strategic dimensions when formulating

strategy and, if so, whether they were part of a realised or intended strategy, thereby making a distinction that needs to be investigated (Langfield-Smith, 2007).

3.3.3 Performance measures

The third objective of this study was to examine the type of performance measures considered most important by Spanish firms between 2008 and 2010. Scott and Tiessen (1999) developed a means for identifying the types of performance measures that companies use to gauge the degree to which they are meeting business objectives. I reviewed the research by Perera et al. (1997) and Li et al. (2011) to adapt Scott and Tiessen's (1999) work to the current study by incorporating questions related to six categories of performance: financial, productivity, quality, service, innovation and personnel. In total, 18 measures of performance were incorporated into the questionnaire (nine financial, nine non-financial). In the survey respondents were asked to rank various performance measures by importance for the years 2008–2010. The most important type of performance measures across all respondents was determined by calculating the average rank for each group (financial or non-financial) of items. Because of the low reliability estimate for the financial performance measure subscale, market share and profitability ratios were removed from the analysis, thereby raising the estimate from .53 to .68.

3.3.4 Organisational performance

The majority of the research objectives revolve around the relationship between strategy and performance measures and organisational performance. This was assessed by measuring how effective respondents though their organisation to be, using a weighted average performance index calculated from two measurements. First, respondents were asked to assess the performance of their organisations relative to their leading competitor. Unlike Tsamenyi et al.'s (2011) method, I used 16 dimensions (Appendix) on which respondents rated their respective companies. To compare their respective companies with their leading competitor, respondents addressed each dimension by responding to Likert-type scales ranging from 1 (significantly worse) to 5 (significantly better).

Second, consistent with Govindarajan and Gupta (1985) and Govindarajan (1988), respondents were asked to compare the performance of their organisations at the end of the sample period with their a priori expectations. Similar to the other measure of organisational performance, participants responded to 16 Likert-type scales (one for each aforementioned dimension) ranging from 1 (significantly worse than anticipated) to 5 (significantly better than anticipated). To operationalise the overall performance of the company, the results of the two measures were averaged.

Finally, like Ittner et al. (2003) and Verbeeten and Boons (2009), I used secondary quantitative data to increase confidence in the validity of the responses through the reduction of bias due to social desirability effects, comparing respondents' reports of financial performance with their respective firms' actual financial performance as reported in the SABI database. The overall Cronbach's alpha of the organisational performance items was quite high ($\alpha = .92$).

4 Results and discussion

Of the 367 questionnaires sent to potential respondents, 43 (11.7%) were returned. This response rate is within what Ortega (1992) cited in Alvarez-Dardet et al. (2003, p.35) dubbed the normal response rate in Spain (10–20%). Five companies declined to participate. The distribution of the responses by industry is summarised in Table 1.

Table 1 Responses by industry

Industry[a]	*No. of companies*	*Percentage*
Agricultural	1	2.3%
Manufacturing	15	34.9%
Building	5	11.6%
Services	22	51.2%
Total	43	100%

Note: [a]According to 2009 Spanish Code of Economic Activities.

Of the 43 returned surveys, 21 (48.8%) were completed by chief financial officers, 11 (25.6%) were completed by other business managers, one (2.3%) respondent was a control manager, and one (2.3%) participant held another type of position. Nine (20.9%) respondents neglected to disclose their positions. On average, respondents had served in their current position for 7.57 years, and had been with the same company for an average of 11.21 years.

Table 2 Descriptive statistics for perceived environmental uncertainty

	Mean	*Mode*	*Standard deviation*
Price competition	3.93	4	1.07
New products/services in industry	3.26	4	1.15
Economic	*4.30*	*5*	*.96*
Technological	*2.86*	*3*	*1.13*
Stability of environment	3.59	3.50	.83
Predictability of competitors	2.90	2	1.09
Predictability of consumer preferences	3.29	3	1.01
Legal	*2.93*	*4*	*1.36*
Political	*2.83*	*2*	*1.43*
Economic	*3.86*	*4 and 5*	*1.22*
Legal, political and economic constraints	3.20	3.33	1.14
Emergence of innovations	3	2	.98
Overall PEU	3.31	3.40	.56

4.1 Environmental uncertainty

The first objective of this research is to examine the level and characteristics of PEU during a time of economic and financial crisis. Table 2 illustrates that across the entire

sample, PEU was 3.31 (SD = .56), indicating that, on average, respondents perceived their respective environments to be uncertain.

A disaggregated analysis of PEU illustrated that respondents perceived their economic environments to be defined by instability, price competition, and economic constraints. Analysed using Khandwalla's (1977) environmental attributes, these results show that respondents perceived their environments to be characterised by high levels of dynamism, hostility, and restrictiveness. These results are consistent with results reported by the ESEE survey (Fundación SEPI, 2011) on the nature of recessive markets and rises in prices.

4.2 Strategy

I classified companies according to one of Porter's generic strategies based on their average strategic approach: 70.7% of respondents reported that their organisation pursued a differentiation strategy, 17.7% adopted a cost leadership strategy, and the remaining 12.2% mimicked the strategy practised by their leading competitor. Results showed that a differentiation strategy was pervasive among firms in all industries: 86% of those in manufacturing industries, 80% in building industries, 57% in service industries, and 100% in agricultural industries. Results reported in Table 3 concerning strategy type across all firms (μ = 3.29, SD = .61) show there was a general, though marginal, predilection for a differentiation strategy.

Results also showed that firms emphasised quality, features, and after-sales service to differentiate their products and/or services. These results were somewhat unsurprising, given Porter's prediction (1980, 1985) that differentiation is especially important in environments characterised by uncertainty and dynamism. These results are also consistent with those produced by Alonso-Almeida and Bremser (2013) during the economic crisis. They are also comparable to the conclusions reached by Miller (1988) and Hernández-Espallardo and Delgado-Ballester (2009) in their studies of uncertain environments, but are contrary to the change to cost strategies proposed by Latham (2009), Endenich (2014) and Simon-Elorz et al. (2015).

Table 3 Descriptive statistics for strategy

	Mean	*Mode*	*Standard deviation*
Product/service price	3.15	3	1.01
Research & development over sales	3.08	3	1.03
Brand identification of company	3.24	4	1.04
Product/service development activities	3.37	3	.99
Rate of change of designs	3.12	3	.94
Product/service delivery standards	3.06	3	.86
Product/service quality	3.68	3	.79
After-sales service	3.56	3	.93
Product/service features	3.58	3	.75
Overall strategy	3.29	3.33	.61

In the execution of their respective strategies in the period between 2008 and 2010, a large majority (85.7%) of respondents when developing and implementing their strategy considered the characteristics of the surveyed business strategy, 7.1% did not consider them, and the remaining 7.1% considered them when planning their strategies, but never implemented them.

The choice of differentiation strategy could be associated with the levels of environmental uncertainty perceived by managers during the existing economic and financial crisis. Table 4 shows that a company's strategic approach and PEU are significantly and positively correlated (Pearson's $r = .372$, $p < .05$), suggesting that there was a positive association between Spanish managers' perceptions of PEU and their firm's decisions to pursue a differentiation strategy between 2008 and 2010.

Table 4 Correlations among environment, strategy, performance measures and performance

		Environment	*Strategy*	*Financial performance measures*	*Non-financial performance measures*	*Performance*
Environment	Pearson	1				
	Sig.					
	N	43				
Strategy	Pearson	.372*	1			
	Sig.	.017				
	N	41	41			
Financial performance measures	Pearson	–.092	–.157	1		
	Sig.	.563	.333			
	N	42	40	42		
Non-financial performance measures	Pearson	.197	.082	–.437**	1	
	Sig.	.223	.627	.005		
	N	40	38	40	40	
Performance	Pearson	.181	.467**	–.145	–.022	1
	Sig.	.252	.002	.361	.891	
	N	42	40	42	40	42

Notes: *Correlation is significant at the .05 level (2-tailed).
**Correlation is significant at the .01 level (2-tailed).

4.3 Performance measures

Only 9.5% of the respondents ranked non-financial performance measures to be more important than financial measures. Table 5 summarises the descriptive statistics associated with the items intended to gauge performance, and shows that the top seven ranked performance measures were financial in kind.

Table 5 Descriptive statistics for performance measures

	Rank	*Mean*	*Mode*	*Standard deviation*
Profit margin	1	2.88	1	2.65
Sales	2	3.44	1	3.03
Cash flow from operations	3	5.44	1–3	4.23
Cost per unit produced/sold or service provided	4	6.39	6	3.08
Working capital	5	7.35	6	4.63
Solvency ratios	6	8.55	5	4.65
Liquidity ratios	7	8.95	8	4.18
Output per employee or per labour-hour or per unit of raw material	8	9.78	9–13	3.76
Number of customer complaints	9	10.63	13	3.99
Survey of customer satisfaction	10	10.72	10 and 11	3.96
Percentage of sales or sales level attributable to developing new markets for existing products or services	11	11.79	10	4.11
Percentage of product or service delivered on time	12	11.83	11, 12 and 15	3.80
Percentage of sales or sales level attributable to new products or services	13	12.06	16	3.76
Percentage of defective products	14	12.76	14	3.66
Survey of employee satisfaction	15	13.43	17	3.68
Number of hours of personnel training and development	16	14.97	17 and 18	3.04

The priority given to financial performance measures may be related to the selected differentiation strategic approach. The results outlined above are comparable to Lillis and van Veen-Dirks' outcomes (2008), but contradict and Aranda-León et al.'s (2008) findings. Moreover, the importance attached to financial performance measures runs contrary to that of Porter (1980, 1985), Govindarajan (1988) and Tsamenyi et al. (2011) who found there was a match between the differentiation approach and the use of non-financial performance measures. Verbeeteen and Boons (2009) suggested that the importance attributed to financial performance measures may be explained by the strategic importance of financial performance under conditions of economic crisis. As shown in Table 4, the Pearson's correlation coefficients for the respective relationships between financial and non-financial performance measures and the pursuit of a differentiation strategy are –.157 and .082. Regardless, results did not provide any significant evidence suggesting an association between any type of performance measure and a strategic approach.

The selection of particular types of performance measures can be influenced not only by the strategy a company pursues but also by the business environment. The importance that respondents attributed to various types of financial performance measures may have been a natural response to crisis. This would be in line with Chenhall's rationale (2003), and in accordance with the findings of Collins et al. (1997), Janke et al. (2014) and Pavlatos and Kostakis (2015). However, results do not back this claim: the correlations between PEU and financial and non-financial performance measures were quite low (–.092 and .197, respectively; see Table 4) and not statistically significant.

Table 6 Descriptive statistics for organisational performance

	Compared with leading competitor			*Compared with forecasts*		
	Mean	*Mode*	*Standard deviation*	*Mean*	*Mode*	*Standard deviation*
Sales	3.51	4	1.07	2.83	3	.98
Market share	3.51	4	1.02	3.20	3	.92
Market development	3.34	3	.93	3.10	4	.90
Net profit	3.34	4	1.03	2.83	2	1.01
Profit margin	3.54	4	.92	2.88	2	.99
Cash flow from operations	3.50	3	.87	2.90	2	.98
Market value of the company's share	3.08	4	1.21	2.41	2	.94
Working capital	3.39	4	.94	2.95	3	.85
Liquidity ratios	3.42	4	1.07	3.03	3	.91
Gearing	3.18	4	1.22	2.95	3	.89
Economic profitability	3.44	4	.96	2.85	3	.82
Financial profitability	3.39	4	1.05	2.85	3	.83
Development of new products and/or services	3.32	3	.97	3.11	3	.79
Material and labour efficiency or productivity	3.56	4	.86	3.26	3	.82
Personnel training and development	3.12	4	1.06	3.07	3	.68
Marketing and public relations	3.09	3	1.16	3.10	3	.71
Organisational performance	*3.38*	*2.75*	*.70*	*2.97*	*3*	*.56*

	Mean	*Mode*	*Standard deviation*
Overall organisational performance	*3.17*	*3.25*	*.51*

4.4 Organisational performance

All of the research objectives of this study relate to the organisational performance of Spanish firms between 2008 and 2010. To this end, descriptive statistics reported in Table 6 show that the surveyed organisations claimed to perform slightly better than their

leading competitors (μ = 3.38, SD = .70). Respondents reported that material and labour productivity, profit margin, market share and sales performance of their organisations were better than their nearest competitor. The results also suggest that the actual organisational performance of the surveyed companies was slightly worse than anticipated between 2008 and 2010 (μ = 2.97, SD = .56), especially the market value of the company's shares, sales and net profit.

To obtain an unbiased view of organisational performance, managers' self-reports of company performance were compared with the companies' financial information as reported in the SABI database. Table 7 illustrates that between 2008 and 2010 gearing (financial leverage) increased in 77% of companies and economic profitability (operationalised as ROA) reduced. More than half of respondents experienced a decrease in net profit, financial profitability (operationalised as ROE), cash flows and sales in their companies. In line with Li et al.'s (2011) work, these results indicate that the generalised increase in gearing may provide evidence for the companies' vulnerability to the economic crisis. Moreover, and consistent with Endenich's (2014) findings, the declining liquidity ratios may be attributable to conservatism on the part of the companies (Li et al., 2011).

Table 7 Adverse evolution of performance indicators

Performance indicator	*No. companies*	*Percentage*
Sales	22	51%
Net profit	24	56%
Profit margin	21	49%
Cash flow	23	53%
Working capital	21	49%
Liquidity ratio	18	42%
Gearing	33	77%
Economic profitability (ROA)	32	74%
Financial profitability (ROE)	23	53%

Results summarised in Table 4 show that there is only a moderate relationship between the differentiation approach and self-reported performance (Pearson's r = .467, p < .01). This result is consistent with Alonso-Almeida and Bremser's findings (2013). However, there were no other significant relationships. Thus it cannot be confirmed whether the importance attached to financial performance measures had an impact on organisational performance, and if there is an alignment between differentiation strategy and financial performance measures (the third and fourth research objectives).

In line with the alignment theory, it can also be analysed the predictive value of PEU, strategic dimension and performance measures in self-reported organisational performance. The model (see Table 8) shows a multiple correlation coefficient of .489, a R2 of .239 (p = 054). The results of the linear regression model indicated that the standardised betas for PEU, strategic approach, financial performance measures and non-financial performance measures are .002, .475, –.068, and –.099, respectively. However, this model's low R2 value suggests that it has poor predictive power.

Table 8 Multiple linear regression: perceived environmental uncertainty, strategy, performance measures and organisational performance

Model summary					
R	*R square*		*Adjusted R square*	*Std. error of the estimate*	
.489	.239		.147	.49514	
ANOVA					
	Sum of square	*df.*	*Mean square*	*F*	*Sig.*
Regression	2.544	4	.636	2.595	.054
Residual	8.091	33	.245		
Total	10.635	37			
Coefficients					
	Unstandardised coefficients		*Standardised coefficients*	*t*	*Sig.*
	B	*Std. error*	*Beta*		
Constant	2.182	.819		2.666	.012
Environmental uncertainty	.002	.155	.002	.015	.988
Strategy	.405	.141	.475	2.872	.007
Financial	–.015	.039	–.068	–.394	.696
Non-financial	–.023	.040	–.099	–.577	.568

5 Conclusions, limitations and implications for future research

5.1 Conclusions

This research was based on the assumption that managers formulate their business strategies by considering the environment that surrounds it. This research makes progress in gaining a deeper insight into the characteristics of PEU during economic and financial crisis, a period neglected by PEU researchers, whose understanding is vitally important for developing appropriate strategies which could ensure the survival of a company. The findings demonstrate that Spanish managers perceived the external business environment to be dynamic, hostile, and restrictive during the first three years of the financial crisis (2008–2010). Economic factors (e.g., economic stability, price competition, and economic constraints) were significant determinants of PEU among Spanish managers.

Organisations employ business strategies to adapt to their surrounding environments. This study also found that the majority of Spanish firms pursued a differentiation strategy between 2008 and 2010. Miller (1986, 1988) found that organisations tend to use differentiation strategies when they perceived conditions of environmental uncertainty, and this study similarly found that differentiation strategies are positively (though weakly) related to PEU.

Strategies have to be monitored through the use of certain types of indicators. Several researchers – e.g., Simons (1987), Chenhall (2003) and Lillis and van Veen-Dirks (2008) – have challenged the assumption that companies use non-financial performance

measures extensively when they face high levels of PEU. Other researchers – e.g., Govindarajan (1988) and Aranda-León et al. (2008) – have demonstrated the existence of relationships between a differentiation strategy and the use of non-financial measures, as well as cost leadership strategies and financial measures. Similarly, and in line with Collins et al. (1997), Janke et al. (2014) and Pavlatos and Kostakis (2015), this research's findings suggest that Spanish managers consider financial performance measures to be more important than non-financial performance measures. Still other research – e.g., Baines and Langfield-Smith (2003) – has shown that when managers perceive there to be high environmental uncertainty, the use of a differentiation approach coupled with non-financial performance measures results in higher organisational performance.

Respondents in the current study reported that their organisations performed slightly better than their leading competitors, though not as well as expected. Interestingly, as Li et al. (2011) and Endenich (2014) found, a review of archived financial data suggests that the organisations did not perform as well as the respondents suggested: half of all companies surveyed in this research were negatively affected by the financial crisis. It is here where these research findings help us understand the best organisational response to crises, since in line with Alonso-Almeida and Bremser (2013), my results suggest that a company's pursuit of a differentiation strategy was significantly related to self-reported organisational performance between 2008 and 2010.

5.2 Limitations

Although this study provides a number of valuable insights into the nature of the relationships between PEU, organisational performance, and business strategies, it suffers from a few conceptual and methodological limitations. First, the size of the sample on which I performed my analyses was relatively low. This raises concerns about the validity and reliability of the study's findings. Second, the low reliability estimate for the environmental uncertainty scale (Khandwalla, 1972, 1977) suggests that the study may not reflect the contemporary business environment (Hoque, 2004), and could therefore benefit from being updated. Related to this, a company's choice of strategic approach may have been attributable to the fact that it was in the strategic implementation or development stage. It has been demonstrated that financial information gains in importance during strategic implementation while financial and non-financial information are emphasised throughout the development stage (Bhimani and Langfield-Smith, 2007). Moreover, the form these strategic approaches take in practice is heavily influenced by the stage of the life cycle in which the company exists and the specific industry in which it operates (Auzair and Langfield-Smith, 2005). Although these elements can affect a company's strategic choices, investigating them is beyond the scope of the current research. Fourth, there is some doubt associated with my method for measuring the use of performance measures (see Langfield-Smith, 2007). Although a large number of researchers have used closed-ended lists to gauge performance, it was inherently difficult to develop a closed-ended list that included all sample companies. Fifth, I used self-report measures of organisational performance. However, it is well established that self-report measures may be prone to social desirability effects and other subjective biases. As a consequence, self-reported organisational performance may have been higher (and of a more limited range) than performance figures that could be obtained from other means (Chong and Chong, 1997). I was able to mitigate this problem to some extent by

contrasting self-reported organisational performance with financial indicators obtained from archival data.

5.3 Implications for future research

Future research in this domain may benefit from addressing the limitations outlined in the previous section. Most notably, improving the response rate may generate clearer evidence of the relationships between salient variables. In addition, the current research may serve as a launching pad for further longitudinal research. First, it may be useful for future researchers to compare my findings with analogous figures from before the economic crisis (pre-2008) or after the economic crisis. Doing so may capture how Spanish managers' perceptions of environmental uncertainty evolved from the 2000s through the 2010s and provide a more nuanced understanding of how Spanish companies adapted to the 2008 financial crisis, and may be able to adapt to future crises effectively. Future researchers may benefit from comparing the strategic approaches outlined here, and examining whether a differentiation approach can protect against financial crisis effectively. Related to this, it would be beneficial for future scholars to test the conceptually established relationship between a differentiation business strategy and organisational performance during economic and financial crises.

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Notes

1 Management accounting (MA) is defined as "the application of the principles of accounting and financial management to create, protect, preserve and increase value for the stake holders of for-profit and not-for-profit enterprises in the public and private sectors. Management accounting is an integral part of management. It requires the identification, generation, presentation, interpretation and use of relevant information to: inform strategic decisions and formulate business strategy. Plan long, medium and short-run operations" [Eaton, (2005), p.18]. The set of techniques used by MA can be classified between traditional (budgeting, performance measures, divisional profit reports or cost-profit-volume) and contemporary (activity-based costing, balance performance measures, team-based performance measures, employee-based measures, and strategic planning) (Chenhall and Langfield-Smith, 1998). MA systems (MAS) involve the use of MA for goal achievement purposes. Management control systems (MCS) comprise MAS and other controls, such as personal or clan controls (Chenhall, 2003). MA, MAS and MCS are currently used synonymously (Chenhall, 2003).

2 Firms in the agrifood supply chain are "firms involved in the process of producing and distributing agrifood products for human consumption in a particular society" [Yanes-Estévez et al., (2010), p.690].

Appendix

Questionnaire

Business environment

1 Please, indicate on a scale of 1 to 5, the impact of the following variables on your company between 2008 and 2010.

	Very little impact				*Very much impact*	*N/A*
	1	*2*	*3*	*4*	*5*	
Bidding for purchases or raw materials	☐	☐	☐	☐	☐	☐
Competition for manpower	☐	☐	☐	☐	☐	☐
Price competition	☐	☐	☐	☐	☐	☐

2 Please, indicate on a scale of 1 to 5, the quantity of new products and/or services which were marketed by your company between 2008 and 2010.

	None				*Many*	*N/A*
	1	*2*	*3*	*4*	*5*	
New products and/or services	☐	☐	☐	☐	☐	☐

3 Please, indicate on a scale of 1 to 5, how stable or dynamic were the economic and technological environments surrounding your company between 2008 and 2010?

	Very stable				*Very dynamic*	*N/A*
	1	*2*	*3*	*4*	*5*	
Economic	☐	☐	☐	☐	☐	☐
Technological	☐	☐	☐	☐	☐	☐

4 Please, indicate on a scale of 1 to 5, how predictable were the market activities of your company's leading competitor between 2008 and 2010?

	Very predictable				*Very unpredictable*	*N/A*
	1	*2*	*3*	*4*	*5*	
Market activities of your competitors	☐	☐	☐	☐	☐	☐

5 Please, indicate on a scale of 1 to 5, the degree of predictability of the tastes and preferences of your company's customers between 2008 and 2010.

	Much easier				*Much harder*	*N/A*
	1	*2*	*3*	*4*	*5*	
Tastes and preferences of your customers	☐	☐	☐	☐	☐	☐

6 Please, indicate on a scale of 1 to 5, the degree to which legal, political and economic constraints proliferated between 2008 and 2010.

	Remained about the same				*Proliferated greatly*	*N/A*
	1	*2*	*3*	*4*	*5*	
Legal	☐	☐	☐	☐	☐	☐
Political	☐	☐	☐	☐	☐	☐
Economic	☐	☐	☐	☐	☐	☐

7 Please, indicate on a scale of 1 to 5, how often product/service innovations emerged in your industry between 2008 and 2010?

	Seldom				*Very frequently*	*N/A*
	1	*2*	*3*	*4*	*5*	
Innovations in your industry	☐	☐	☐	☐	☐	☐

Strategy

8 Please, compare on a scale of 1 to 5, the following aspects of your company to that of your leading competitor between 2008 and 2010:

	Significantly lower				*Significantly higher*	*N/A*
	1	*2*	*3*	*4*	*5*	
Product/service price	☐	☐	☐	☐	☐	☐
Research & Development over sales	☐	☐	☐	☐	☐	☐
Brand awareness	☐	☐	☐	☐	☐	☐
Product/service development activities	☐	☐	☐	☐	☐	☐
Rate of change of designs	☐	☐	☐	☐	☐	☐
Product/service delivery standards	☐	☐	☐	☐	☐	☐
Product/service quality	☐	☐	☐	☐	☐	☐
After-sales service	☐	☐	☐	☐	☐	☐
Product/service features	☐	☐	☐	☐	☐	☐
	1	*2*	*3*	*4*	*5*	*N/A*

9 Were the previous aspects part of your company's realised strategy for the period between 2008 and 2010?

☐	Yes	Most of the previous aspects were part of my company's finally realised strategy for the period between 2008 and 2010.
☐	No	Most of the previous aspects were not considered in developing and implementing the strategy for the period between 2008 and 2010.
☐	No	Most of the previous aspects were considered in an intended but never realised strategy for the period between 2008 and 2010.

Performance measures

10 Please, rank the following performance measures in order of importance for your company for the period between 2008 and 2010:

Number them so that 1 = most important, 2 =next most important, through 18 (or equivalent if some are not applicable) = least important.

Rank	*N/A*	
	☐	Sales
	☐	Market share
	☐	Profit margin
	☐	Cash flow from operations
	☐	Working capital
	☐	Cost per unit produced/sold or service provided
	☐	Liquidity ratios (e.g., current ratio and acid-test)
	☐	Solvency ratios (e.g., gearing)
	☐	Profitability ratios (e.g., return on assets, return on equity or return on sales)
	☐	Output per employee or per labour-hour or per unit of raw material
	☐	Survey of customer satisfaction
	☐	Percentage or quantity of defective products
	☐	Number of customer complaints
	☐	Percentage of product or service delivered on time
	☐	Percentage of sales or sales level attributable to new products or services
	☐	Percentage of sales or sales level attributable to developing new markets for existing products or services
	☐	Survey of employee satisfaction
	☐	Number of hours of personnel training and development

Organisational performance

11 Please, assess on a scale of 1 to 5, your company's performance in comparison with your leading competitor over the period between 2008 and 2010.

	Significantly worse				*Significantly better*	*N/A*
	1	*2*	*3*	*4*	*5*	
Sales volume	☐	☐	☐	☐	☐	☐
Market share	☐	☐	☐	☐	☐	☐
Market development	☐	☐	☐	☐	☐	☐
Net profit	☐	☐	☐	☐	☐	☐
Profit margin	☐	☐	☐	☐	☐	☐

Cash flow from operations	☐	☐	☐	☐	☐	☐
Market value of the company's share	☐	☐	☐	☐	☐	☐
Working capital	☐	☐	☐	☐	☐	☐
Liquidity ratios	☐	☐	☐	☐	☐	☐
Gearing	☐	☐	☐	☐	☐	☐
Economic profitability	☐	☐	☐	☐	☐	☐
Financial profitability	☐	☐	☐	☐	☐	☐
Development of new products and/or services	☐	☐	☐	☐	☐	☐
Material and labour efficiency or productivity	☐	☐	☐	☐	☐	☐
Personnel training and development	☐	☐	☐	☐	☐	☐
Marketing and public relations activities	☐	☐	☐	☐	☐	☐
	1	*2*	*3*	*4*	*5*	*N/A*

12 Please, indicate on a scale of 1 to 5, the extent to which the final performance of your company was worse or better than anticipated for the period between 2008 and 2010.

	Significantly worse than anticipated				*Significantly better than anticipated*	*N/A*
	1	*2*	*3*	*4*	*5*	
Sales volume	☐	☐	☐	☐	☐	☐
Market share	☐	☐	☐	☐	☐	☐
Market development	☐	☐	☐	☐	☐	☐
Net profit	☐	☐	☐	☐	☐	☐
Profit margin	☐	☐	☐	☐	☐	☐
Cash flow from operations	☐	☐	☐	☐	☐	☐
Market value of the company's share	☐	☐	☐	☐	☐	☐
Working capital	☐	☐	☐	☐	☐	☐
Liquidity ratios	☐	☐	☐	☐	☐	☐
Gearing	☐	☐	☐	☐	☐	☐

Economic profitability	☐	☐	☐	☐	☐	☐
Financial profitability	☐	☐	☐	☐	☐	☐
Development of new products and/or services	☐	☐	☐	☐	☐	☐
Material and labour efficiency or productivity	☐	☐	☐	☐	☐	☐
Personnel training and development	☐	☐	☐	☐	☐	☐
Marketing and public relations activities	☐	☐	☐	☐	☐	☐
	1	*2*	*3*	*4*	*5*	*N/A*

Personal information

13 What was your position between 2008 and 2010?

14 How long have you been working in your current position?

☐ Years

15 How long have you been working for your current company?

☐ Years