Diagnostic and interactive use of management control systems in franchisor risk perceptions management**.

**Keywords**: Management Control Systems, Style of use, Relational Risk, Performance Risk, Franchising.

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Abstract

Relational and performance risk perceptions have been considered in literature as the main cause of failure in interorganizational relationships (Nootenboom et al., 1997; Das and Teng, 2001; Langfield-smith, 2008). In this setting, control systems have been characterised as a useful tool for risk management (Inkpen and Currall, 2004). Diagnostic and interactive styles of use of those control has been usually analyzed in intra-organizational context, finding that those styles are determined by the risks faced by the organization (Simons, 1995). Notwithstanding, their influence over those risks that determined them has been scarcely analyzed, neither the interorganizational influence in that relationship. So, this work tries to provide a deeper understanding of the way that diagnostic and interactive control uses help to the management of franchisor risk perceptions. Adopting an interorganizational focus, this paper proposes that chain size and relationship longevity determines which style of use is more suitable to manage relational and performance risk perceptions. Equally, the theoretical model proposes a support role of diagnostic style of use over the interactive use in risks perception management.

Using data from 240 Franchise Expansion Managers obtained from a survey to all franchisor entities in Spain, this study tests a structural equation model that relates diagnostic and interactive style of use of control to relational and performance risk perceptions. The evidence suggests that interactive use gets to diminish both kinds of risk perception. Moreover, it has been confirmed that the diagnostic use of MCS plays a support function of the interactive use of MCS in interorganizational risk perceptions. The possibility to use control tools with a diagnostic or interactive focus allows franchisor to focus mainly in an interactive use in risk management and support it by diagnostic controls. This study contributes to the current literature that analyzes diagnostic and interactive uses of control systems extending their focus to the interorganizational setting. As well, the style of use of control consideration in risk perception management supposes an original focus in risk analysis complementing the usual focus based in control types.
Introduction

Diagnostic and interactive styles of use of control systems are determined by risks and strategic uncertainties faced by the organization (Simons, 1990; Ahrens and Chapman, 2004; Dávila et al., 2009). However, few studies have studied the inverse relationship: the effect of these styles of use over risks perceptions. Moreover, both risk as control styles of use have been scarcely analyzed in interorganizational (IORs) settings. Diagnostic use, focused in monitoring the partner, correcting deviations and rewarding the achievement of specified goals (Simons, 1995), in IORs is affected by the absence of a common hierarchy and by the geographical and cultural distance among other factors (Parkhe, 1993). On the other hand, interactive use that try to foster discussion among all organizational levels and facilitate mutual learning (Simons, 1995; Tuomela, 2005) must be developed by independent firms, with different individual objectives and internal communication strategies (Coletti et al, 2005).

Interorganizational characteristics that make interesting the analysis of diagnostic and interactive uses of control are especially relevant in franchising. This kind of IOR entails the presence of two fully independent companies, franchisor and franchisee, without mutual ownership relations, but showing a name, an image and some behaviours or processes identical to customer's eyes. Franchisor has a contractual obligation to supply know-how to franchisee, embodied in a series of manuals, and supported by training and operating systems. Finally, franchisee has to strictly follow the franchisor's manuals, hiring prompted providers and paying the stipulated economic considerations. In this setting, franchisor has to exercise control over a company whose activity will impact on the reputation of the entire chain. Franchisor has to monitor a company that should be developing internally procedures given by him, while his revenues depend on that franchisee gains. Thus, in light of all those characteristics, control in franchise relationships becomes especially important for the chain improvement and continuity.

Besides those franchising idiosyncratic control characteristics, those relationships have a new kind of risk generated by the probability of cooperation failure: relational risk. Unlike to enterprises isolated, the possibility of partners opportunistic behaviours is a risk factor that literature states as one of the main causes for interorganizational failure (Das and Teng, 2001; Delerue, 2004; McCutchen et al., 2004). Relational risk, being the
characteristic risk of interorganizational relationships, has been broadly analyzed in literature. In contrast, performance risk has not received much attention, which may be due to the fact that it has been previously analyzed in intra-organizational studies and has a wide range of definitions that increases the difficulty in its analyse. Notwithstanding, sharing performance risk is one of the main drivers for the formation of interorganizational relationship, and is a crucial aspect in the formation, evolution and success of these relationships (Brouthers, Brouthers and Wilkinson, 1995; Nueno and Oosterverd, 1988). So, considering simultaneously both kind of risks will allow a deeper understanding of risk perceptions in interorganizational settings, especially in franchising relationship. Franchising implies high levels of relational and performance risk perceptions because the losses amount is not limited by an equity transference (Sitkin and Pablo, 1992; Das and Teng, 2001); thus being a research setting relevant to improve our understanding of its risk perception management.

Distinguishing control dimensions (diagnostic and interactive uses of control) and risk perception dimensions (relational and performance) allows considering subjacent relationships that may be omitted if control or risk are considered as one-dimension constructs (Das y Teng, 2001a, Deleure, 2004; Nooteboom et al., 1997; Rempel et al., 1985). Based on previous work about management control styles of use and risk perceptions that analyzed this effect implicitly, we propose a model about the influence of the styles of use of control on the two main kinds of perceived risk in franchising. Theoretically, literature states that diagnostic and interactive control characteristics make them suitable for relational and performance risk management: both styles of use may be useful to manage both kinds of risk. Notwithstanding, our proposed model introduces chain size and relationship longevity as determinants of the suitable style of use for risk perception management. Finally, as those styles of use must not be analyzed as independent levers of control (Simons, 1995), the model also proposes a complementary relationship of both styles of use in risk management in IORs, following the research line opened by previous works (Henri, 2006; Widener, 2007).

This study about the effect of diagnostic and interactive uses of MCS over interorganizational risk, contributes to the stream in current literature that analyzes the different uses of the MCS, extending its scope to the relationships between companies. So, with this work we want to know if franchising risks are managed with a traditional
focus of vigilance and deviations provided by the diagnostic use of the information; or, on the contrary, with a dynamic focus and the managers implication that entail the interactive use depending on its size and longevity. To know which focus let franchisor face less risk levels will enhance its relationship with franchisees as well as allow employing his attention in the chain activity management and improvement. For this purpose, this paper is structured as follows: next section examines franchisor risk perception and control system in franchising relationships. Then, based on previous literature, risk perceptions are related with the styles of uses that are useful to manage them. To concrete those relationships, size and longevity chain are analyzed allowing in the next section the developing of the theoretical model and the hypotheses derived from it. Finally, results obtained in the empirical study and discussion, are set out to present the findings of the study model and its contributions and limitations.

1. Risk and control in franchising

Given that “risky situations generally lead to a perception of risk” (Das & Teng, 1996, p.829), the main concern for management is the subjective perspective, the manager risk perceptions, since perceived risk determines risky actions or risk assumption by manager (Sitkin & Weingart, 1995). Those perceptions in IORs are of two kinds: relational risk and performance risk. Relational risk is the probability of failure coming from possible partners opportunistic behaviours (Das & Teng, 1996, 2001); and performance risk will be the threats coming from any other factor different to cooperation, including environment and partners’ capacities (Das & Teng, 2001).

Franchising is a relationship generated by risk motivations: franchisee seeks to limit risks under the umbrella of franchisor’s brand and reputation, and franchisors try to minimise financial and cultural risks among others when agreeing on franchise contracts (Sorenson & Sorensen, 2001). Thus, whereas the franchise arrangements are established to reduce different risks, the probability of opportunistic behaviours increases (Shane, 1996). Franchisee opportunism takes one of two forms: inefficient investment and free riding on the efforts of others (Carney and Gedajlovic, 1991). Franchisees do not invest in assets that have spill-over effects to other outlets, because these spill-over cannot be fully appropriated by them (Carney and Gedajlovic 1991). Franchisees shirk on product quality, because the gains from shirking are solely for the shirker and the costs are supported by all members of the franchise system (Norton 1988; Klein 1980).
Therefore, franchisors need to monitor franchisees to prevent these inefficient investments and the free-riding. Franchisee might pursue divergent goals: franchisor will be considering the performance of the entire chain while franchisee might be focusing on his individual outlet (Gassenheimer et al. 1996; Jambulingam and Nevin, 1999).

Performance risk in franchise, seen as the possibility of failure despite full cooperation, mainly decreases increasing knowledge about the business, processes and the franchise’s know-how (Phan et al., 1996). Franchisee interacting with franchisor and with other franchisees will learn the business and will accumulates knowledge that will spread to the rest of the chain through the franchisor increasing so the likelihood of success of the current ones. Thus, franchisee becomes central to value creation through the learning process and information dissemination chain (Phan et al., 1996).

Those risks are interrelated with the control concept in the organizational and interorganizational settings. Defining control system as a collection of tools and practices used in order to achieve the goals of the organization (Anthony, 1965), a goal-focus point of view arises with a vision of the control based on risk. Control is considered to be relevant only if mitigates the risk or the possibility of not achieving the goals envisioned by the organizations (Collier, 2008). Those tools will be necessary when a risk is identified, a risk that provides the manager the opportunity to be focused in aspects that may cause the failure of the organization or an interorganizational relationship (Collier, 2008). The importance of this influence of control systems on risk has motivated the definition of management control as the group of policies and procedures that companies use to mitigate different types of risk (Coletti et al., 2005, pp. 480) as well as an active tool for the reduction of risk (Das y Teng, 2001a; Inkpen y Currall, 2004). So, control systems have been treated as one of the main tools for dealing with risk, in both the cases of intra (March & Shapira, 1987; Sitkin & Pablo, 1992) and interorganizational context (Das & Teng, 2001; Ring & Van de Ven, 1992). Specifically, when control systems are used in interorganizational relationships, is expected that a high perception of risk doesn’t cause the rupture among the partners of the alliance and slow down the economic activity (Nootboom et al., 1997). Specifically, franchisor exercises control in order to minimize risk of opportunism and to ensure adherence to the franchise contract. So, although control over an employee is based on a
hierarchical system, in a franchise agreement control must deal with economic relations between two legally independent entities, leaving room for the level of independence enjoyed by the franchisee (Felstead, 1993; Shane, 1996). The control in franchising is meant to protect the brand name, which is an intangible yet essential asset, and to ensure its stability in the eyes of the customers, being a very delicate feature of franchising relationships (Dant and Nasr, 1998; Pizanti and Lerner, 2003).

2. Franchisor risk perceptions and control styles of use

Based on Simons’ (1995) “levers of control” framework, interactive and diagnostic controls are used to identify configurations of control systems about organizations strategy development. The diagnostic use of control system is focused in monitoring organizational outcomes and correcting deviations, while the interactive use focuses on manager’s attention and enhancing dialogue throughout the organization. So, diagnostic use of control systems occurs when managers compare performance against targets in order to identify critical exceptions and deviations from plans (Abernethy and Brownell, 1999; Simons, 1995). On the other hand, interactive controls stimulate emergent strategies in response to opportunities and threats within an organization’s environment.

In the literature about risk management and control there are not many works that formally study the influence of control styles of use over risk perceptions. Although original works did not name explicitly interactive or diagnostic use, conclusions can be drawn pointing to a style or another in interorganizational risk management. This section tries to outline those conclusions that will guide the proposed model. In franchise context we also found results that support the effectiveness of diagnostic or interactive style of use in risk management.

2.1 Relational risk management

Franchisor will try to control franchisee opportunistic tendencies providing franchisees incentives not to acting opportunistically and monitoring closely franchisee actions (Shane, 1996). These two ways of relational risk management may be considered on one side near to an interactive focus providing incentives and to a diagnostic style by the monitoring face. So, in the line of the diagnostic style effectiveness, Nooteboom et al (1997) argue that to reduce relational risk perceptions direct supervision of the other party is needed because the partner feels himself observed and will refrain from
carrying out opportunistic behavior. Similarly, Ittner et al. (1999) and Coletti et al. (2005) show the benefits of increased surveillance practices to prevent opportunism in the relationship, arguing again the effect that monitoring has on the opportunistic tendencies of a partner. As well, Parkhe (1993) and Seal et al., (1999) state that penalties must be formally established in cases of high probability of opportunistic behaviours. Specifically talking about diagnostic style of use, Bruining et al., (2004) argue that diagnostic controls allow the parties to agree the objectives to achieve in terms of individual benefit and thus limit the opportunism of the parties. In franchising, the initial payment of a fee is imposed by the franchisor as a safeguard contractual, not being returned to the franchisee if they are behaving in an unfair manner, acting as a lever of such opportunistic behaviour (Combs and Castrogiovanni 1994, p. 39; Shane, 1996b). By carefully observing franchisee behaviour, franchisors can control opportunistic behaviour (Shane, 1996a).

Likewise, interactive use by its side has been stated as useful in relational risk management. The joint development of the control system by partners reduces the risk perceived in a relationship (Nootenboom et al., 1997). In this line Heide and John (1992) and Poppo and Zenger (2002) found that in case of partner’s objectives conflict, the joint establishment of standards will diminish the possibility of opportunism. Similarly, Mjoen and Tallman (1997) argue that the dissemination of information on control at all levels of the organization is useful to decrease the likelihood of opportunistic behavior.

2.2 Performance risk management

Considering that performance risk is similar to common risk, previous studies states that also diagnostic and interactive control styles of use are useful for this risk management (Widener, 2007). So, the information deficit associated with operational risk is such that firms need both systems to effectively manage it. Diagnostic use has been seen as useful to manage risk in general (Galbraith, 1973; Simons, 2000). In franchising, the operations manual, high specification in the characteristics of the product or service and requirement for high levels of compliance by franchisee are means to decrease the likelihood of failure of the franchisee, and therefore to reduce the performance risk (Pizanti and Lerner, 2003). This standardization, centralization, and rules and procedures to monitor or drive the behavior of the franchisee are the main characteristics of the control in a franchise (Flamholtz et al., 1985; Choo, 2005).
Besides this, the development of efficient routines for monitoring and performance measurement of the franchisor to ensure the profitability and even product delivery or service by the franchisee (Shane, 1996b); the inspection of the service or product provided by the franchisee; the consideration of their entries in the computer system; and the specification and verification of compliance with standards (Choo, 2005) are again the use of diagnostic features trying to downplay the chances of failure of business, performance risk.

Regarding interactive use, Simons (2000, p. 261) states that this style of use is essential to monitor competitive risks “in a culture that could potentially create barriers to impede the free flow of information about emerging threats and opportunities”. Focusing in innovation risks, Bisbe and Otley (2004) state that this kind of risks are better managed by interactive systems.

In IORs, parties often rely on contracts raised from a dynamic process and through mutual dialogue to facilitate collective access to information (Sitkin and Pablo, 1992, Dávila et al., 2009) fundamental characteristics of the style of interactive use of the control system (Simons, 1991). Similarly, Chalos and O'Connor (2005) argue that a transparent control system, in which the parties know the origin and use of information, reduces the risk perceived in the IOR and improves performance. Inkpen and Currall (2004) observed that if the organization conveys to its members what is expected from them and how to achieve those expectations, members will receive a lower probability of failure. So, we can say that performance risk management is strongly linked with interactive controls, which promotes the learning of both parties in the relationship and decreases the probability of failure of the activity.

3. Control style of use relationship

Alongside these considerations, must be taken into account that Simons (2000) states that the power of control levers arises from the dynamic tension that forms the joint use of its various components. Therefore, the two styles of control should not be analyzed in isolation, as independent elements, but the interrelationships between the two styles of use should be included in the study models (Henri, 2006). Interactive use of control, which seeks to promote dialogue across the organization, usually starts with the design and implementation of diagnostic controls. So, diagnostic use is not an end itself but
provides a means to enhance dialogue through the organization (Chenhall and Morris, 1995; De Haas and Kleingeld, 1999; Widener, 2007). Companies use both styles of control, so that as managers rely more on interactive systems, more intensified systems diagnostics that provide the structure necessary for the efficiency of the interactive system (Simons, 2000). Equally, feedback about performance deviations enables managers to adjust their actions. Diagnostic processes make tangible and visible the activities that employees must undertake in order to achieve the organization’s strategic goals (Bhimani and Langfield-Smith, 2007).

The styles of use relationship are also relevant to interorganizational risk management. If, as stated in the previous section, the diagnostic use of MCS decreases the likelihood of problems in cooperation, once this relational risk is under control it is possible that managers pay more attention to use the information it provides the control system to interact with partners and improve the business concept and his exercise of control. Thus, for interorganizational risk management, the diagnostic use will support the development of interactive use, in line with the proposals of Henri (2006) and Widener (2007) among others.

4. Franchise size and age

As it has been exposed in Section 2, there are arguments about the effectiveness of both styles of use over both kinds of risk perceptions. This broad vision must be nuanced by the franchise characteristics: it is not the same being a small or new chain that a big or established one. The stage of development of the franchise system and the company size influence the chain control (Quin and Doherty, 2000; Doherty and Alexandre, 2006). In addition, being new when others are older, and small when others are large, may entail higher risk perceptions (Bird, 1989). New and small chains lack economies of scale available to larger systems in the purchasing systems and brand names promotion. The new franchises have a failure probability greater than those already established for failing to meet the routines and trust or legitimacy of interest groups (Shane, 1996b; Frazer and Winzar, 2005).

Focusing in size, franchisor monitoring capability is influenced by the economies of scale in monitoring, which arise from the development of efficient routines in monitoring and measuring franchisee performance (Shane, 1996a). The direct
observation of franchisee activities required by the supervision imposes high administrative costs on franchisors (Combs and Castrogiovanni 1994; Shane, 1996a). Also, large size is associated with greater formalization and standardization, which are generally inversely related to communication and learning (Falbe et al, 1998). Even with a variety of structural mechanisms and the best of intentions, large organizations appear to fail more often than succeed in the entrepreneurial arena (Block and MacMillan 1993). Firm size has been analyzed by Nooteboom (1993) as a factor negatively related with relational risk perceptions. As organization is bigger, its administrative structure makes possible to have partners under control avoiding their opportunistic behaviors, and will have a high presence of lawyers to act in case of litigation (Nooteboom, 1993).

Regarding age, Shane (1996b) suggests that, in franchising, young firms may not have fully developed systems. Literature indicates that as organizations grow older there are pressures, similar to those exerted by size, to increase formalization and standardization to maintain internal consistency (Aldrich and Auster 1986). The entrepreneurial activity that characterizes new organizations tends to disappear as organizations grow (Kao 1989). Regarding risk perceptions, as older is the relationship between franchisor and franchisee, greater will be the security of both parties in the projection of the relationship (Dant and Nasr, 1998) and chains with a long history has fewer operational errors than new ones (Shane, 1998). As a relationship evolves over time, partners often have demonstrated cooperative non opportunistic behaviours, because otherwise the relationship would not have advanced, and the relational risk perceptions are increasingly seen as a minor (Gambetta, 1988; Gulati, 1995; Das and Teng, 1996; Nooteboom et al. 1997; Delerue, 2004). Regarding performance risk, the frequency of the transaction has been treated in the field of IORs by Inkpen and Currall (2004) finding that the perception of risk of failure in organizational activity decreases as time passes, since it eliminate doubts about the ability of the partner to develop the activity and resource endowments to fulfil their tasks.

5. Theoretical model

Theoretical model proposed here tries to understand which must be the franchisor focus in his use of the control information to manage relational and performance risks. This objective is different in the case of new and small franchises compared with old and big
ones. As has been stated previously, franchisor at the beginning of the relationship with a new franchisee will have higher relational risk perceptions, because of the uncertainty about the opportunistic tendencies of the franchisee, and high performance risk perceptions, because of the doubts about the ability of the new franchisee. So, in this case of high uncertainty the information necessity implies that diagnostic and interactive uses of control will be suitable in risk management at the beginning of the relationship. Diagnostic use of control entails the monitoring that will dissuade franchisee to act opportunistically; likewise, the control of deviations that entail this style of use will alert to franchisor about a poor task development by franchisee. Interactive control for its part supposes a continuous dialogue with franchisee that may motivate him to act honestly and that reinforce the learning process that will enhance the good franchisee performance. First group of hypothesis shows these relationships:

H1a: Diagnostic use of control reduces franchisor relational risk perceptions at the beginning of the relationship with a franchisee.

H1b: Diagnostic use of control reduces franchisor performance risk perceptions at the beginning of the relationship with a franchisee.

H1c: Interactive use of control reduces franchisor relational risk perceptions at the beginning of the relationship with a franchisee.

H1d: Interactive use of control reduces franchisor performance risk perceptions at the beginning of the relationship with a franchisee.

When relationships have become older, this necessity of control diminishes and the relationship with franchisee will be closer. In this setting, diagnostic control transfers its importance to interactive control because the trust relationship does not need monitoring and surveillance activities. Likewise, risk perceptions are less important, because time has selected good relationships, not renewing the contract with bad franchisees. So, in mature relationships, interactive use of control is focused mainly to improve the relationship and the entire chain what diminishes simultaneously whatever the risk perceived. This second group of hypotheses goes as follows:

H2a: Interactive use of control reduces franchisor relational risk perceptions in mature relationships.
H2b: Interactive use of control reduces franchisor performance risk perceptions in mature relationships.

Once it has been stated hypotheses about the effect of age on the control use effect over risk perceptions, next propositions will show the influence of chain size considerations. It is not the same to manage a relationship being a large chain with a high visibility than being a small chain with three local stores. Risk perceptions in a relationship with a franchisee usually will be less important for a franchisor with a great number of franchised stores, than a franchisor with one or two stores more. So, franchisors in small chains will give more importance to his risk perceptions and will try to gather as much information as possible. Similarly, the small number of franchise stores will allow having a high interaction with franchisees and easy access to monitor and overview their activity. Hypotheses about control uses in small chains will be:

H3a: Diagnostic use of control reduces franchisor relational risk perceptions in small chains.

H3b: Diagnostic use of control reduces franchisor performance risk perceptions in small chains.

H3c: Interactive use of control reduces franchisor relational risk perceptions in small chains.

H3d: Interactive use of control reduces franchisor performance risk perceptions in small chains.

Franchisor risks perceptions respect a particular franchisee in chains with a large number of franchisees may be considered relatively less important than in small chain case. Notwithstanding, interactive use of control will be more difficult to employ in big chains, because the interaction and the mutual learning is hampered by the presence of multiple franchisees, the geographical distance and finally by franchisor bounded rationality. Relying in information systems, franchisor used to appeal to diagnostic use in his risk perception management. The last set of hypotheses about control effect over risk perceptions is:

H4a: Diagnostic use of control reduces franchisor relational risk perceptions in big chains.
H4b: Diagnostic use of control reduces franchisor performance risk perceptions in big chains.

Proposed model considers that in cases of simultaneous use of diagnostic and interactive control systems, the first will support the second in risk perception management. That simultaneous use occurs in high information necessity situations, where the diagnostic use provide data about performance and deviations that will orientate the interactive use to improve the relationship and to reformulate the strategy of that franchisee. Last hypothesis in this case will be:

H5: Diagnostic use supports the effect of interactive use in performance and relational risk management.

6. Methodology.

6.1 Survey elaboration and measurement items

In administering and design the survey, the total design method for survey research proposed by Dillman (1978, 2000) has been followed. Questions were taken from peer reviewed international journals that needed a double translation process (first English to Spanish and then Spanish to English by different bilingual persons) to ensure the construct validity. The first survey draft was pre-tested sending it to six researchers focused in franchising, control systems or risk analysis to evaluate questions about survey structure, construct validity and right wording. Then, fourteen franchisors were interviewed to answer the questionnaire with three aims: checking the right understanding of questions by people with the same focus as the target population; finding out the position’s name in franchises of the person who must answer the survey; and to establish if was needed send the survey at more than one person in the same organization. As results, the wording of several surveys’ questions was changed, indirect questions that usually are wrong answered by Spanish people was corrected and “Franchisee’s Head” or “Expansion Manager” were selected as the positions that could answer properly questions about franchisor-franchisee’s relationships, not needing a second answer because there is no other position engaged with the franchisee relationship’s management. Sections 6.1.1 to 6.1.5 describe measurement items and their source.
6.1.1. Diagnostic and interactive uses. The investigation of a non-specific package of control facilitates an understanding of the nature of its different uses (Abernethy & Chua, 1996; Chenhall & Langfield-Smith, 1998; Otley, 1999). This avoids the problems associated with different definitions of specific control systems because the focus is on the nature of the relations between them (Luft & Shields, 2003). So, Naranjo-Gil & Hartmann, (2006) and Ferreira & Otley (2006) questions were used to analyze these constructs focusing franchisor in "all information systems and techniques that will provide information to manage and control their franchise" (Naranjo-Gil and Hartmann, 2006).

6.1.2. Relational risk perceptions. Respondents were asked to evaluate the possibility of franchisee’s opportunistic behaviours with Parkhe’s (1993) instrument, used by Delerue (2004) in interorganizational context.

6.1.3. Performance risk was reflected by the risk measure proposed by Simons (2000) then used by Widener (2007), showing factors of competitive and product risks. Original instrument also collected data about operational risks, but those questions were dropped in factor analysis because of lack of data reliability.

6.1.4. Franchise size. The chain size was analyzed taking the number of franchised stores in the moment of the survey administration.

6.1.5. Franchise age. The age of the relationship was measured with the numbers of years since contract signature with that franchisee.

6.2 Database elaboration and questionnaire administration.

The target population data were extracted from Tormo & Asociados’ yearbook, a private Spanish consulting specialized in franchising. Using this kind of data source is very frequent in franchising studies, because usually more than 80% of data are checked by the institution (Alon, 1999, 2001; Combs & Castrogiovanni, 1994; Lafontaine, 1992; Martin & Justis, 1993; Shane, 1996, 1998). After checking the consultant’s yearbook information, problems as enterprise dissolution or termination of franchising activity (using a different contractual relationship) diminishes the population size from 840 franchisor initial records to 777 organizations available. Survey was administered telephonically to franchisor needing 8,083 phone calls to obtain 240 usable surveys. This suppose a 30.88% response rate, into the answer interval commonly accepted in
business research (Futrell, 1994; Neuman, 1994). Although this response ratio may be evaluated as right, this indicator is an incomplete measure of non-response error (Diamond, 1994) because ignores the differences between respondents and the full sample, that is, the non-response bias.

6.3 Non-response and common method bias.

Whether the sample composition reflects the population composition were analyzed with nonparametric chi-square and binomial test in terms of internationalization, sector and size, showing if responses are biased with a higher proportion of people of a particular feature. Composition of national and international franchisors in the sample compared to the proportions of the target population was analyzed by a Binomial, obtaining there is no bias as to the origin of the ensign. Chi-Square tests corroborate the no existence of non-response bias for franchisor’s sector and size. So, the non-response bias analysis of population allows confirming that the survey results are not affected by the franchisors characteristics examined.

Equally, the possible effect of common method bias was analyzed with Podsakoff et al. (2003) statistical remedy. A marker variable that was theoretically unrelated to all the constructs in our model was used to assess whether any systematic variance occurred among the indicators resulting from common method variance (Podsakoff et al., 2003). No significant correlation between the marker variable and the other constructs in the study was found. Further, we assessed common method bias using the Harman one-factor test. No single factor emerged to account for most of the variance in the variables. In summary, results suggest that common method variance is unlikely to affect the findings of this study.

6.4 Unidimensionality, reliability and validity

To evaluate items validity and trustworthiness, first an exploratory analysis with SPSS for Windows 17 was made and then a confirmatory factor analysis using EQS 6.1 software was developed. Data analysis showed that constructs measurement fulfils the convergent and discriminating validity statistics conditions (see Table 1), what entails that there are not different measures that reflect the same construct and factors are different enough to confirm that are measuring different constructs.

INSERT TABLE 1 ABOUT HERE
7. Results.

In this paper version, population has not been split into groups by size and age level. Data has been analyzed simultaneously giving a first vision about the effect of diagnostic and interactive controls over relational and performance risk perceptions.

Structural equation models allow us to simultaneously analyze the effects of diagnostic and interactive uses, as indicated by Simons (1995, 2000). Hypotheses contrasts are based on the correlation matrix given in Table 2. In this table, the "diagonal of reliability" records each factor Cronbach alpha, while the rest of the table show the correlations of pairs of variables, pointing to the corresponding level of significance.

Table 2 gives a first approximation to results about control uses and risk perceptions relationships. On one hand we see that both the diagnostic and interactive uses are negatively and significantly correlated with both types of perceived risk. This implies that, in isolation, both uses are helpful in decreasing interorganizational risk perceptions. Although the level of significance of the relationship of both kinds of risk with the interactive use (99%) is higher than the level of significance of the relationship with diagnostic use (95%), these data can not sustain higher interactive effect over risk perceptions, requiring a new test to confirm that deeper effect.

In Table 3, models 1a and 1b study the relationship of diagnostic and interactive use of with both types of perceived risk, in order to contrast the direct relationships of the uses over risk perceptions and the greater influence of one use compared to another. Model 2a studies the consistency of these relationships in the presence of both uses simultaneously, watching what kind of use has a greater influence on each type of risk. Model 2b includes the support relationship of diagnostic use over interactive use proposed theoretically. Finally, model 3 includes diagnostic use as antecedent of interactive use and its relationship with performance risk.

To analyze the supremacy of one use over another to manage each type of risk perception, we use the test of Lagrange multipliers (LM test). In this test the null hypothesis affirms the equality of relations between variables, that is, diagnostic and
interactive uses have a relationship of equal intensity with relational risk and performance risk, while the alternative hypothesis states significant differences between these relationships. Fit indexes of each model are the degree to which the study model is close to the actual data.

In 1a model, described graphically in Figure 3, we can see that the diagnostic use has a significant negative effect (95% significance) on relational risk. We find that diagnostic use also has a significant effect on the performance risk. In the test of the Lagrange multipliers null hypothesis can not be rejected, so that we can not say that the diagnostic use is more efficient to reduce relational risk than reducing performance risk. The fit indexes of this model 1a are adequate, so proposed relations are seen as consistent and close to population data.

INSERT FIGURE 1 ABOUT HERE

Similar to Model 1a, Model 1b shows the analysis of the influence of interactive use with relational risk and performance risk. In this model it is concluded that the interactive use has a significant negative effect on performance risk and according to the LM test can not be said that this effect is more intense than relational risk one. Graphically model would be as reflected in Figure 2:

INSERT FIGURE 2 ABOUT HERE

Observing that the effects of both uses effects are negative and significant with no superiority of one type of use over another, we propose Models 2a and 2b. These two models try to find out whether the simultaneous presence of diagnostic and interactive uses show a stronger relationship over perceived risks. In Model 2a we see that interactive use effect remains negative and significant over both types of perceived risk, while the effect of diagnostic use on both types of risk appears no significant. Thus, the relationship of both types of use with the two perceived risks of Model 2a is the showed in Figure 3:

INSERT FIGURE 3 ABOUT HERE

---

1 Reference values for these indexes are value for $\chi^2$SB $p > 0.05$, RMSEA $< 0.05$, GFI $> 0.9$ and CFI $> 0.95$ (Byrne, 2006)
The fact that diagnostic use effect over risk perceptions ceases in presence of interactive use may evidence a mediation relationship, confirming the relationship of diagnostic use to support interactive use. In this model 2a, we find that the LM test indicates that we can not say that the effect of interactive use over risk perceptions is different. To test the possible mediating effect of interactive use between diagnostic use and both types of risk, we propose the Model 2b which confirms the relationship of mediation, increasing the goodness of fit indexes of the model. Thus, in presence of both uses the interactive use significantly reduces the risk perceptions of relational and performance risk, while the diagnostic use achieves this reduction through interactive use. Figure 4 graphically reflects this relationship:

![INSERT FIGURE 4 ABOUT HERE]

Finally, Model 3 examines the mediation of the Model 2b distinguishing a direct effect of diagnostic use over relational risk and an indirect effect through the interactive on performance risk as proposed in Figure 5. The model has correct adjustment indexes and allows us to confirm the support role of diagnostic use, which is summarized in the following figure:

![INSERT FIGURE 5 ABOUT HERE]

However, while goodness of fit indexes are acceptable, values are significantly worse than the fit indexes in Model 2b, strengthening the conclusion that in the presence of interactive use the diagnostic do not have effect on both types of risk shifting to a supporting role on the interactive use.

8. Discussion

According to the results obtained in our analysis, both the diagnostic and interactive use in isolation may be used to manage two types of perceived risk in interorganizational relationships. This utility of both uses for risk management is reflected by Widener (2007) because of the large information gap that exists in risk situations. In interorganizational literature we can find works in the same direction of our results. Specifically, Nooteboom et al., (1997) see that the joint development of the control systems by partners reduces the risk perceived, which support the interactive effect found using the relational risk. In this line Heide and John (1992) and Poppo and Zenger (2002) also found that when there is conflict between the objectives of the
partners, one must resort to the creation of standards arising from business relations. Similarly, Mjoen and Tallman (1997) argue that the dissemination of information at all levels of the organization is useful to decrease the likelihood of opportunistic behaviors.

Regarding the effect of the diagnostic use on performance risk observed in the franchise, this use try to decrease the likelihood of franchisee failure and therefore to reduce the performance risk with operations manual, high specification in the characteristics of the product or service and the requirement for high levels of compliance by the franchisee (Pizanti and Lerner, 2003). Besides this, the development of efficient routines for monitoring and performance measurement of the franchisor, to ensure the profitability and even product delivery or service by the franchisee (Shane, 1996b), inspection of the service or product provided by the franchisee, consideration of their entries in the computer system, and the specification and verification of compliance with standards (Choo, 2005) are again features of diagnostic uses trying to downplay the chances of failure of business, the performance risk.

It was not possible to confirm the superiority of diagnostic use to manage relational risk, or interactive use in performance risk management. This lack of superiority of both types of uses makes us wondering if the use of control determines the effectiveness of the system for managing risk perceptions or, conversely, is the mere presence of the control system that reduces the risk perception, irrespective of the style used. However, results show that in the presence of both styles of use, only the interactive use has a significant effect on these risks. So, when a franchisor use control systems diagnostic and interactive simultaneously, the latter will reduce relational and performance risk perceptions and the first one will favour this effect. So, franchisor will evaluate as less probable franchisee’s opportunistic behaviours and business failure if the information of control system is used to promote dialogue, learning and the generation of new strategies. By contrast, in this situation, the use of controls for monitoring and correction of deviations will not significantly impact these perceptions of risk.

Finally, there is a positive relationship of diagnostic use over interactive use. This relationship supports the theories discussed in the literature about the supportive role of diagnostic use to achieve the strategic goal of the interactive use (Simons, 2000). Applying these theories to the effect of styles on the use on risk perceptions, it confirms
that a diagnostic use enabling monitoring and control of the activity of the franchisee, fosters the interactive use of control based on the interrelation of the parties.

9. Conclusions

This paper has analyzed how different styles of use of control systems proposed by Simons (1995, 2000) are used to manage the two main types of risk perceived in interorganizational relationships: relational risk and performance risk (Das and Teng, 1996, 2001). Based on Simons’ (1995) proposition about risk as determinant of control style of use, this study confirms the inverse relationship: the effect of both uses over risk perceptions in interorganizational settings. Specifying these relationships in franchisor's control over its franchisees, results have shown that both uses in isolate affect to relational and performance risk perceptions. When both styles of use are analyzed simultaneously, findings show that the interactive style of use manages risk perceptions, while the diagnostic use exercises a supporting role. Thus, we can say that in those relationships where there are controls used with diagnostic focus and controls used interactively (Henri, 2006, Widener, 2007) perceptions of risk are managed by controls used interactively relying on diagnostic control mechanisms.

We have not found evidence to assert a stronger effect of each style of use to manage relational risk or performance risk. This result lead us to consider how far it is necessary to distinguish each type of risk to study the effect of control uses on interorganizational risk perceptions, rather than raise both perceptions of risk as part of a higher construct. The study of these relations by a factor "perceived risk" comprising the two dimensions of risk posed in this study would be a logical continuation of this study.

Regarding the relationship of the diagnostic use with the interactive use in interorganizational risk management, findings show that diagnostic use influences positively the interactive use to achieve the risk perception reduction. This relationship as raised in the literature of intra-organizational management control (Henri, 2006, Widener, 2007) is confirmed in interorganizational settings and acquires a special significance given the differential role of cooperation in interorganizational business. If, as proposed in the theoretical model, a diagnostic use makes franchisor perceive a lower risk of opportunism in its relationship with franchisee, these diagnostic controls will encourage the franchisor to focus on interactive use information, to promote interaction
with franchisee and mutual learning, achieving a reduction in both types of perceived risk.

There are two main limitations that we highlight in this work. On the one hand, we must remember that the analysis based on correlations does not allow the study of causal relationships but to support the relationships proposed in the theory. So, qualitative studies may reinforce the results found in this study and clarify the relationships that remain unclear. Second, the non-inclusion in the study of trust variable is a limitation because previous work have proved that trust is an influential variable in explaining the effect of control on risk perception (Das and Teng, 2001; Segun and Wasti, 2007; Langfield-Smith, 2008; De Man and Roijakkers, 2009).

From these conclusions we can draw several contributions of this study. First, this work aims to extend the Simons (1995) analysis to interorganizational settings, where the presence of two or more organizations for the exercise of control is a distinguishing feature. In addition, this study reflects a complementary role for the use diagnostic use interactive risk management. If Henri (2006) showed that both uses are interlinked and Widener (2007) that they are complementary, this paper provides empirical evidence of the supporting role of diagnostic use for the interactive use in interorganizational risk management. The study of control styles in franchise relations as well as provide data on interorganizational control of this area can assist franchisor in managing the risks perceived in his relationship with franchisees. Since, as stated by Simons (1995) control tool is no determinant in the style of use, franchisors must guide their controls interactively, style of use proved efficient in risk management. Finally note that the reason that some of the results of this study show differences with the conclusions of the IOR literature in general may be due to the characteristics of the franchise relationship, which reinforces the need further studies on management control in this area.
References


• Langfield-Smith, K. 2008 The relations between transactional characteristics, trust and risk in the start-up phase of a collaborative alliance. Management Accounting Research. 19 (4) 344-364.


### FIGURES AND TABLES.

<table>
<thead>
<tr>
<th>Item</th>
<th>α</th>
<th>CR</th>
<th>AVE</th>
<th>SL</th>
<th>T Value</th>
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<td>DiagUse1</td>
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<td>Rel Risk1</td>
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<td>Rel Risk 3</td>
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<td>Perf Risk 3</td>
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<td>0.870</td>
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<td>9.076</td>
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</tr>
</tbody>
</table>

Table 1

*Factor Confirmatory Analysis*

*AVE = Average Variance Extracted. CR = Composite Reliability. SL = Completely Standardized Loadings*

**: all t-values are significant at p-value < 0.01
<table>
<thead>
<tr>
<th></th>
<th>Relational Risk</th>
<th>Performance Risk</th>
<th>Diagnostic Use</th>
<th>Interactive Use</th>
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</thead>
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<tr>
<td>Relational Risk</td>
<td>0.719</td>
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<tr>
<td>Performance Risk</td>
<td>0.164*</td>
<td>0.896</td>
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<td>Diagnostic Use</td>
<td>-0.227 **</td>
<td>-0.214 **</td>
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<tr>
<td>Interactive Use</td>
<td>-0.440 ***</td>
<td>-0.274 ***</td>
<td>0.600 ***</td>
<td>0.740</td>
</tr>
</tbody>
</table>

Table 2: Correlation Matrix

The diagonal of the matrix is the Cronbach’s Alpha for each variable.
The remainder of the tables reports the bi-variate correlation coefficients.

*, **, *** p-value significant at <0.1, 0.05, 0.01, respectively.
Table 3. Structural model.

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Model 1a</th>
<th>Model 1b</th>
<th>Model 2a</th>
<th>Model 2b</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
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<td>Diagnostic Use → Relational Risk</td>
<td>-0.190**</td>
<td>N.A.</td>
<td>0.046 (ns)</td>
<td>N.A.</td>
<td>-0.198**</td>
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<td>Diagnostic Use → Performance Risk</td>
<td>-0.212**</td>
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<td>-0.071 (ns)</td>
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<td>N.A.</td>
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<td>Interactive Use → Relational Risk</td>
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<td>-0.385***</td>
<td>-0.397 ***</td>
<td>-0.360 ***</td>
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<td>Interactive Use → Performance Risk</td>
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<td>-0.261 *</td>
<td>-0.319 ***</td>
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<td>Diagnostic Use → Interactive Use</td>
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<td>N.A.</td>
<td>N.A.</td>
<td>0.534***</td>
<td>0.550 ***</td>
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LM Test

<table>
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<th>X² (f.d.)</th>
<th>P-Value</th>
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</thead>
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<tr>
<td></td>
<td>0.036 (1)</td>
<td>p=0.849</td>
</tr>
<tr>
<td></td>
<td>0.252(1)</td>
<td>p=0.615</td>
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<td>0.098 (1)</td>
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<td></td>
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<td>N.A.</td>
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Fit Index.

<table>
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<th>X² SB (f.d.)</th>
<th>P-Value</th>
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<tr>
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<td>31.9688 (25)</td>
<td>p=0.1589</td>
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<td>28.4342 (25)</td>
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<td>68,0342 (49)</td>
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<td>68.2238 (51)</td>
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<tr>
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<td>83.3770 (51)</td>
<td>p=0.00353</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>RMSEA robust</th>
<th>GFI</th>
<th>CFI robust</th>
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<tbody>
<tr>
<td></td>
<td>0.034</td>
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<td></td>
<td>0.051</td>
<td>0.934</td>
<td>0.956</td>
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In this table, each column contains the different models analyzed to contrast the study hypothesis. The first column shows the structural relationships analyzed, indicating first the independent variable, then the dependent variable. The table is divided into four parts: the first part indicates the coefficients of the relations of study, the second part indicates the results of the LM test to confirm the equality of parameters, the third part shows the fit indices of each of the models study. ***, **, * Indicates significance of 99%, 95% and 90% respectively. N.A. = Not applicable to the study model.
Figure 1. Model 1a Influence of Diagnostic Use of MCS over Risk Perceptions.

Figure 2. Model 1b Influence of Interactive Use of MCS over Risk Perceptions.

Figure 3. Model 2a Simultaneous Influence of Interactive and Diagnostic Use of MCS over Risk Perceptions.
Figure 4. Model 2b Mediating Effect of Interactive Use between Diagnostic Use of MCS and Risk Perceptions.

Figure 5. Model 3 Direct relationship of Diagnostic Use with Relational Risk and Indirect Relationship with Performance Risk.