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STRATEGY AND ENTREPRENEURIAL ACTION IN FAMILY BUSINESS:

THE ANALYSIS OF HUMAN CAPITAL AND SOCIAL CAPITAL

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THE ANALYSIS OF HUMAN CAPITAL AND SOCIAL CAPITAL

Tese apresentada ao Departamento de Administração da Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo como requisito para a obtenção do título de Doutor em Administração.

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RESUMO

A ocorrência de desequilíbrio no ambiente econômico impõe ajustes na estratégia e na alocação de recursos pelas firmas. A literatura em estratégia prediz a reação da firma ao desequilíbrio de acordo com seus recursos, as forças competitivas de mercado e os mecanismos para economizar em custos de transação. Entretanto, estas perspectivas assumem homogeneidade nas capacidades gerenciais, habilidades e experiências das firmas; em outras palavras, não há espaço para o empreendedor. De fato, as investigações sobre o empreendedor focam o seu comportamento ao risco, o processo de julgamento relacionado ao seu modelo mental e outros conceitos que não são diretamente observáveis. Esta tese de doutorado propõe um modelo baseado em capital humano e capital social para conectar as teorias isoladas sobre estratégia e empreendedorismo. Ainda mais, este modelo integra a teoria sobre empresas familiares pela sua importância na formação de capital humano e capital social das firmas. O estudo empírico investigou a escolha estratégica e a ação empreendedora de famílias de produtores rurais no Brasil. Especificamente, avaliou os produtores que mudaram de uma estratégia de liderança em custo para uma estratégia de diferenciação, no contexto da produção de cafés. O primeiro estudo investigou os mecanismos de influência da família na formação de capital humano e capital social. O capital humano é formado pela educação formal e pela experiência herdada da família. As investigações sobre capital social focaram o número de conexões familiares e a duração da relação com o comprador de café. O segundo estudo empregou modelos *Probit, Tobit* e *Cox* para estimar a probabilidade de troca de estratégia em uma amostra de 135 produtores de café. O terceiro estudo introduziu a decisão de governança na investigação sobre a escolha de estratégia; para cumprir com este objetivo, foi aplicado um modelo de *Switching regression* para controlar os efeitos endógenos nas decisões de governança e estratégia, em uma amostra de 255 observações. Os resultados indicaram que os empreendedores investem em educação formal para melhor avaliar os cenários e para tomar ações empreendedoras. Apesar de estudos anteriores apontarem um efeito positivo da experiência herdada da família, os resultados encontrados sugeriram efeitos contingenciais. A experiência da família contribuiu para a inércia das estratégias das firmas. Entretanto, em interação com o capital social, a experiência da família favoreceu positivamente a adoção de novas estratégias. Outro efeito importante foi que a experiência da família aumentou o desempenho da estratégia de diferenciação. O capital social da família contribui muito para prever a tomada de ações empreendedoras. Especificamente, o número de conexões sociais aumentou a probabilidade de ajustar a estratégia quando existem contratos, ainda mais, sugeriu que pessoas socialmente conectadas têm vantagens de cooperação para estabelecer contratos, refinar os seus termos e promover sua estabilidade. As relações duradouras suportaram a emergência de confiança entre os agentes, o que permitiu a decisão de fazer investimentos específicos mesmo na ausência de arranjos de proteção. Esta pesquisa propõe um modelo de análise do capital humano e capital social para prever a tomada de ação empreendedora e a escolha de estratégia. Ainda mais, propõe um modelo de investigação dos efeitos positivos da família nos negócios, em que estabelece a importância da herança educacional e da transmissão de capital social para as gerações futuras. Esta é a primeira pesquisa a debater teoricamente e a testar empiricamente os argumentos de capital humano e capital social com base em um modelo integrado das teorias de empresas familiares, empreendedorismo e estratégia.

ABSTRACT

The occurrence of disequilibrium in the economic environment imposes adjustments on a firm's strategy and allocation of resources. The literature on strategy predicts the firm's reaction to disequilibrium according to the existing set of resources, the competitive forces in the industry and the transaction-cost economizing mechanisms. However, these perspectives assume the homogeneous managerial ability, skills, and experiences of firms; in other words, there is no room for the entrepreneur. In fact, investigations on entrepreneurs rely on the risk-taking behavior, judgment processes related to cognitive mental models, and other concepts that are not directly observable. This doctoral dissertation proposes a framework based on human capital and social capital dimensions to connect the isolated strategy and entrepreneur theory. Moreover, the framework links the family business theory for its importance in the formation of human capital and social capital of firms. The empirical study investigated the strategy choice and entrepreneurial action of family farmers in Brazil. Specifically, it investigated the farmers who switched from the low-cost strategy to differentiation strategy in the coffee production context. The first study investigated the mechanisms of family influence on the formation of human capital and social capital. Human capital comprises the formal education and the experience inherited from family. The investigations on social capital focused the number of family ties and the relationship duration with the coffe buyer. The second study applied Probit, Tobit and Cox Models to estimate the probability of switching strategies in a 135 farmers sample. The third study introduced the governance decision in the investigation of strategy choice; to accomplish this objective, it was applied a Switching regression model to control for endogenous effects on governance and strategy decisions, in a 255 observations sample. The results indicated that entrepreneurs invest on education to better evaluate scenarios and take entrepreneurial action. Although previous studies had indicated a positive effect of experience inherited from family, the research findings suggested contingent effects. The experience inherited from family contributed to inertia in firm strategies. However, in interaction with social capital, the experience positively contributed to adoption of new strategies. Another important effect was that experience inherited from family enhanced the performance of differentiation strategy. The family social capital largely contributes to predict the entrepreneurial action. Specifically, the number of social connections enhanced the probability to switch strategy when exist contracts, moreover, suggested that socially connected people take advantages of cooperation to establish contracts, to refine its terms and to promote its stability. Enduring relationships supported the emergence of trust among agents, which enabled the decision to make specific investments even in the absence of protection arrangements. This research proposes an analytical model that evaluates human capital and social capital to predict entrepreneurial action and strategy choice. Furthermore, it proposes an analytical model to evaluate the positive family effects on business, which establishes the importance of education endowments and the transmission of social capital to future generations. This is the first research to theoretically debate and empirically test human capital and social capital arguments based on an integrated overview of family business, entrepreneurship and strategic management theory.

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LIST OF ABBREVIATIONS

4C:	*Common Code for the Coffee Community*
ABIC:	Associação Brasileira da Indústria de Café
BSCA:	*Brazilian Specialty Coffee Association*
CAPES:	Coordenação de Aperfeiçoamento de Pessoal de Nível Superior
CECAFE:	Conselho dos Exportadores de Café do Brasil
CIC:	Centro de Inteligência do Café
COOXUPE:	Cooperativa Regional de Cafeicultores de Cooxupé
CPR:	Cédula de Produto Rural
FAPESP:	Fundação de Amparo à Pesquisa do Estado de São Paulo
FLO:	*Fair Trade Labeling Organizations International*
EMBRAPA:	Empresa Brasileira de Pesquisa Agropecuária
EPAMIG:	Empresa de Pesquisa Agropecuária de Minas Gerais
IBGE:	Instituto Brasileiro de Geografia e Estatística
ICO:	*International Coffee Organization*
ICA:	*International Coffee Agreement*
PNAD:	Pesquisa Nacional por Amostra de Domicílios
SCAA:	*Specialty Coffee Association of America*

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LIST OF TABLES

1   INTRODUCTION

This doctoral dissertation incorporates human capital and social capital to improve the understanding of family business, entrepreneurship, and strategic management. Contributions in each academic field are distinctive and promising under an integrated investigation proposed by this research.

Human capital consists of education, experience, skills, and abilities. Social capital consists of the relationship between individuals or organizations. **This doctoral dissertation discusses the extent to which human capital and social capital dimensions have been neglected in the family business, entrepreneurship, and strategic management literature, besides providing empirical evidence to reinforce its importance**.

To achieve the objective of this doctoral dissertation, specific research questions are derived and discussed in each chapter, followed by a debate on literature integration, consistency and their underlying assumptions that precede each empirical investigation. The theoretical reference is grounded on the resource-based view, transaction-cost economics, strategic positioning framework, family business, entrepreneurship, human capital, and social capital literature.

Although this dissertation provides a brief presentation of the methods, it is sufficient to demonstrate that the selection is consistent with the specific research objectives. The methods applied in this research include cross-case study analysis, *Probit* and *Tobit* estimations, *Cox* model, and *Switching regression* model.

The empirical study investigates the strategy choice and entrepreneurial action of family farmers in Brazil. Specifically, it examines the farmers who switched from the low-cost strategy to differentiation strategy in the coffee production context. Brazil is the largest producer of coffee in the world, largely producing and exporting low-cost commodity coffee and differentiated specialties.

In the next section some comments on the "researcher perspective" are presented. Specific research questions are presented "at a glance", considering that each of the Chapters profoundly develops the objectives and addresses contributions to the literature. In this introduction Chapter, the dissertation structure and conceptual model are discussed.

1.1   The researcher perspective

I adopted the perspective of a researcher that communicating with family business, entrepreneurship, and strategic management audience. Indeed, each of the Chapters emphasizes one specific audience. I did not attempt to separate the audiences, but to focus on the fields' overlaps to make the importance and contributions of the human and social capital dimensions for each research field as clear as possible.

This dissertation ha been written in English, with the consensus of my advisor, for the following reasons. My research progressed significantly during my visit to Olin Business School, Washington University at St. Louis, in 2008. In addition, the English manuscript increased the number of potential reviewers, and provided the opportunity to seek contributions from professors and colleagues in Brazil. I am very much grateful to the Business Department of University of São Paulo for giving me formal authorization[1] to present my dissertation in English (see Appendix 1).

From here on, I will switch to "we" instead of "I" - the main reason being the fact that this dissertation was developed with the many contributions of professors, colleagues, and my advisor. However, possible errors and mistakes in this dissertation are mine.

1.2   Specific research objectives and dissertation structure

This dissertation is organized in five chapters, including this introduction as Chapter 1. Each of the Chapters 2, 3 and 4 addresses a specific research question, emphasizes a particular

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[1] This doctoral dissertation accomplishes the format and citation standards required by the Business Department of University of São Paulo, according to Martins *et al* (2008) based on ABNT – NBR 14724:2002.

overlap between the research fields, and provides empirical evidences. Finally, the conclusion is presented in Chapter 5.

Our understanding about how the research fields of Family Business, Entrepreneurship, and Strategy Management relate to each other is represented in Chart 1.

Chart 1- Research fields and the structure of this doctoral dissertation
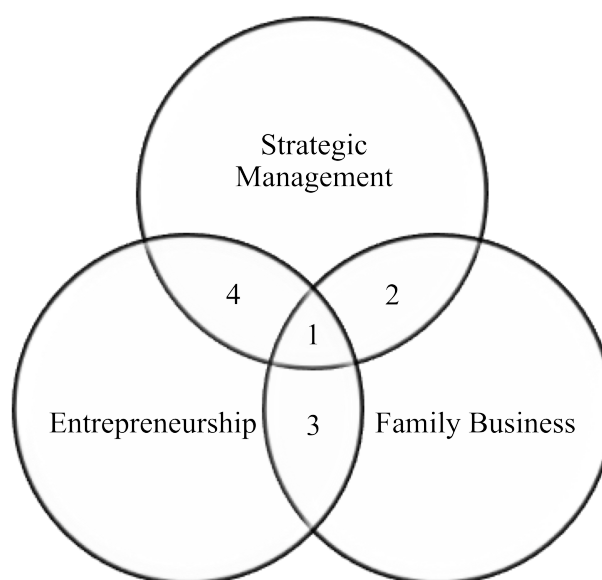
Considering the overlaps indicated by the numbers 1 - 4:

1)   We claim that human capital and social capital dimensions are the key connection for the three research fields. Gary Becker addressed the human capital concept for the first time in 1957, referring to the stock of knowledge, skills, and values embodied in people. By analyzing the patterns of investment in human capital, it is possible to understand a varied and large class of behavior in the modern economics (BECKER, 1964). According to Farr (2004), Lynda J. Hanifan addressed the social capital concept for the first time in 1916, in an article examining the local support for rural schools, entitled "The Rural School of Community Center". Social capital is an instantiate informal norm that promotes co-operation between two or more individuals (FUKUYAMA, 2001), involves the relationship between individuals or between organizations (BURT, 1997), and provides access to resources (COLEMAN, 1990) embedded within,

available through, and derived from the network (NAHAPIET; GHOSHAL, 1998) and family ties (LAIRD, 2006).

2) Chapter 2 emphasizes the overlap between Family Business and Strategic Management research fields. Family Businesses have a particular distinction from other organizations, which is the involvement of families. Previous studies associated the family involvement with sustained competitive advantage of family business over nonfamily business (HABBERSHON; WILLIAMS, 1999; HOFFMAN *et al*, 2006), as well as with value creation through family generations (SALVATO; MELIN, 2008). However, the theoretical and empirical framework to evaluate the positive mechanisms of family is still unclear. This Chapter investigates the family contributions to human capital (BECKER, 1964; SCHULTZ, 1961) and social capital (BURT, 1997; COLEMAN, 1988) as intangible resources that are valuable, rare, imperfectly imitable, and imperfectly substitutable (BARNEY, 1986). To open the family business "black box" for a better understanding of the positive contributions of family, we proposed a framework that first evaluates the influence of family on human capital and social capital, and then, we investigated how these forms of intangible resources (BARNEY, 1991; PETERAF, 1993; PETERAF; BARNEY, 2003) support strategy choices.

3) The overlap between the Entrepreneurship research field and the Family Business field is explored in Chapter 3. Family firms take advantage of commitment among family members (DONNELLEY, 1964), intimate relationships (HORTON, 1986), and the uniqueness of the integration of family and business life (HABBERSHON; WILLIAMS, 1999) to access and manage resources; however, families can accumulate non-valuable resources that lead to inertia and sub-optimal decisions (MOSAKOWSKI, 2002; TRIPSAS; GAVETTI, 2000; LEONARD-BARTON, 1992). The current business's strategy implies the choice and allocation of a certain resource bundle (BARNEY, 1986), but changing the strategy creates uncertainty about the new allocation of resources. How to deal with uncertainty and take entrepreneurial action? Although Theodore Shultz argued long ago that it is the stock of skills and knowledge (SCHULTZ, 1961) that determine the individuals' entrepreneurial ability (SCHULTZ, 1982) to respond to changes in economic environment, we are not aware of empirical studies that provide support for this proposition in the literature of entrepreneurship (KLEIN; COOK, 2005). This Chapter investigates the farmer's human capital and

social capital to explain the decision to change a low-cost strategy for a differentiation strategy (PORTER, 1998), after an institutional change in 1989. Moreover, we analyzed the effects of human and social capital to explain early or late adoption of new strategy.

4)   The research question presented in Chapter 4 investigates the triad decisions of governance, resource, and strategy. The change of positioning is associated with entrepreneurial action. The literature linking transaction cost economics, resource-based view, and strategic positing has been growing over the last years (NICKERSON *et al*, 2001; GHOSH; JOHN, 1999). These studies focus on the tangible resources and the associated level of specificity (WILLIAMSON, 1985) that it represents for a certain transaction, assuming homogeneous management ability, skills, and experience for all firms. However, many scholars attempt to the fact that human capital (BECKER, 1964; SCHULTZ, 1961, 1982) and social capital (BURT, 1997; COLEMAN, 1988) are determinants of firms' performance (HITT *et al*, 2001; HARRINGTON, 2001) and competitive advantage (DING; ABETTI, 2003; HATCH; DYER, 2004; ACQAAH, 2007). Our contribution is to address the importance of intangible resources such as human capital and social capital to improve the understanding of governance, resource, and strategy decisions. Recurring questions in strategic management literature focus on how to explaining performance differences and on how to predict the firms that would switch the strategy positioning and resource allocation. Indeed, we claim that this is a productive framework to predict these decisions, while the separate theoretical perspectives find it difficult to predict.

The contributions of the Family Business field are presented in Chapter 2, along with its implications on the Strategic Management field. We have discussed the incorporation of human capital and social capital into the resource-based view of family business. Furthermore, cross-case study analysis supports the empirical evidence. Chapter 3 presents the debate on the field of Entrepreneurship and its association with Family Business literature. We have identified proxies to measure the impact of human capital and social capital on the probability of engaging in entrepreneurial action. Furthermore, we have investigated its effects on the speed of engagement by contrasting early and late adopters. Chapter 4 discusses the triad decisions of governance, resource, and strategy. We have incorporated human capital and social capital into an analytical method, which controls self-selection problems that arise when two decisions are interdependent.

Instead of providing a deep theoretical review on human capital and social capital, we have chosen to incorporate it in the Chapters. Although the concepts do not differ, some particularities are addressed. Similarly, we chose to provide the relevant information about the Family business and Coffee business context according to the emphasis of each Chapter.

1.3   Conceptual model

Chart 2 illustrates the connections on the investigated dimensions of our research, and Table 1 provides a brief description of each dimension. The conceptual model consists of four "output" dimensions that we consider as the dependent variables when applying quantitative methods (right) and four "input" dimensions or independent variables (left).

Chart 2 – Conceptual model
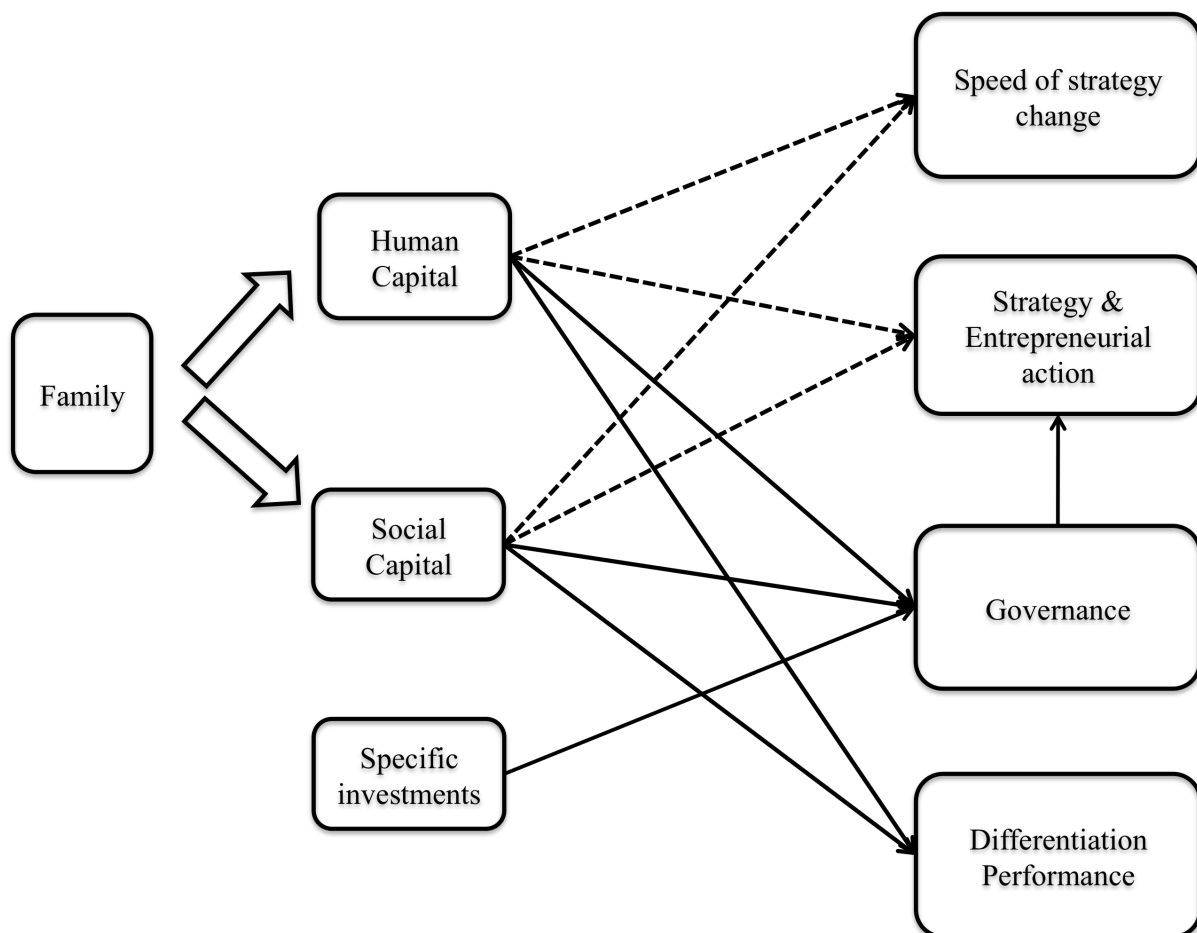
In Chapter 2, we presented our investigation on how families positively influence the business, based on the resource-based view. The research focuses on the relationships represented by the large arrows from the family dimension to human capital and social capital. The research objective developed in Chapter 3 is how entrepreneurs deal with uncertainty in order to take entrepreneurial action. The focus of investigation is on the dashed arrows in Chart 2, which connects human capital and social capital to *Speed of strategy change* and *Strategy & Entrepreneurial action*. The linear arrow connections are the focus of investigation in Chapter 4. Human capital and social capital dimensions complement the investigation about which firm switches it's positioning, considering the triad decisions of governance, resource, and strategy.

Table 1 – Conceptual model dimensions

Output dimensions (dependent variables)	
Speed of strategy change	*early* versus *late* adoption of new strategies
Strategy & Entrepreneurial action	*low-cost* and *differentiation strategy* (PORTER, 1991)
Governance	*spot-market* and *contracts* (WILLIAMSON, 1985)
Differentiation performance	price premium achieved by differentiation strategy over the low-cost strategy
Input dimensions (independent variables)	
Family	*weak* versus *strong* influence of family
Human capital	level of formal *Education* (BECKER, 1964; SCHULTZ, 1961) and *Experience* from family background (BECKER; TOMES, 1986)
Social capital	number of *Social connections* (LAIRD, 2006; HOFFMAN *et al*, 2006) and *Relationship duration* (JOSKOW, 1987; UZZI, 1997, COLEMAN, 1988)
Specific investments	*Specific investments* to a particular transaction (KLEIN *et al*, 1978; WILLIAMSON, 1985).

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2   FAMILY BUSINESS AND STRATEGIC MANAGEMENT

2.1   Introduction

Family businesses have a particular distinction from other organizations that is the involvement of families. Previous studies associated family involvement to the sustained competitive advantage of family business over nonfamily business (HABBERSHON; WILLIAMS, 1999; HOFFMAN *et al*, 2006) and to value creation through generations of family (SALVATO; MELIN, 2008). However, the theoretical and empirical framework to evaluate the positive mechanisms of family is still unclear. This Chapter investigates the family contributions to human capital (BECKER, 1964; SCHULTZ, 1961) and social capital (BURT, 1992; COLEMAN, 1988) as intangible resources that are valuable, rare, imperfectly imitable, and imperfectly substitutable (BARNEY, 1986).

Previous studies have investigated family contributions to business. Families provide a unique work environment that inspires greater employee care and loyalty (DONNELLEY, 1964; WARD, 1988). The inseparability of family and business objectives favors a long-term strategy and a commitment to accomplish it (ARONOFF; WARD, 1995). Family relationships contribute to unusual motivation, and greater communication, and favor the emergence of reliable reputation (TAGIURI; DAVIS, 1996). In addition, it is claimed that reputation of families leads to lower overall transaction costs (ARONOFF; WARD, 1995; TAGIURI; DAVIS, 1996).

Although we recognize advances in the family business literature, little is known about the mechanisms of positive family contributions to the business. In this sense, we concur with the Habbershon and Williams (1999) critique that existing literature on family business relies heavily on anecdotes, conceptual, and consultant's frameworks. Although Hoffman *et al* (2006) reacted to this by proposing a family capital theory; this perspective struggled to clarify the mechanisms of family involvement, lacked empirical evidence, and provided little distinction to social capital theory. Arregle *et al* (2007) reacted to the Habbershon and Williams (1999) critique and provided a promising framework to disentangle the social capital from the family and from the organization, considering that both have different

contributions to a family firm's social capital, but they ignored the human capital source of advantages to family firms and, as a conceptual framework, lacked empirical evidence. Salvato and Melin (2008) provided empirical support to explain value creation through family generations by means of renewing and reshaping family-specific social interactions; however, they ignored the antecedents of competitive advantages such as firm-specific knowledge, experience, and skills that a family has. Danes *et al* (2009) expanded the family capital concept by introducing the idea of financial capital and the human capital to the social capital into the discussion of family business survivability. Their findings opened discussion about stock versus use of family capital; the nonuse of family capital does not necessarily indicate absence of family capital.

Therefore, the debate about family contributions to the business is central to current literature of family business. We consider previous works (HABBERSHON; WILLIAMS, 1999; HOFFMAN *et al*, 2006; Arregle *et al*, 2007; SALVATO; MELIN, 2008; DANES *et al*, 2009) to open the "black box" for a better understanding of this phenomenon. Our contribution grounds on social capital (COLEMAN, 1988; BURT, 1992) and human capital (BECKER, 1964, SCHULTZ, 1961) as intangible resources (BARNEY, 1986; MAHONEY; PANDIAN, 1992; PETERAF, 1993) of family firms. We propose a framework that first evaluates the influence of family to human capital and social capital; then, we investigate how these forms of intangible resources (BARNEY, 1991; PETERAF, 1993; PETERAF; BARNEY, 2003) support strategy choices.

The empirical contribution consists of comparative case studies and derived propositions. Specifically, we rely on family farms (FLÖREN, 2002), a subsection of the entire family business population. The empirical study investigates owner-managed farms that ameliorate the concerns on agency costs due to separation of ownership and control (BERLE; MEANS, 1932; JENSEN; MECKLING, 1976; VILLALONGA; AMIT, 2006), and simplify the analysis of social capital once the family's social capital tends to be the same as the organizational social capital (ARREGLE *et al*, 2007). Indeed, in all cases, a single family has the ownership, the control, and the management of the business.

We are aware of previous literature about on the negative factors of family-run businesses such as nepotism, selfishness, adverse selection, and family conflicts (ANDERSON; REEB, 2003; LE BRETON-MILLER *et al*, 2004). However, our main objective is to provide a

theoretical and empirical framework to evaluate the positive effects that, despite previous advances in the literature, still are unclear. Resource-based view, human capital, and social capital offer a consistent theoretical framework for an empirical analysis of family contributions to business. We applied a comparative study of three family business cases to derive some propositions. There are emerging contributions for family business, entrepreneurship, and strategy literature.

The next section presents the theoretical references of this Chapter: the debate on family business definition and dynamics, the integration and consistency of human capital and social capital literature to resource-based view. Following a sequence, the cross-case analysis method and the criteria for case selection are presented. Finally, we address propositions derived from evidence on case studies by the analytical lenses of family business literature.

2.2   Theoretical reference

2.2.1   Family business

Hoy and Sharma (2006) detail a chronology of family business studies. The first study dates to 1953 when Grant H. Calder published his doctoral dissertation on family business entitled "Some management problems of the small family controlled manufacturing business". In fact, many scholars refer to Donnelley's article entitled "The Family Business", published in Harvard Business Review in 1964, as the seminal work in the family business field.

The definition of family business is still a central debate among scholars (LANSBERG *et al*, 1988; Handler, 1989). According to Astrachan *et al* (2002), family business is defined by means of ownership, ownership and management involvement, generational transfer, and family business culture. The problem of defining family business is its uniqueness, which is a good reason for a field of study:

> What makes a family business unique is that the pattern of ownership, governance, management, and succession materially influences the firm's goals, strategies, structure, and the manner in which each is formulated, designed, and implemented. [...] [W]e study family businesses because researchers believe that the family component shapes the business in a way that the family members of executives in non-family firms do not and cannot. (CHRISMAN *et al*, 2005, p. 22).

While Astrachan *et al* (2002) define family business as a continuum of family involvement, Chrisman *et al* (2005) provide an articulated definition. The former proposes the F-PEC scale that consists of subscales for family involvement with regard to power (ownership, governance, management), experience (generation of ownership, generation active in management, generation active on the governance board, number of contributing family members), and culture (overlap between family values and business values, family business commitment).

> The family business is a business governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families" (CHRISMAN *et al*, 2005, p. 25).

Silva Junior and Muniz (2006) investigated a Brazilian family business that failed on the succession process. In this case, the intense disputes among family members to take control of the business lead to the exit of the family through ownership sale. There exist financial and psychological reasons for this decision, in addition, the positive influence of family was lost in the succession process.

2.2.2 Family business and resource-based view

The integration of resource-based view and family business literature is not new (HABBERSHON; WILLIAMS, 1999; POZA *et al*, 2004; SALVATO; MELIN, 2008). Habbershon and Williams (1999) investigated competitive advantage for family business supported by an idiosyncratic bundle of resources that are distinctive as a result of family involvement. Considering the interaction of family and business, Habbershon and Williams proposed the concept of "familiness" that is defined "as the unique bundle of resources a particular firm has because of the systems interactions between the family, its individual members and the business" (HABBERSHON; WILLIAMS, 1999, p. 11).

The "familiness" comprises tangible resources and knowledge accumulated by the family. According to Penrose (1959), the interaction of tangible and knowledge resources drives the growth of the firms. She argued that businessmen improve the efficiency and the productivity of the firm supported by their knowledge on resources while the need to discover new applications for existing resources will drive the knowledge acquisition of the firm. Indeed, family business imposes challenges to resource-based view. "All strategies that require the

acquisition of resources for implementation have strategic factor markets associated with them" (BARNEY, 1986, p. 1232). It is counterintuitive to think of a strategic factor market of family involvement; moreover, the family role as a repository of resources has its importance diminished in a perspective of full surplus from the strategic factor market.

In fact, family business particularly fulfills the conditions that resources have to be valuable, rare, imperfectly imitable, and imperfectly substitutable (BARNEY, 1986).

> Path dependent phenomena associated with a firms' unique historical conditions create imperfectly imitable resources, such as the family's value-based organizational culture, a particular geographic location or historical asset, or a firm's reputation. Phenomena such as deeply embedded informal and formal decision-making processes in family management, the relational mentoring between parents and children, and the stakeholder relationships families have within their sourcing chain are examples of socially complex resources most often found in family firms" (HABBERSHON; WILLIAMS, 1999, p. 12).

Regarding the importance of behavioral and social phenomena, Barney and Zajac (1994) suggested its evaluation as fundamentally connected to implementation of strategies. Indeed, relationships in family business have uniqueness of behavioral dynamics.

> Relationships may be specially salient in family business for at least three reasons. First, roles may be filled by the same individual in both spheres [family and business] […] Second, family members not directly involved in the business can have substantial influence […] Third, cross-generational relationships transfer knowledge and resources that can impact the human, social, and financial capital available to the firm over time (ROTHAUSEN, 2009, p. 229).

Barney and Hansen (1994) conceived the emergence of trust as a source of competitive advantage. In fact, trust leads to a competitive advantage of a few firms in their relationships if all other firms are still exposed to opportunism threat (WILLIAMSON, 1996). Families may promote mutual confidence to prevent losses from adverse selection, moral hazard, hold-up and other vulnerabilities. In this sense, Habbershon and Williams (1999) claimed for an integration of resource-based view with agency theory and transaction cost economics:

> The multidisciplinary nature of the family business field of studies has further facilitated the generic approach to describing family firm advantages […] most of the literature has come from […] agency theory, […] transaction cost […] but the stated advantages of family firms have not been supported by research and analysis accepted by those same fields of study (HABBERSHON; WILLIAMS, 1999, p. 6).

Families may promote better internal relationships as a valuable resource that reduces the costs of alignment between owners and managers (JENSEN; MECKLING, 1976). Similarly, families facilitate the emergence of trust with suppliers and customers as a valuable resource

to reduce transaction costs. Indeed, "the economics of trust as well as other phenomena can be examined to advantage in transaction cost economizing terms" (WILLIAMSON, 1996, p. 153).

The integration with other theories is desirable to overcome the critiques on tautological issues of resource-based view. Resource-based view explains competitive advantage and variation on firms' performance by means of heterogeneous resources (PETERAF; BARNEY, 2003), and simultaneously addresses that it is because of the valuable resources that a firm achieves a competitive advantage or above-normal performance. To ameliorate tautological concerns, Peteraf and Barney (2003) argued that resources have a significant cost-lowering or benefit-enhancing effect, but this relationship is not deterministic. In addition, competitive advantage is associated to value creation, but not to profit in a deterministic way. This gives an opportunity to other theories, for instance, the economizing perspective of transaction cost economics (WILLIAMSON, 1991) and strategic positioning framework (PORTER, 1991) to complement the resource-based view as an analytical framework for understanding firm behavior and performance.

There are reasons to integrate human capital and social capital to resource-based view. Firms raise rents to the extent that they accumulate rent-producing resources that meet the tests of scarcity, imperfect imitability[2], and imperfect tradeability in factor markets (BARNEY, 1991; PETERAF, 1993). Human and social capital would appear to meet these tests. Hatch and Dyer (2004) provide empirical evidence to support that even if people who accumulated firm-specific human capital migrate to competitors, the adjustments to the new environment prevent from immediate expropriation. Moreover, tacit knowledge is difficult to codify and is transferred only through direct exposure and experience (LANE; LUBATKIN, 1998). To some extent, the formation of social capital has a path-dependent component that prevents the replication of exactly the same networks or social ties. Indeed, Dierickx and Cool (1989) focused on resources that are developed and accumulated within the firm, which have a strong tacit dimension and are socially complex.

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[2] Peteraf (1993) argues that imperfect imitability and imperfect substitutability are critical factors to limit ex-post competition to preserve rents over a longer term. "Competition may dissipate rents by increasing the supply of scarce resources. Alternatively, it might undermine a monopolist's (or oligopolist's) attempts to restrict output." (PETERAF, 1993, p. 182).

With regard to previous empirical work integrating human capital and social capital as intangible resources, Powell and Dent-Micallef (1997) provide empirical support on information technology industry that tangible resources alone have not produced sustainable performance advantages, but some firms have gained advantage by using information technology to leverage intangible human and business resources. It is the idea that machines need people to make them productive. In addition, Mahoney and Pandian (1992) recognizes human capital as a valuable resource for a firm. Finally, Powell (1992) develops connections for resource-based view to explain variance on firms' performance. In this sense, the skills to align the firm's initiatives according to the business environment are valuable resources capable of generating economic rents.

2.2.3   Family business and Human capital

Human capital (BECKER, 1964; SCHULTZ, 1961, 1982) consists of investments in education, accumulated knowledge, skills, and experience. Families transmit human capital to the next generations:

> Some children have an advantage because they are born into families with greater ability, greater emphasis on childhood learning, and other favorable cultural and genetic attributes. Both biology and culture are transmitted from parents to children, one encoded in DNA and the other in family's culture (BECKER, 1993, p. 260)

Becker (1964) reinforced the importance of family background on schooling. While empirical studies had emphasized the contributions of education in people's earnings, the impact of family background was understated. For instance, years of schooling is not a random process, but result of a family optimizing behavior. According to Schultz (1975), education also affects the family:

> Education affects the choice of mates in marriage. It may affect the preference for children. It assuredly affects the earnings of women who enter the labor force either part or full time. It evidently affects the household productivity of housewives. It probably affects the incidence of child mortality and it undoubtedly affects the ability of women to control the number of births (SCHULTZ, 1975, p. 837).

Regarding to fertility, Becker and Tomes (1986) argued that the number of children affects the earnings mobility through generations. Additional children in a family reduce the amount invested in each one. Even though cultural and genetic endowments are "automatically" transmitted from parents to children, the family size reduces the degree of inheritability. With

regard to cultural endowments, Anuatti-Neto and Narita (2004) investigated the influence of religious orientation to human capital formation in Brazilian families based on official data from 1980 and 1991 (IBGE and PNDA). For an illustration, children from Jewish parents showed 25,4% more schooling than children from Catholic parents, after controlling for ethnic background, revenue, and geographic region.

Family business may take advantage of investing in human capital as a stock of knowledge, skills, and abilities that contributes to firm's flexibility (SORENSON; BIERMAN, 2009). In this sense, Sharma (2008) suggests that the stock of human capital can be made available to business, family and governance systems, according to its needs. Particularities of human capital dynamics in family business were addressed in previous literature; for instance, stocks of human resources are used to take care of family members (RODRIGUEZ e*t al*, 2009), while the stocks of human capital are increased by including spouses in the business (ROTHAUSEN, 2009). In addition, family members often work in the firm without pay, a completely different situation compared to hired-labor relationship for nonfamily members (DANES *et al*, 2009).

The integration of resource-base-view and human capital theory is not new (HATCH; DYER, 2004; STURMAN *et al*, 2008). Hatch and Dyer (2004) provided empirical evidence to support that human capital is an important source of competitive advantage of firms because it is specific to the originating firm and, even if human capital migrates to competitors, the adjustments to the new environment prevent from immediate expropriation. In contrast, Sturman *et al* (2008) indicated some individual expropriation when they investigated the compensation of executives on a job mobility context. Executives who invested in firm-specific knowledge are paid better when switching jobs to competitors in the same industry. Analogously, compensation decreases for nontransferable firm-specific knowledge. It is important to reinforce that Sturman *et al* (2008) assumed human capital as valuable, rare, imperfectly imitable, and imperfectly substitutable resource (BARNEY, 1986) to support their findings. Competitors pay more for specific-human capital to attract valuable resource or for specific purposes of taking this human capital away from a firm.

2.2.4   Family business and Social capital

Social capital involves relationships between individuals or between organizations (BURT, 1992) that are associated to firms' positive performance (HITT *et al*, 2001) and competitive advantage (DING; ABETTI, 2003; ACQAAH, 2007). Therefore, social capital by itself represents a valuable resource and, in addition, provides access to other resources embedded within, available through, and derived from network (NAHAPIET; GHOSHAL, 1998) and from family ties (LAIRD, 2006), which is consistent with resource-based view.

> Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure. Like other forms of capital social capital is productive, making possible the achievement of certain ends that would not be attainable in its absence (COLEMAN, 1990, p. 302).

According to Hoffman *et al* (2006), family ties are stronger, more intense, and more enduring than the social capital of nonfamily business. A family invests on its social capital as a stock with greater expectation of (uncertain) future returns. However, there is no available strategic factor market (BARNEY, 1986) for family social capital; it simply is not available for acquisition (NAHAPIET; GHOSHAL, 1998). Thus, a family social capital has a path-dependent component that reinforces the imperfectly imitability and imperfectly substitutability characteristics.

A family social capital provides closure (COLEMAN, 1988) to firms, in the sense that there are sufficient ties between members to guarantee the observance of norms. Hoffman *et al* (2006) suggested that families provide the necessary consistency to quickly socialize new members about norms and expectations in the business. Indeed, Hoffman *et al* (2006) claimed that a family capital differs from the social capital because the former is embedded in the organization and is always available to firms, while the latter demands extensive development that may take time to occur. In this sense, firms take advantage of readily available family norms to increase efficiency of action and reduce external unknowns; firms are favored by trust and reciprocity from close relationships and "Family members are then more willing to work for the family because they have the knowledge and expectation that the family will work for them when the time comes" (HOFFMAN *et al*, 2006, p. 139).

Consistent with the resource-based perspective adopted by Habbershon and Williams (1999), Salvato and Melin (2008) investigated the social capital of family-controlled business in the wine industry in Italy and Switzerland. Their findings from comparative case studies suggest that the structural dimensions of social capital such as professional and social network (NAHAPIET; GHOSHAL, 1998) facilitate the access to resources due to new strategies initiatives. In addition, family's trust and reputation, from the relational dimension of social capital, promotes the resource recombination necessary to strategic initiatives.

A family business social capital has contribution from both families' social capital and organization social capital (ARREGLE *et al*, 2007). In this sense, the former specifically provides stability, interactions, interdependence, closure, and commitment to provide critical resources for the firm. The latter relates to isomorphic tendencies, organizational identity, and rationality. Although Arregle *et al* (2007) considered family's ability a source of family's social capital, by definition it is a human capital (BECKER, 1986; SCHULTZ, 1961). They discussed how stable is the family business social capital due to family events such as divorce and scandal. In addition, Arregel *et al* (2007) suggested that a change in the firm strategy also alters the value of current social capital from the family and from the organization.

2.3   Methods

Our research consists of brief individual case studies, followed by cross-case analysis (YIN, 1981). This method is appropriate to evaluate real-world phenomena by contrasting different contexts especially when "the boundaries between phenomenon and context are not clearly evident" (YIN, 1981, p. 59). In fact, family firm businesses are embedded on its context, for instance, we cannot disentangle the family social ties' formation from the business community. This method is also appropriate to derive some propositions for a general theory building approach (EISENHARDT, 1989; 2007). The analytical framework is based on the theory of family business, human capital, and social capital.

To prevent oversimplified answers from the respondents due to close-ended questions, the interviews were semi-structured. This is consistent with the idea that:

> […] investigators should formulate a research problem and possibly specify some potentially important variables, with some reference to extant literature. However, they should avoid thinking about specific relationships between variables and theories as much as possible, especially at the outset of the process (EISENHARDT, 1989, p. 536).

To provide a comparable *chain of evidence* (YIN, 1981), all respondents provided initial reactions for the following topics: the influence of the family on the business and the influence of the business on the family; reasons to focus on commodity strategy or to pursue a differentiation strategy (PORTER, 1991); reasons to trade coffee by spot-market or contractual arrangements (WILLIAMSON, 1985); description of resources bundle (BARNEY, 1991); and rearrangement of bundles according to changes on strategy. After the first round of interview, we addressed specific questions about: contributions of education and family background on business decisions; contributions of social connections on business decisions; what type of endowment (education, training, experience, financial resource, social connections) the business owner will provide to the next generation.

The leader of Hafers family and the heir of Zenun family were interviewed at Sao Paulo - out of the farm site – at two different times. The leader of Grossi family was interviewed at Patrocinio – State of Minas Gerais. The visit took two days of both interviews and visits to coffee trading offices, production farm sites, and coffee quality classification offices (see appendix 6). To complement information, we also gathered data from secondary sources such as website and specialized magazines.

The selection of cases was intentional to fulfill theoretical categories and to provide examples of polar types (EISENHARDT, 1989). The selected cases vary on strategy orientation, trade governance, resources from family and from business. Hafers family is focused on commodity strategy, while Grossi family and Zenun family switched to differentiation strategy. Hafers family and Zenun family business are managed by the third generation, while Grossi family business is managed by its founder.

Consistent with Salvato and Melin (2008), we selected the single strategic initiative as the unit of analysis. Given the intangible and extensive characteristic of human and social capital, it was important to connect it to a more observable unit of analysis. Thus, our data collection follows the *chain of evidence* (YIN, 1981) framework with focus on decisions and behaviors, rather than on beliefs and intentions, to improve the reliability of our study.

2.4   Case studies

The empirical study investigates owner-managed family farms (FLÖREN, 2002) that ameliorate the concerns on agency costs due to separation of ownership and control (BERLE; MEANS, 1932; JENSEN; MECKLING, 1976; VILLALONGA; AMIT, 2006), and simplify the analysis of social capital once the family's social capital tends to be the same as the organizational social capital (ARREGLE *et al*, 2007). Indeed, in all cases, a single family has the ownership, the control, and the management of the business.

HAFERS Family

Identification. Luiz Marcos Suplicy Hafers is 73 years old and is the owner of a medium-scale coffee farm at Ribeirão Claro, at northwest of State of Paraná. His grandfather entered coffee business in 1908 as a coffee farmer and as a coffee-trading businessman. Although belonging to third generation in coffee business, Luiz Hafers preferred to have his own business and separated from the family in 1962, when he bought 400 hectares of land. Hafers is a former president (1996-2002) of *Sociedade Rural Brasileira* (Brazilian Rural Society), whose main objective is the political leadership of agribusiness society, being responsible for communication, representation, and negotiation with government and society since 1919.

Family and business. Hafers believes that the family provides the long-term orientation, which a nonfamily manager lacks: "if the business goes bad, the nonfamily manager just switches to another job". Moreover, he believes that the family cannot be narrowed to the ownership, but has to lead the management: "it is the family that takes care of the business survival and profitability". In contrast, his son-in-law and grandchild do not perceive value by participating in the business management; for this reason, they are not in the coffee business.

Succession. Hafers believes that "the next generation wants to live in the big cities, not isolated in small towns". Indeed, Hafers agrees with younger generations; although it is worrying in management succession of the business, he prefers family members to invest in good education and to have experience in the competitive market for highly qualified professionals in the big cities.

Strategy choice. Hafers focused on a low-cost strategy, which is commodity production. Profitability is defined by the ability to manage a firm's resources efficiently because the market gives the price for the commodity coffee. Hafers chose not to pursue a differentiation strategy not because of lack of knowledge on how to produce a specialty coffee, but because of concerns on how to appropriate value. In his view, the farmer has no incentive to invest on specialty coffees because big processing and distributor companies retain the specialty business margins.

Resource bundle. Hafers allocates resources toward a cost-oriented efficiency. His own dedication is seen in other activities as a society representative. A nonfamily-hired manager controls all activities in the coffee farm site; however all decisions are centered in Hafers, especially the decisions on volume, price, and timing to trade the coffee. As a bargain strategy, Hafers induces competition among coffee traders by switching the priority before beginning to negotiate with one particular trader or the other.

GROSSI Family

Identification. José Carlos Grossi is 63 years old and runs a large-scale coffee production operation in Patrocinio, at southwest of the State of Minas Gerais. Grossi was a pioneer in coffee production at *Cerrado* region of Minas Gerais from the year 1971. Now, he owns and manages 12 coffee farms in a total of 2.300 hectares operation. Grossi was the first, among his brothers and sisters, to complete college and also the first to enter into coffee business. In the business community, Grossi is well known as a coffee pioneer and, moreover, a pioneer on specialty coffee production since 1992. At the regional level, Grossi founded coffee farmer cooperatives and developed social assistance activities for health and care of children. For these initiatives, Grossi won the following recognitions: *Diploma da Medalha "Desembargador Helio Costa"* (1996); *Ordem do Mérito Legislativo – MG* (1998); *Prêmio CECAFE de Empreendedor do Ano* (2003); *Cidadão Honorário de Patrocínio* (2007); *Comenda Antônio Secundino de São José* (2008).

Family and business. In the beginning, Grossi's parents had deep concerns over his initiative to produce coffee in a nontraditional area for coffee production. At that time, Grossi had a few

years of experience as an agrichemical technical salesman, and no support[3] was provided by Brazilian agencies specialized in regional development; for instance, EMBRAPA began operations after 1973 and EPAMIG was founded only in 1974. According to Grossi, "Dad thought I was insane, he insisted that I should invest in the State of Paraná or in the State of São Paulo because it was a traditional production area where most known coffee industry and buyers were established". At the same time, Grossi was confident that it was a promising investment, although he could not convince his own family: "my friends from college suggested the investment but, in fact, some of them gave up even before making the investment and others gave up when faced the initial difficulties". Actually, the resistance from family made him even more confident: "I could not failure… I had a debt to pay and had no financial support from my family… Mom wanted to send me a priest to change my mind".

Succession. As for the next generation, Grossi relies on investment in education, professional experience, and entrepreneurial attitudes. His daughter took a college degree in business and runs her own business at Brasilia. According to Grossi, "My daughter worked on our business for a while, but we were not prepared at that time… it was challenging being her Dad and boss… after a while, she got married and left our business". Grossi younger sons plan to take college degrees related to the current coffee business. One wants to follow the path of Grossi by taking an agronomy degree, the other plans a degree in business. According to Grossi "I want my boys to have experience in different companies before coming to our business, but, at the same time, I want them here with me on their vacation because there are something that they can only learn running the business".

Strategy choice. Grossi began his business producing commodity coffee. After the coffee market's institutional change in 1989, he switched his production strategy to specialty coffee. Moreover, Grossi traveled the world during the 1990s to promote and export Brazilian coffee. From the contacts made on these travel initiatives, Grossi met Italian executives who helped him to become the first Brazilian supplier of specialty coffees to *illycaffè* in 1992. Now, almost half of his current production is classified as specialty coffee, and Grossi exports directly to North America, Europe and Asia.

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[3] At that time, there was uncertainty about soil fertility and climate regularity. Indeed, the uncertainty was also related to the existence of technology to correct the natural conditions of soil fertility, despite the economic implications. Similarly, irrigation was an option to correct for dry seasons, but concerns extend to regularity of climate condition to make the coffee tree flourish and then form the coffee beans.

Resource bundle. Grossi allocates resources towards differentiation strategy. All his efforts, despite the health and care assistance activities for children, are totally dedicated to the coffee business. He lived in the same building of this business office even after he was successfully established. There are many investments on tangible resources to produce specialty coffees: (1) one of the farms is dedicated to genetic developments of coffee varieties, from where new hybrids are derived and the quality of production due to regional climate and soil condition is observed; (2) investments in equipments and processes to dry the coffee according to the type of special coffee; (3) establishment of certification procedures, for instance, UTZ, BSC, and Rainforest, which requires information about inputs, final product, and tracking through all stages on the farm and storage facility (see appendix 5). Other investments include the prospection of clients on domestic and international market, and investments to update knowledge on production techniques and on market trends.

ZENUN Family

Identification. Fernando Zenun Junqueira is 29 years old and leads the family business toward its differentiation strategy. After degree in business, he began his professional career in the financial market, specifically on private equity investors' banking and consulting. Fernando Zenun Junqueira is a third generation of a family that began the coffee business with Abrão Zenun in 1969. Only two of the four heirs from second generation actively participate in the business. The operation is a medium-scale range of 3 farms in a total of 150 hectares at Campestre, southeast of the State of Minas Gerais.

Family and business. The farm was bought as an opportunity to diversify Abrão Zenun's investments. He was a medical physician who grew up in a farming environment, one of the reasons to invest in farms. By the mid-1980s, Abrão Zenun diversified coffee production by investing in milk production, but this initiative was not profitable and was stopped. The older son was also a medical physician and shared the time with Abrão Zenun to manage the coffee farm. When Abrão retired due to old age, the younger son moved back to Campestre to take care of Abrão's business. According to Fernando Zenun Junqueira, "When my grandfather needed assistance, my uncle left his job as university professor and moved back to help my other uncle. I think this was not planned, just happened that way".

Succession. According to Fernando, "I had no plans to work for the family business; however, my two uncles invited me to think about alternatives to generate more value to our current business". Indeed, the younger uncle depends on farm activity because he left his previous job, and Fernando compliments, "Despite the fact that my [younger] uncle is dependent on the farm activity, I'm pretty sure that he figures out that the activities could be more profitable... I would say that this is due to the 'external vision' from one who is outside the daily basis of the business; it happened to me when I worked in private equity".

Strategy choice. Zenun family began coffee production as a diversified activity to the medical business for Abrão (first generation) and for Fernando's older uncle (second generation). However, when Fernando's younger uncle (second generation) entered the coffee business, they decided to switch to a differentiation strategy in 2002. Moreover, this decision attracted Fernando (third generation) to the business. The main reason to pursue a differentiation strategy is to increase the profitability of the existing business.

Resource bundle. All resources are allocated to accomplish the differentiation strategy. The major decision of Zenun family business was the establishment of its own trademark. This had many implications for the business: (1) to create a trademark, it was necessary to establish its own coffee blend by mixing different types of coffee toward a quality equilibrium and differentiation; (2) as for coordination, it implies the vertical coordination of more stages on the coffee system, for instance, the coordination of coffee supply outside its own production, the coordination of storage, industrial activity, and distribution channels until the end consumer. Despite these implications due to trademark, Zenun family also invested on specific equipment and processes to guarantee the quality of coffee and evaluate the needs to invest in certification programs owing to international market consumers.

2.5   Cross-case Analysis

To develop the cross-case analysis (YIN, 1981), the key factors that are influenced by family and which support the strategy initiative were identified. In this sense, we selected *Education* (BECKER, 1964) and *Experience* from family background (SCHULTZ, 1961) as proxies for human capital. With regard to *proxies* for social capital, we selected *Social connections* and

Relationship duration as Hoffman *et al* (2006) associated that family firms have stronger family ties (the former) and enduring relationship (the latter).

Chart 3 – Cross-case analysis: family influence on intangible resources

		HAFERS Family		GROSSI Family		ZENUN Family
Education	+	Weak influence of family on education investment	+++	Strong influence of family for José Carlos Grossi degree in Agronomy	++	Some influence of family for Fernando Zenun Junqueira education toward the family business
Experience	+++	Strong influence from family accumulated experience since 1908	0	No influence from family	+++	Strong influence from family accumulated experience since 1969
Social connections	0	No influence from family	+++	Strong support from family to community and businesses connections	+	Weak support from family to community social connections
Relationship duration	0	No influence from family	++	Some support from family on relationship duration. Prestige in the case of *illycaffè*	+	Weak support from family to relationship duration

Chart 3 shows our efforts to distinguish the influence of the family in each of the three cases. Hafers family had a weak influence on his *Education*; indeed, when he was younger, going to school was associated to shirking on the work. We considered that Grossi family had a strong influence compared to some influence on the *Education* of Fernando Zenun because the former was strictly oriented to the business. Regarding *Experience* from family background, Hafers and Zenun families clearly provide more accumulated knowledge than Grossi family.

With regard to *Social connections*, Grossi family provided strong support. This can be explained by the fact that his family belongs to the local community, and connections are nurtured not only for business purposes. In this sense, Hafers family had no influence because no family member lives or interacts in the local community. Zenun family, as a traditional family in their community, had some influence to articulate *Social connections*. The analysis of family influence on *Relationship duration* is more difficult than previous ones. To some extent, we assume that enduring relationships are positively associate with family prestige in the local community. Therefore, HAFERS family had no incentive to support enduring

relationships. Similarly, Zenun family weakly supported enduring duration, while Grossi family supported it.

Chart 4 presents the association of human capital, social capital, and differentiation strategies. *Education* strongly supports the adoption of differentiation strategies. According to Grossi, "When I arrived here [at Patrocinio], I had to remember my classes on soil dynamics, on nutrition of plants and on coffee production to begin my business […] this was also important when I decided to produce specialty coffees". Fernando Zenun Junqueira presents a perspective different from the production techniques, but a business one: "I wanted to improve the commercialization of coffee by introducing hedge and future markets arrangements that I learned and researched[4] during college".

Chart 4 – Cross-case analysis: intangible resources and differentiation strategy

	HAFERS Family		GROSSI Family		ZENUN Family	
Education	0	The choice for commodity is not justified by lack of knowledge on specialty	+++	Strong support for education to access codified knowledge to produce specialty coffee	++	Support for education to access codified knowledge to produce and industrialize specialty coffee
Experience	---	Family experience that big companies dominate the coffee market discouraged new investments	+	Experience accumulated by Grossi supports the adjustments necessary to produce specialty coffee	--	Family "path dependence" discouraged the early adoption of differentiation strategy
Social connections	-	Low social connections with local community diminish the alternative buyers in case of specialty production	+++	Connections with business community facilitate investments in specialty coffee	++	Connections with business community facilitate identification of opportunities beyond the production stage
Relationship duration	0	The choice for commodity is not related to lack of enduring duration if contracts are available	+++	Strongly support specific investments even in absence of formal contract (becomes a relational or implicit contract)	+	Support the establishment of contracts

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[4] Indeed, Fernando Zenun Junqueira developed a paper on the issue: JUNQUEIRA, Fernando, Z.; SAES, Maria Sylvia M. Contratos Futuros de Café Como Alternativa para Diminuir o Risco de uma Carteira. Working Paper FEA-USP. 2005. 84p.
Download: http://www.ead.fea.usp.br/tcc/trabalhos/TCC_Fernando%20Junqueira.pdf

Experience from family background is negatively associated to adoption of differentiation strategy. Indeed, *Experience* discouraged Hafers family from changing the strategy. According to Hafers, "As I have always experienced, the agricultural producer takes all the risks while the industry takes all the margins of the business". Zenun family was a late adopter of specialty coffee production due to reasons associated to *Experience*; according to Fernando, "I'm not sure about the reasons not to have switched to specialty coffee before, I guess it was because of inertia; my grandfather and uncle were used to producing commodity coffee".

Social connections had a large impact on Grossi decision to invest in specialty coffee. Grossi remembers that: "in one of my international visits, I met executives from Italy who introduced me to Dr. Ernesto Illy. Some years later, in 1992, I exported the first coffee load to illycaffè and never stopped since then[5]". In addition, this passage explains *Relationship duration*. Enduring relationship with *illycaffè* may explain why Grossi makes specific investments to pursue a differentiation strategy even in the absence of formal contract to prevent losses from opportunism.

Zenun family relies on *Social connections* to identify opportunities on other stages of the coffee value chain. According to Fernando, "We had doubts on investing in our own trademark because we needed to create an identity, I mean, a coffee blend that would be only ours. Then, I remembered that a friend of mine knew a barista that could do this job for us". Enduring relationships also favored Zenun family, for instance, Fernando said that: "Even though we had a contract with the roast industry to produce our coffee blend, the potential damage was enormous because our blend could be offered to competitors […] we want to invest in our own roast industry in the future, but meanwhile, we will trust on our partner we know for many years".

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[5] According to Grossi, he is the only Brazilian coffee producer who supplies *illycaffè* every year since 1992, when *illycaffè* first bought coffee directly from Brazil.

2.6   Final remarks

Family businesses have a particular distinction from other organizations that is the involvement of families. We compared three family farms (FLÖREN, 2002) to investigate the family contributions to human capital (BECKER, 1986; SCHULTZ, 1961) and to social capital (BURT, 1992; COLEMAN, 1988). Consistent with previous literature, we integrated resource-based view with human capital (HATCH; DYER, 2004; STURMAN *et al*, 2008) and with social capital (NAHAPIET; GHOSHAL, 1998; SALVATO; MELIN, 2008).

To open the family business "black box" for a better understanding of family positive contributions, we proposed a framework that first evaluates the influence of family to human capital and social capital; then, we investigated how these forms of intangible resources (BARNEY, 1991; PETERAF, 1993; PETERAF; BARNEY, 2003) support strategy choices.

To achieve the research objectives, the investigations were focused on owner-managed family farms (FLÖREN, 2002) that ameliorate the concerns on agency costs due to separation of ownership and control (BERLE; MEANS, 1932; JENSEN; MECKLING, 1976; VILLALONGA; AMIT, 2006), and simplify the analysis of social capital once the family's social capital tends to be the same as the organizational social capital (ARREGLE *et al*, 2007). Despite the limitations from the particularities of our research object, we are aware of limitations to generalize our findings. Indeed, we base on Eisenhardt's work (1989) to derive propositions for future research and for a general theory building from the case studies.

Our finding linking family influence to intangible resources, which does (or does not) support a strategy choice is shown in Chart 5. The selection of cases was intentional so as to provide examples of polar cases (EISENHARDT, 1989). Hafers family is focused on commodity strategy, Grossi family is an early adopter of differentiation strategy, and Zenun family is a late adopter of differentiation strategy.

Family investments on *Education* increase the flexibility of the firm (SORESON; BIERMAN, 2009) that in our context is the flexibility to manage commodity and specialty production. Chart 5 indicates that *Education* is positively influenced by family and positively supports the adoption of differentiation strategy – and the contrary is also supported in the case of Hafers family. With regard to strategy decision, we associate high level of *Education* to a better

capacity to evaluate resources of the firm (LIPPMAN; RUMELT, 1982; PETERAF, 1993) and to make adjustments to pursue a differentiation strategy. Thus, we suggest our first proposition:

> Proposition 1: The family positively contributes to the business by investing in the education of family members, a valuable resource that enables the recombination of other resources to engage into new activities.

Chart 5 – Cross-case analysis: influence of family, intangible resources and strategy choice

	HAFERS Family Focus on commodity strategy	GROSSI Family Early adopter of differentiation strategy	ZENUN Family Late adopter of differentiation strategy
Education	(+ / 0) Weak influence of family and no support for differentiation strategy	(+++ / +++) Strong influence of family and strong support for differentiation strategy	(++ / +) Influence of family and support for differentiation strategy
Experience	(+++ / ---) Strong influence of family and against differentiation strategy	(0 / +) No influence of family and support for differentiation strategy	(+++ / ---) Strong influence of family and against differentiation strategy
Social connections	(0 / -) No influence of family and weakly against differentiation strategy	(+++ / +++) Strong influence of family and strong support for differentiation strategy	(+ / ++) Some influence of family and support for differentiation strategy
Relationship duration	(0 / 0) No influence of family and no support for differentiation strategy	(++ / +++) Influence of family and strong support for differentiation strategy	(+ / +) Some influence of family amd support for differentiation strategy

Experience from family background is another proxy for human capital (BECKER; TOMES, 1986) that the family clearly contributes to. Although this type of human capital reinforces the imperfectly imitable and imperfectly substitutable characteristics of valuable resources (BARNEY, 1986), our findings suggest that it was associated to nonvaluable resources that restricted adjustments on firm's strategy. Chart 5 presents the negative association of *Experience* from family background and strategy choice. Indeed, *Experience* was associated to inertia effects. Therefore, we state our second proposition:

> Proposition 2: The experience from family background increases through generations, but is negatively associated to engagement into new activities.

Family investments in social capital provided access to resources (NAHAPIET; GHOSHAL, 1998), such as the contact with coffee importers in the Grossi family case (see Table 3). Our

finding is consistent with Salvato and Melin (2008); that family's social capital facilitates the access to resources due to new strategies' initiatives. Both *Social connections* and *Relationship duration* proxies indicate the same positive association to strategy initiatives. Thus, we state our third proposition:

> Proposition 3: The family positively contributes to the business by investing in social connections and relationship duration, which consists of valuable resources for engagement in new activities.

Finally, we reinforce the need for better understanding of family contributions to the business. Resource-based view, complemented by human capital and social capital, provides a promising framework for future research. We provided a discussion on the integration of these different perspectives to assure consistency. Moreover, we provided some empirical evidence, despite the limitations of case studies. In conclusion, we derived some propositions that will benefit from a refinement in measures and from a quantitative analysis.

3 FAMILY BUSINESS AND ENTREPRENEURSHIP

3.1 Introduction

In accessing and managing resources, family firms take advantage of commitment among family members (DONNELLEY, 1964), intimate relationships (HORTON, 1986) and the uniqueness of the integration of family and business life (HABBERSHON; WILLIAMS, 1999). However, families can accumulate non-valuable resources that lead to inertia and sub-optimal decisions (MOSAKOWSKI, 2002; TRIPSAS; GAVETTI, 2000; LEONARD-BARTON, 1992). The current business's strategy implies the choosing and allocating a certain resource bundle (BARNEY, 1986), but changing the strategy creates uncertainty about the new allocation of resources. How to deal with uncertainty and take entrepreneurial action?

Although Theodore Shultz argued long ago that it is the stock of skills and knowledge (SCHULTZ, 1961) that determines the individuals' entrepreneurial ability (SCHULTZ, 1982) to respond to changes in economic environment, few are aware of studies in the literature of entrepreneurship that support this proposition (KLEIN; COOK, 2005). We review the classic developments on entrepreneurship to provide a broad framework for exploring new strategies formation within current business.

Penrose (1959) suggests that firms adopt new strategies to appropriate value from underutilized resources and capabilities; if the new activities are related to the current one, they can possibly capture synergies and enhance the knowledge base. Besides physical and other tangible resources, we rely on the sources of human capital (COLEMAN, 1988; HITT *et al*, 2001; HATCH; DYER, 2004; GIBBONS; WALDMAN, 2004) and social capital (BURT, 1992; WALKER *et al*, 1997; NAHAPIET; GHOSHAL, 1998; SHANE; STUART, 2002) to investigate their effects on entrepreneurial action in family firms.

The family firms face additional challenges to manage resources:

> […] even when the shedding decision (of resources) is based on objective information and the business environment warrants the action […] this can lead to inertia, especially if the resource in question contributed to prior success […] Considering the generational outlook of family firms and the overarching emotional ties between family members/employees, releasing a family

> member may be extraordinarily difficult […] shedding resources is often a difficult decision, these problems are usually less acute in nonfamily firms (SIRMON; HITT, 2003, p. 347).

This Chapter investigates the farmer's human capital and social capital to explain the decision to change a low-cost strategy for a differentiation strategy (PORTER, 1998). The Brazilian coffee production context is considered appropriate for this study, because we can identify the starting time of differentiation strategies, which are associated with an institutional change in 1989. We observe only low-cost production until the year of 1989. After this time, we observe some farmers that adopt the differentiated strategy while others keep focused on low-cost strategy.

By switching strategies, one can get to choose from important resource allocation trade-offs:

> As organizations in emerging markets begin to compete with one another and foreign firms because of the liberalization of their economies, their success depends upon their ability to formulate and implement a coherent competitive strategy. The strategies of low cost and differentiation are concerned with how an organization develops competitive advantage in an industry relative to its rivals (AQCAAH, 2007, p. 241).

We investigate the farmers' human capital and its effects on their strategy decision. Does the farmer's educational level and experience from family background change the probability of adopting the differentiation strategy? Considering that social capital may generate human capital (COLEMAN, 1988), the effects of both these capitals on the entrepreneurial ability of family farms were investigated. With regard to social capital, the investigation aimed to determine the extent that family ties at the community level and the accumulated years of relationship with the buyer affect the strategy choice. Moreover, the effects of human and social capital were analyzed to explain early and late adopters of new strategy.

The next section discusses the concept of family firms and family farms besides providing some background on coffee business and information available about resource allocation due to low-cost and differentiation strategies. The theoretical references are organized into different sections: entrepreneurship literature, human capital, social capital and interaction effects of human and social capital. Following this are presented the estimation methods and description of the data. Results of hypothesis testing, limitations and conclusions are presented in the last section.

3.2   The family farm and coffee business context

3.2.1   The family farm

Flören (2002) articulated the definition of family farm as a subsection of the entire family business population[6]. According to his definition in the Dutch context, an enterprise is recognized as a family business if it complies with one of the following three criteria: (1) a single family owns more than 50 percent of the shares (regards ownership control by a family). However, if the business is started less than 10 years ago, the business should also employ at least one more family member of the owner(s). (2) A single family can exercise considerable influence on the business strategy or succession decisions. (3) At least two members of the Board of Directors or Board of Advisors are from one family.

Focusing the investigation of family firms in the agricultural sector is relevant because:

> […] a significant proportion of the family farms is faced with uncertain futures in farming because of a hostile external environment, including rising land prices, volatile markets, increasing competition and internalization […] there exist some internal factors – factors of human relationships, organization, management, and planning – that have a strong impact on survival or failure (FLOREN, 2002, p. 85).

We turn to investigate the human capital and social capital of family farms on formation of new activities or strategies to overcome those challenges. Even though Becker and Tomes (1986) argued that family's investments are, in general, primarily on children's education, Keefe and Burk (1967) suggested the wealth of family farms in the United States to be split between consumption by the family and investment in the farm business. Moreover, a family farm chooses from at least four alternatives: "(1) present farm family living, (2) expenditure for farm production, (3) investment for farm production, (4) investment in non-farm resources such as the farm home, higher education for the children […]" (KEEFE; BURK, 1967, p. 35). Investment decisions on family farms are interdependent on farm and family levels; both pursue the economic profit to enhance family's wealth and the satisfaction of family issues.

For empirical study here, the farmers on Brazilian Coffee Production System are considered. The sample consists of family farms that comply with Flören's (2002) conceptual definition

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[6] See Flören (2002,p. 17-22) for an extensive discussion on the definitions of family business. The definitions are aggregated into categories: generational transfer, interdependent subsystems, multiple exclusive, voting control, family management, family ownership, multiple inclusive, family employment, ownership-management.

and criteria of the family business. It is important to stress here that the farmers constituting the sample differ widely in terms of generational experience (incumbents in coffee business and famers with long tradition in the business, up to the seventh family generation) and size of the operations (small family farms dependent on family members as labor force and "corporate" family farms).

3.2.2 The international coffee market regulation

The coffee market has a long history of regulation, beginning from the early 19th century. Brazil, holding as it did three fourths of the world production around this time, and relying exclusively on this product for its foreign exchange earnings, adopted a unilateral policy to sustain prices. Until the early 1960s, it made several attempts to make other coffee producing countries to share the costs of this valorization policy. As these attempts failed, Brazil had to use its own credit to stabilize the market (SAES, 2005).

In 1962, the first International Coffee Agreement (ICA) was signed within the scope of the International Coffee Organization (ICO) "[…], a cartel of producing and consuming states from all over the globe, which attempted to influence the world price of coffee" (CLARENCE-SMITH; TOPIK, 2003, p. 3). The ICO included 42 exporting countries and 25 consumers. Since then, the world market was systematically monitored and adjusted for price maintenance policy but with interruptions due to hiked prices that ultimately caused its disruption in July 1989 (see appendix 2 and 3).

As the leading world producer, Brazil played a central role in sustaining the price maintenance policy in the international market by reducing its participation, and by becoming a residual supplier and retaining stocks; these measures led to enhanced production by the competitors. Thus, Brazilian exports were defined by the difference between the world demand, at the price level established by ICA's members, and the production of all other exporters; this mechanism was known as "umbrella policy instrument".

As a result, Brazil started losing its share in the global market. Whereas in the beginning of the century, it accounted for 80 percent of world exports, it had dropped to 40 percent in 1950's and 25 percent in 1980's. Thus, the coffee producers' strategies were conditioned by the then prevailing regulations. For instance, for ensuring price stability, the government used

the tax policy to control the production offer. The policy was strictly restricted to price and production control, providing low incentive for investments in quality or any other attribute of differentiation. Consequently, the well skilled producers who used to develop a differentiated coffee (differentiation strategy) migrated to other industries thus creating an adverse selection problem for the coffee industry. This led to the concentration of the commodity-focused (low-cost strategy) farmers in the coffee production (SAES, 2005).

In the late 1980s, in the negotiations of the ICA's economic clauses, Brazil adopted a different stance by deciding not to accept reductions in its share of the international market. In 1989, the United States led by president Bush' liberal philosophy, supported the end of the new export quota agreement. The decisions of Brazil and United States led to the collapse of the economic clauses defined by ICA in the same year. As a consequence, the government was no longer the central coordinator for coffee quantities and prices, and this paved the way for the emergence of private strategies to guarantee coffee supply and quality.

Coffee has a host of possibilities for differentiation, starting with the attributes related to the variety of the bean (for instance, Brazilian Bourbon coffee bean), and including production processes (organic, shade-grown, family-farmed, *Fairtrade*), place of production (origin, estate coffee), types of processing (natural coffee, pulped cherry and demucilated), quality of the drink (in terms of aroma, taste, body and acidity), the industrialization process (aromatization, decaffeination), type of preparation (espresso, cappuccino) and even the place where it is sold (coffee shop). This wide array of possibilities has been under the denomination of specialty coffees (GIOVANNUCCI, 2001).

Following is one definition that encompasses all these possibilities:

> The concept of specialty coffees is closely associated with the pleasure derived from the drink. Such coffees stand out for some specific attribute linked with the product, the production process or a service related to it. They differentiate due to characteristics such as superior quality of the drink, aspect of the beans, type of harvest, type of preparation, history, origin of the crops, rare varieties and limited quantities, among other aspects. They can also include parameters of differentiation related to the economic, social and environmental sustainability of the production, so as to promote more equity among the links of the supply chain. Changes in the industrial process also lead to differentiation, with the addition of substances like in the case of aromatized coffees, or their subtraction, like the decaffeinated. Traceability and service incorporation are also factors of differentiation and, therefore, of value-aggregation (ZYLBERSZTAJN; FARINA, 2001, p. 68-69).

Chart 6 - Differentiation strategy: categories of specialty coffees

	Type of Differentiation	Attributes that are required from the coffee farmers	Most important attribute required from consumers	Entry barrier drivers	How farmers can adhere to the differentiation strategy
1	Exceptional quality	To produce with quality	Company's Brand	Low entry barriers	To produce quality. Price premium is an incentive mechanism.
2	Origin (Estate Coffee)	To be located in a region that has a specificity	Origin Certification and the brand of the firm	High entry barriers (geographical constraint)	To be in the region of origin and to produce according to the certification requirements
3	Organic	To use methods that preserves soil without using pesticides or highly soluble fertilizers	Organic coffee certification	Low entry barriers	Producers must have certification. Price must compensate investment.
4	Shade-grown (eco-friendly)	To produce in the forest shade	Eco-friendly coffee certification.	High entry barrier, need access to a specific micro-region condition.	Producers must be producing in areas of forest and must be certified.
5	*Fairtrade*	To be a small producer and participate in a cooperative	*Fairtrade* coffee certification	High entry barriers (FLO defines the growth of associates' number according to demand).	Producers must adhere to *Fairtrade* rules.

Source: Based on Giovannucci (2001)

This definition aggregates several concepts. Some pertain to easily observable or testable aspects, and others to aspects that are hard to identify, such as the conditions under which the beans are produced. Thus, differentiation attributes can be associated with tangible characteristics, like the physical and sensorial features, and intangible ones, like those present in the goods of belief, whose features are not readily identifiable. Chart 6 organizes the different possibilities of differentiation strategies and provides a brief description of the attributes of the coffee demanded by consumers. It also indicates how the farmer can adhere to each differentiation strategy and overcome the entry barriers.

The present research investigates the effects of human capital and social capital consequent to changeover of the low-cost strategy (commodity production) to a differentiation strategy. The focus is particularly on the farmer's choice to produce the "exceptional quality" coffee, the

type 1 of the differentiation categories presented in Chart 6. These choice carries conceptual implications. First, the other types of coffee depend on tangible resources rather than on human and social capital (intangible resources); for instance, the existence of forest is a determinant resource for production of "shade-grown" (eco-friendly), type 4 of differentiation. One could argue that even if the tangible resource is available, the lack of human or social capital would prevent the farmer to adhere to the "shade-grown" production. However, one tends to underestimate the farmers with intangible resources who are constrained by tangible resources. Second, although it is not possible to estimate the volume of each type of differentiation owing to poor statistics, market experts consider that type 1 of differentiation is the most produced one among the specialty coffees farmers in Brazil.

3.2.3 Changes in the bundle of resources

Once the focus of the policy ceased to be on volume and price mechanisms, the consequent institutional changes in the coffee market in the late 1980s created incentives for private strategies based on quality differentiation. As this market grew, some Brazilian farmers switched their production capacity – partly or wholly - to specialty coffee, while others remained focused on commodity production.

To adopt a differentiation strategy, the farmer must invest in specific assets, such as equipment, the genetic variety of the coffee trees and the agronomic practices relevant to the type of the specialty. Moreover, the farmer assumes additional uncertainty by choosing a differentiation strategy. First, the farmer prepares for a trade-off by switching to a differentiation strategy, that is increase in the quality of the coffee beans but reduction in the volume of production. Thus, the targeted price premium of the specialty must compensate for all the incremental investments and volume reduction. Second, the specialty production is more susceptible to adverse climate than is the commodity production. The margin of profit may not be much because of the expensive agronomic treatment required by a specialty field. In addition, an adverse climate reduces the volume of production and reduces the value of the agronomic treatments for specialties, causing more losses compared to commodity production.

3.3   Theoretical reference

Considering that farmers possess equivalent physical assets and identical information about production and the market, the differences in their decisions must then be attributed to the differences in the ways they process information, their mental models and cognitive structures. While these models and structures cannot be observed directly, human capital theory can provide a window into these structures by way of exploring the relationship between formal education[7] and the ability of decision making in influencing the firms' positioning in the market. Considering that social capital may generate human capital (COLEMAN, 1988), we investigate both effects and their interactions (RAUCH *et al*, 2005; HITT *et al*, 2001) on the entrepreneurial ability of family farms in Brazilian coffee production context.

3.3.1   Who is the entrepreneur?

In his seminal work "*An essay about the nature of the overall trade*", dated by 1755, Richard Cantillon was the first to consider the entrepreneur as an important agent in the economic environment. However, it is Schumpeter who made the pioneering contribution on the entrepreneurial role in the economic theory through his work "*The theory of economic development*", dated by 1912. The Schumpeterian entrepreneur is not a common businessman, but an innovator motivated by the opportunity of profit. This entrepreneur plays a key role in creating new businesses through a process of "destructive creation".

Essentially, the entrepreneur does things not done in the ordinary course of business routine. The entrepreneur is, therefore, the *first mover* who can be present both in a small activity and in a large corporation as a single physical person or a group. The effect of innovation is to unbalance and alter the structure of the market until the exhaustion of this process occurs and the beginning of a new innovation wave appears.

The process of innovation comprises five cases:

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[7] Becker (1964) considers formal education as an investment that an individual can make to increase his human capital.

(1) The introduction of a new good – i.e., one with which consumers are not yet familiar – or a new quality of a good. (2) The introduction of a new method of production, i.e., one not yet tested by experience in the branch of manufacture concerned, which need by no means be founded upon a discovery scientifically new, and can also exist in a new way of handling a commodity commercially. (3) The opening of a new market that is a market into which the particular branch of manufacture of the country in question has not previously entered, whether or not this market has existed before. (4) The conquest of a new source of supply of raw material or half-manufactured goods, again irrespective of whether this source already exists or whether it has first to be created. (5) The carrying out of the new organization of any industry, like the creation of a monopoly position or the breaking up of a monopoly position (SCHUMPETER, 1961, p. 66).

In Kirzner's framework, the entrepreneur is interpreted as the arbitrageur who discovers the profit opportunity rooted in the discrepancy among present prices. The knowledge of where to discover this market data and how to open up the possibilities for profit opportunities is what he calls entrepreneurship "alertness". However, alertness *per se* cannot characterize the entrepreneur. In this sense, the Schumpeterian approach emphasizes that the entrepreneur requires "intuition and the leap of logic", suggesting an action outside the familiar routine in the process of innovation (LANGLOIS, 2002). However, the question turns to how to understand the cognitive heuristic of the entrepreneur. Although not directly identifiable, Knight (1964) and Schultz (1975) provided a productive framework towards the understanding of the entrepreneurs' decisions; the former highlights the entrepreneurs' behavior in conditions of uncertainty and the latter investigates the entrepreneurial ability by means of education and experience.

The uncertainty is an important factor, because business decisions made in a:

[…] world that is full of immeasurable risks ('uncertainty') will in general produce results that diverge more or less widely from the expected ones and thus lead sometimes to surplus gains and sometimes to losses, is one that common experience presses upon us very strongly. This idea may be true, but need not be added to the element of business ability and is of course, still more obviously, not quite the same as the element of risk: but we need not stress these relations (SCHUMPETER, 1961, p. 67-68).

Knight (1964) in his 1921 work "*Risk, uncertainty and profit*" explained the importance of the evaluation or judgment of an entrepreneur in decision-making under uncertain conditions. Those who venture have expectations (and not scientific knowledge) of a result to be achieved, within limits that can be more or less narrow. Penrose (1959) provided a distinction between uncertainty and risk: " 'Uncertainty' refers to the entrepreneur's confidence in his estimates or expectations; 'risk', on the other hand, refers to the possible outcomes of action, specifically to the loss that might be incurred if a given action is taken" (PENROSE, 1995, p. 56). The inclination to invest is thus guided by the opinion or belief in the real possibility of

future gains (KNIGHT, 1964). "Judgment primarily refers to the process of businessmen forming estimates of future events in situations in which there is no agreement or idea at all on probabilities of occurrence" (FOSS; KLEIN, 2004, p. 8).

At the bottom of the uncertainty problem in economics is the forward-looking character of the economic process itself. The entrepreneur faces two elements of uncertainty, which correspond to two types of foresight that must be exercised with regard to the production of goods aimed at meeting consumers' desires. The first element regards the need to estimate the end of productive operations from the beginning. It is impossible to tell accurately what their results will be in physical terms (quantities and / or qualities of goods) before the resources entered the production process. The second element of uncertainty is the one related to forecasting the future demand; this is important because the entrepreneur wants to drive the production towards the consumer's desires. Producers, then, must estimate (1) the future demand they are striving to satisfy and (2) the future results of their operations in attempting to satisfy that demand. Knight (1964) also uses the terms 'objective' and 'subjective' probability to designate risk and uncertainty, respectively. For him, the best example of uncertainty is what results from exercising judgment or the expectations regarding the future course of events, in which opinions (and not scientific knowledge) actually guide most of our conduct.

Schultz (1975) affirmed that entrepreneurship is the ability to adjust in responding to changing circumstances. This is consistent with the uncertainty conditions assumed by Knight (1964), but Schultz emphasizes that adjustments to disequilibrium are costly and time consuming. Moreover, the ability to respond to disequilibrium increases through education, training and experience. "Schultz conceives entrepreneurial ability as a form of human capital […] emphasizes the temporal aspect of entrepreneurial adjustment, particularly important for agricultural production in which temporal specificities loom large" (KLEIN; COOK 2005, p. 6).

Finally, the approaches of Knight and Schultz to entrepreneurship are complementary. With uncertainty regarding the future, the firm is able to make positive profits although it belongs to a long-term competitive equilibrium framework (term that only exists in theory). Indeed, to capture the value created on disequilibrium, the entrepreneur relies on his or her judgment about the uncertainty condition (KNIGHT, 1964) and on his or her previous experience,

education and training (SCHULTZ, 1975). Those arguments have a relevant and revealing implication for the Economic Theory and the field of Entrepreneurship.

3.3.2   **Entrepreneurship in Agribusiness and Value Creation**

Previous studies of entrepreneurship in agribusiness are related to generation of economic activity in rural areas (GLADWIN *et al*, 1989) and to regional development (REID, 1987). "These studies were mainly descriptive of the firms located in rural areas, probably were useful to policy makers, but provided few insights into the impacts of entrepreneurs on the economy" (GLADWIN *et al*, 1989, p. 1306). Thus, the analytical lenses[8] of Knight and Schultz are taken here to provide a comprehensive understanding of the entrepreneur on firms' strategy that will ultimately impact its performance and the industry.

Agribusiness provides many sources of uncertainty[9]; from the weather conditions to the way the resources are allocated. In addition, this industry is characterized by constant changes on the input and output price ratio and by great impact on government policies. All are sources of disequilibria where the entrepreneur emerges to create and appropriate value in the Knights' sense.

The entrepreneur is "someone who specializes in taking judgmental decisions about the co-ordination of scarce resources" (CASSON, 1982, p. 23). In his or her view, the concept of entrepreneurial judgment is of paramount importance; judgment is not based on the simple application of marginal rules regarding resource allocation, but on individuals, their perceptions and the information available to them or they choose to acquire. Central to this concept is the recognition that different individuals will make different decisions that will produce different outcomes because information is necessarily imperfect and costly to acquire.

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[8] We are aware that Schultz (1961) assumes complete rationality and complete information for the entrepreneur, while Knight's (1964) concern is not the individual entrepreneur but the condition of uncertainty.

[9] Although the farmer can contract insurances for protection against adverse condition of production or losses due to price fluctuations, those instruments are not always available nor are they economically viable. Moreover, those insurance contracts are designed to protect commodity production, and hence investing in differentiated production implies some uncovered uncertainty. See Lazzarini and Chaddad (2003) for a discussion on insurance mechanisms of Brazil and United States for Agribusiness credit contracting, in a comparative perspective.

Thus, the heterogeneity of judgment may be a source of value creation. This makes sense when we observe that entrepreneurs do not share their judgment with their peers (WITT, 2000). Hence, individuals differ in their ability to process information. Even though information may originate in the same source, they interpret their expected gains in different ways (CASSON, 2005). That explains the heterogeneity in the configuration of firms even within the same industrial sector. No firm is like any other, because each has its own printed logo: the judgment of its entrepreneur.

Another source of value creation is the way the entrepreneur discovers and exploits opportunities. Commenting on the Kirzner's alertness versus the systematic search, Patel and Fiet (2009) argued that the latter approach reduces environmental uncertainty, because the entrepreneur relies on his or her previous knowledge and cognitive structure to support the searching process. Instead of an accidental discovery, as a result of alertness, an entrepreneur relies on knowledge about technology, people, places and circumstances to shape the systematic search. Even though this structure may impose cognitive barriers, once prior knowledge and bounded rationality (SIMON, 1987, 1993) constrain effective search, "these same cognitive barriers shape a theory of what can be known and how to search for it" (PATEL; FIET, 2009, p. 503). Thus, the value creation from systematic approach depends on a fit between the entrepreneur's knowledge and a particular venture idea. Consistent with the systematic search approach, Hsieh *et al* (2007) suggested that entrepreneurs gain efficiency on the discovery process by establishing the appropriate governance structure (WILLIAMSON, 1985) that is aligned to the type of problem to be solved.

Finally, although different perspectives can be found on how entrepreneurs create value, there is a consistent perspective in which previous knowledge of the entrepreneur is central. Schultz (1982) argued that adaptation to changing conditions is greatly improved by the knowledge that the farmer accumulates through previous decisions. Moreover, the farmer accumulates a type of experience that is relevant to strategic decisions, because it is firm-specific (HATCH; DYER, 2004), resource-specific (KOR *et al*, 2007), task-specific (GIBBONS; WALDMAN, 2004) or soil-specific (LABAND, 1984). Considering that previous knowledge shapes the cognitive structure that searches for opportunities (PATEL; FIET, 2009), it is expected that heterogeneity of entrepreneur's judgment (WITT, 2000) and the method of processing the information (CASSON, 2005) will determine the creation of value.

3.3.3 Entrepreneurship and Human capital

Human capital represents the acquired knowledge, skills, and capabilities of a person (BECKER, 1964; SCHULTZ, 1961). According to Schultz (1975), human capital comprises the source of competences of people to perceive a given disequilibrium and to take action by reallocating resources. The underlying hypothesis is that more educated people "are more adept at critically evaluating new and reportedly improved inputs. They can distinguish more quickly between the systematic and random effects" (SCHULTZ, 1972, p. 848).

Schultz (1975) argued that human capital is determinant for Entrepreneurship. In this sense, education supplies the "allocation ability" to perceive new classes of problems and to learn ways to solve them. Schultz (1982) renamed this ability as "entrepreneurial ability", which is illustrated by analyzing farm people under traditional conditions contrasting to "modern" farm new possibilities:

> Starting with traditional agriculture and assuming that the farm and the household activities are in long-run equilibrium and that no events occurs to disturb the equilibrium, economic activities under these assumptions become routine. […] The implication is that farm people informally acquire the skills and information that are useful to them and that the economic value of schooling is small. […] As the modernization of agriculture gets under way, some aspects of farm work call for new skills, but most of them – in my view – may be learned from experience as efficiently as from schooling (SCHULTZ, 1972, p. 847)

Becker (1964) recognized a positive correlation of education and ability, as a response to scholars who criticized him for bias on the analysis of its impacts on people's earnings. To disentangle the sources of ability from education, Becker (1964) suggested the measure of individual's "intelligence" by IQ (intelligence quotient) and, additionally, the measure of "fathers in professional, semiprofessional, or managerial occupation". Therefore, family members' experience is an appropriate proxy for ability.

Hatch and Dyer (2004) provided empirical evidence to support that human capital is an important source of competitive advantage of firms because it is specific to the originating firm and, even if it migrates to competitors, the adjustments to the new environment prevent them from immediate expropriation. Moreover, human capital enhances the performance of learning by doing that leads to tacit knowledge, a portion of firm-specific human capital that is particularly inimitable (HITT *et al*, 2001).

Gibbons and Waldman (2004) alluded to Gary Becker's (1964) seminal work to argue that learning by doing processes accumulates a task-specific human capital, instead of a firm-specific one. The implication of this concept is that:

> [...] rather than human capital going unutilized when a worker switches firms (as is the case when human capital is firm-specific), human capital goes unutilized when a worker switches jobs and is assigned a new set of tasks, whether the switch entails staying within the same firm or moving across firms" (GIBBONS; WALDMAN, 2004, p. 206).

Related to this effect, Laband (1984) addressed the concern of small family farmers being forced out of the market as the value of their human capital falls "precipitously" because it is soil-specific; moreover, the human capital associated with utilizing the land in its capacity is considered a factor of production as important as the farmland itself.

In addition to environmental uncertainty (SCHUMPETER, 1961; KNIGHT, 1964) related to innovative activities, the entrepreneur might dispose of accumulated task-specific human capital (GIBBONS; WALDMAN, 2004) once a new activity replaces the current one, and at the same time, the entrepreneurs might rely on their human capital to improve their "intuition and the leap of logic" (LANGLOIS, 2002, p. 18). This is consistent with the idea of shedding non-valuable resources that lead to inertia and sub-optimal decisions (MOSAKOWSKI, 2002; TRIPSAS; GAVETTI, 2000; LEONARD-BARTON, 1992).

Sirmon and Hitt (2003) claimed that human capital in family firms is complicated because family members participates simultaneously in business and family relationships. The duality of relationship - personal and professional - creates a unique mix of positive and negative human capital. In a positive sense, human capital is promoted by the extraordinary commitment of family members (DONNELLEY, 1964) and takes advantage of intimate relationships (HORTON, 1986) to transfer deep firm-specific tacit knowledge. Moreover, the early involvement of children in family firms provides a competitive advantage over nonfamily firms because tacit knowledge is difficult to codify and transfer through direct exposure and experience (LANE; LUBATKION, 1998). In fact, people gain knowledge through formal education, learning on the job and mentoring (HITT *et al*, 2001). However, employing family members could lead to hiring suboptimal employees (DUNN, 1995). Indeed, "family firms frequently have trouble to attract and retain qualified managers due to exclusive succession, limited potential for professional growth, lack of perceived professionalism and limitations of wealth transfer" (SIRMON; HITT, 2003, p. 342).

Family firms are constrained to manage human capital by effective selection, but take advantage of tacit knowledge transfer by early involvement of children and intimate relations, education endowments (BECKER; TOMES, 1986) and lesser propensity to human capital migration - an additional mechanism to protect from rivals' expropriation (HATCH; DYER, 2004). Considering the positive mechanisms (DONNELLEY, 1964; HORTON, 1986; LANE; LUBATKIN, 1998) of the family firms in managing the knowledge relevant to shaping the entrepreneur's cognitive structure used in searching for opportunities (PATEL; FIET, 2009), their judgment capacity (WITT, 2000) and the way they process information (WITT, 2000), we formulate the first hypothesis.

> Hypothesis 1: The entrepreneurs rely on their human capital, considering their investments on education and the experience inherited from family, to enhance the probability of taking new activities that are due to a differentiation strategy.

Previous studies relate the positive effect of human capital to firm's performance (SIRMON; HITT, 2003; HITT *et al*, 2001). Schultz (1982) emphasized that adjustments to disequilibrium are costly and time consuming; therefore, entrepreneurs rely on their human capital to make adjustments more effectively. In addition, the human capital of family firms enhances the knowledge of firm-specific resources, and thus leads to better evaluation, selection and even shedding of firms' resources (SIRMON; HITT, 2003). Considering the speed of change as a reflection of firm's performance, we state:

> Hypothesis 2: The entrepreneurs rely on their human capital, considering their investments on education and the experience inherited from family, to early adopting of new activities that are due to a differentiation strategy.

3.3.4   Entrepreneurship and Social capital

It is expected that entrepreneurs build their social networks configured to take entrepreneurial action (BURT, 1992). The social capital provides access to resources embedded within, available through, and derived from the network (NAHAPIET; GHOSHAL, 1998). Adler and

Kwon (2002) argued that social capital affects resource interchange, creation of intellectual capital, learning, product innovation and entrepreneurship.

Regarding uncertainty related to an entrepreneurial action, social capital might offer some conditions or determinants in the course of action:

> […] in the strategic organization of firm activities, organizational researchers have suggested that the greater the uncertainty in the firms' business environment, the more likely the firm will rely on managerial networking relationships when entering into economic exchange relationships […] managers in emerging economies in different geographical regions devote time and effort to cultivating interpersonal relationships; the nature of those relationships may not only be different, but may have different effects on the strategic organization of firm activities (ACQAAH, 2007, p. 1238).

The family's social capital increases by connecting social structures of networks, improving shared language and narratives, and promoting relational ties based on trust, norms and obligations (SIRMON; HITT, 2003). Social capital benefits organizations in emerging economies by securing access to financial and strategic resources, and this helps in overcoming the high level of uncertainty due to the ineffective nature of market-supporting institutions in facilitating economic exchange and access to information, resources and knowledge (ACQAAH, 2007).

Considering the developments in structural sociology, Walker *et al* (1997) suggested that entrepreneurial actions take place when firms utilize the network structure to facilitate the governance of relationships and when opportunities arise from connections between unlinked firms. In addition, they contrast Coleman and Bourdieu's perspective with Burt's perspective. The former perspective holds that increasing social capital in a period should enable more relationships within the networks; the latter assumes that increasing social capital should enable trust by selection of partners and that it has no effect on the number of new relationships. Burts's perspective places more emphasis on the strategic action of entrepreneurs than does Coleman and Bourdieu's perspective.

In the course of action, the entrepreneur makes decisions under uncertainty conditions (KNIGHT, 1964). To prevent from expropriation from specific investments (KLEIN *et al*, 1978), the entrepreneur has incentive to establish agreements or contracts to protect against ex-post opportunism (WILLIAMSON, 1985). However:

> Whereas the economics literature has focused on how formal contracts and the allocation of control rights between parties in an exchange can minimize transactional risks under conditions of uncertainty and information asymmetry, the sociological literature on the subject has emphasized the implications of these conditions for the selection of exchange partners. Sociologists observe that when the circumstances surrounding a transaction preclude an actor from entering a relationship without the risk that his partner will behave opportunistically, he often chooses to conduct business only with exchange partners he knows (SHANE; STUART, 2002, p. 156).

Considering the positive mechanisms (SIRMON; HITT, 2003) that family firms have for managing social capital that is relevant to provide access to resources (NAHAPIET; GHOSHAL, 1998), to promote intellectual capital and learning (ADLER; KWON, 2002), to help in overcoming uncertainty due to economic exchange and to access to information (ACQAAH, 2007), we formulate the third hypothesis.

> Hypothesis 3: The entrepreneurs rely on their social capital, considering the number of people they can hire with family ties and the years of commercial relationship with buyer, to enhance the probability of taking new activities that are due to a differentiation strategy.

Harrington (2001) confirmed the outcome of previous studies that relate the benefits of social capital to firm's performance. His results support the idea that network ties at the individual level have a powerful impact on organizational performance. Specifically, the number of networks of an individual enhances the organization's financial performance both directly and indirectly, by increasing the task orientation (wiliness to sacrifice some degree of social cohesion for decision quality) and group heterogeneity (the larger the information pool, the better the decision making process). Ding and Abetti (2003) concluded that Chinese entrepreneurs relied on unique social capital, extended in developed countries, to develop the hardware industry, which contributed to the economic development of Taiwan. Results are consistent with those of previous studies which suggested that embedded social and economic context of specific geographical regions positively influence the formation and performance of new business. Considering the speed of change as a reflection of firm's performance, we state:

> Hypothesis 4: The entrepreneurs rely on their social capital, considering the number of people they can hire with family ties and the years of commercial relationship with buyer, to early adopting new activities that are due to a differentiation strategy.

Previous studies indicated the interaction effects of human capital and social capital (RAUCH *et al*, 2005; HITT *et al*, 2001). In view of the entrepreneurial discovery, Patel and Fiet (2009) did not distinguish between the sources of human and social capitals the way the cognitive structure of the entrepreneur is shaped or constrained to do. In this case, knowledge on technology or on people is considered the same.

Coleman (1990) addressed the importance of social capital interaction to human capital, considering the family influence to next generations. Before the emergence of corporations, family members usually worked close to each other to generate the family's earnings, for instance, in the farming activity. Within this social structure it was possible for children to learn with their parents though training and observation. However, when adults turn to work into factories and corporation offices, most of the human capital formation of the next generation depends on formal education. Therefore, the pattern of human capital formation strongly depends on social capital dynamics of closure and stability. In addition, Granovetter (1983) suggested a positive interaction of social capital[10] and education, on which well-educated people take more advantage of social capital to increase income than poorly educated people. Considering this interaction effect, we state the hypotheses:

> Hypothesis 5: The entrepreneur's human capital and social capital interact with each other to enhance the probability of taking new activities that are due to a differentiation strategy.

Considering the possible effects of firm's performance, and considering speed of change as a reflection of performance:

> Hypothesis 6: The entrepreneur's human capital and social capital interact with each other to early adopting of new activities that are due to a differentiation strategy.

Moreover, the different constituents of human and social capitals were tested for their mutual interaction in an exploratory sense.

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[10] To be precise, Granovetter (1983) investigated the effects of weak ties in contrast to strong ties. To distinguish these two perspectives on social capital, we quote: "Two scientists were said to have a weak tie if one reported having talked with the other about current work, but the other made no such report. Where both made this statement about the other the tie was defined as strong" (GRANOVETTER, 1983, p. 217). Weak ties connect individuals who are significantly different from one another, which provide access to information and resources beyond those available in the individual's social circle.

3.4   Methods

To test the hypothesis presented in this paper, three appropriate methods were chosen for the following reasons. One of the dependent variable is a binary variable codified (1) for entrepreneurs who switched strategies or (0) for entrepreneurs who focused on low-cost strategy. The Probit model is appropriate to estimate binary response. The parameters β are estimated by maximum likelihood. The Probit function is represented by Φ, the cumulative distribution function:

Pr (differentiation strategy) = Φ (β_0 + β_1 Education + β_2 Experience + β_3 Social connections + β_4 Relationship duration + β_5 Farm Size + β_6 Farm altitude + β_7 City Size + β_8 City per capita revenue + β_9 Distance + β_{10} Age of the owner + β_{11} Diversification)

The other dependent variable is the time length until strategy change. Time length until strategy change measures the number of years that the entrepreneur took to pursue a differentiation strategy, considering the institutional change in 1989 as the reference year. This measure is left-censored because farmers who chose the low-cost strategy will present value zero for the dependent variable, in contrast to any positive value for the ones who adopted a differentiation strategy. For this reason, the appropriate method of estimation is the Tobit regression.

Time Length = β_0 + β_1 Education + β_2 Experience + β_3 Social connections + β_4 Relationship duration + β_5 Farm Size + β_6 Farm altitude + β_7 City Size + β_8 City per capita revenue + β_9 Distance + β_{10} Age of the owner + β_{11} Diversification + ε

In addition to the probability estimation by Probit, we applied a semi-parametric Cox model. While Probit and Tobit estimations are widely applied in strategy and entrepreneurship literature, more details of the Cox semi-parametric models are provided here. This method is appropriate to evaluate the time spent until the occurrence of an event. In this study, the event is the change of the strategy, specifically from low-cost strategy to differentiation strategy. The Cox model estimates the probability of changing to a differentiation strategy, conditioned

by the time that the entrepreneur spent in low-cost strategy. The data were organized in a survival set for Cox model estimation. The problem to analyze survival data, using ordinary-least squares, is the assumption of normal distribution of the residuals, *ej*. The assumed normality of time to an event is unreasonable; for instance, one could not assume that the "instantaneous" risk of an event occurring is constant over time. The Cox (1972) semi-parametric survival analysis makes no assumption about the distribution of failure times, but is parametric to the occurrence of a given event. Semi-parametric analysis is a combination of separate binary-outcome analysis, on per failure time. The survival function S(t), is the reverse cumulative distribution function of T (nonnegative random variable):

$$S(t) = 1 - F(t) = \Pr(T > t)$$

The survivor function reports the probability of surviving beyond time *t*, or, in other words, the probability that there is no failure event prior to *t*. The function is equal to 1 at t=0 and decreases toward 0 as *t* goes to infinity.

> When we assign a role to time, we are doing that the proxy other effects that we do not fully understand, cannot measure, are too expensive to measure, or are unknown. […] There are two properties to the definition of *t*: 1) ensuring that whenever two subjects have equal *t* values, the risk they face would be the same if they also shared the same x values; 2) deciding which particular value of *t* should be labeled *t* = 0, denoting the onset of risk.[11] (CLEVES *et al*, 2008, p. 25).

In survival data, censoring is defined when the failure event occurs and the subject is not under observation. The Cox (1972) proportional hazards regression model asserts that the hazard rate for the *j*th subject in the data is:

$$H(t|x_j) = h_0(t) \exp(x_j \beta_x)$$

Where β_x are the regression coefficients to be estimated from the data. The baseline hazard $h_0(t)$ is given no particular parameterization and can be left un-estimated.

> The model makes no assumptions about the shape of the hazard over time – it could be constant, increasing, decreasing, increasing and then decreasing, decreasing and then increasing, […] whatever the general shape, it is the same for everyone. (CLEVES *et al*, 2008, p. 129).

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[11] Property 2 matters only for parametric models. In semi-parametric modeling, the results are determined by the matching and ordering of failure times; time 0 (*t=0*) has no special significance.

Estimation is possible by likelihood calculations.

$$H(t|x_1, x_2,\ldots, x_k) = h_0\,(t)\,\exp\,(\beta_1 x_1, \beta_2 x_2,\ldots, \beta_k x_k)$$

Considering the time spent until the strategy-change, a Tobit regression was applied. This method is appropriate because the data is left-censored. Only positive values were observed for the farmers who changed the low-cost strategy for a differentiation one; however, farmers who remain on low-cost strategy will present zero values. In this case, the dependent variable is a continuous measure of year, taken from 1989 up to 2007.

Considering the interaction effects addressed in Hypothesis 5 and 6, interaction terms were generated by multiplying one explanatory variable with another. The construction of interaction entails coding one end of a range of values as zero; this has the effect of identifying the cases that are non-zero in all the component variables from which the interaction is constructed (FOULGER, 1979). For instance, the *Education* dummy variable was multiplied by *Experience* dummy variable, and the non-zero cases are the ones on which the entrepreneur presents both college degree (education=1) and family background (experience=1).

3.5   Data

The data used here was obtained by interviewing 409 coffee farmers by phone, following a structured questionnaire, from July to November 2007. The sample of farmers was provided by coffee processing industries and cooperatives. Analysis of the data collected from all the farmers indicated that access to unique resources or natural conditions of some regions might influence (or even determine) the strategy choice. For instance, farmers in the State of Espirito Santo cannot change to differentiation strategy because of the low altitude of the region. Another competing explanation for the heterogeneity of strategies is the peculiar social structure of a specific region. This is the case of *Fair trade coffee* in the city of Machado and in the State of Ceará. All these cases were excluded from the sample studied for reasons mentioned above. The sample was reduced to 283 farmers who are in equivalent natural conditions and competitive environment, a context that validates the test of the hypotheses presented here.

Chart 7 - Description and measures of all variables

Dependent Variable:	
Strategy switch (Probit Model)	Strategy switch is a dummy variable codified (1) for entrepreneurs that switched strategies or (0) for entrepreneurs that focused on low-cost strategy.
Time length until strategy-change (Cox Model and Tobit Model)	Time length until strategy-change is the number of years that the entrepreneur took to adopt a differentiation strategy, considering the institutional change in1989 as the reference year.

Explanatory Variables: measures for human capital	
Education	Education is a dummy variable codified (1) for owners with college degree or (0) for owners that didn't complete college
Experience	The measure is a dummy variable that equals (1) if the farmer is the second or third generation on coffee production or (0) if the farmer is the founder of the coffee business.
Explanatory Variables: measures for social capital	
Social connections	Size of labor market composed of people hired under family relationship with the farmer in each county (measured as number of workers). Source: IBGE – Brazilian Institution of Geography and Statistics – 2006 Agricultural Census.
Relationship duration	Relationship duration is a dummy variable codified (1) for farmers having enduring relationship with the same coffee buyer for more than half of the existence time of the business, or (0) if not.

Control Variables	
Farm Size	Farm Size is measured by land dimensions. All data was standardized in hectares (10,000 square meters).
Farm Altitude	Altitude is measured in terms of thousand meters (for rescaling purposes), taking the sea level as the zero reference. The average altitude of the county is considered the farm altitude. Source: IBGE – Brazilian Institution of Geography and Statistics.
City Size	City size is measured in terms of population, based on Brazilian Census. Source: IBGE – Brazilian Institution of Geography and Statistics.
City Per Capita Revenue	City per capita revenue is measured by dividing the total revenue of the city with the number of population, based on Brazilian Census. Source: IBGE – Brazilian Institution of Geography and Statistics.
Distance	The distance between the owner's home and the farm is measured in kilometers (each value represents 1 kilometers, for rescaling purposes). In case of more than one location for home or farm, the following criteria were applied: (i) the home where the owner expends more time and (ii) farm where the owner discharges administrative duties.
Age of the owner	Measured in years.
Diversification	Diversification is a dummy variable codified (1) for farmers who diversified from coffee production or (0) for farmers who are focused only on coffee production

After analyzing the data collected in November of 2007, the farmers were re-interviewed, from April to May 2009, to collect data on the year of strategy-change, and further information. Not all the farmers could be re-interviewed, and some were no longer in the coffee business. The sample was reduced to 177 farmers and, considering the missing

variables in the model; it was further narrowed down to 135. Chart 7 presents the data together with the details of explanatory and control variables.

Education is a dummy variable, coded 1 if the farmer has the college degree. This measure is consistent with that of previous scholars who measured the school degree as proxy for human capital (RAUCH *et al*, 2005; HITT *et al*, 2001). *Experience* from family background is a dummy variable, which is coded 1 if the current farmer has a previous family generation member in the coffee business. Other scholars measure the founder's experience on start-up (SHANE; STUART, 2002) and manager's experience in the industry (HITT *et al*, 2001) as a proxy for human capital.

Relationship duration is a dummy variable, which is coded 1 if the farmer has an enduring commercial relationship with the same coffee buyer for more than half the existence time of the business. This is a proxy for Burts' perspective that increasing social capital should enable trust by selection of partners and that it has no effect on the number of new relationships. *Social connections* are measured by the size of labor market composed of people hired under family relationship with the farmer in each county. It is considered a region-based proxy for social capital, following the idea that "some firms occupy positions that are embedded in regions filled with relationships, indicating a high level of available social capital, but other positions are located in regions with few relationships, suggesting a low social capital" (WALKER *et al*, 1997, p. 111).

The summary statistics and correlations of all variables are showed in Table 2. With regard to explanatory variables, *Relationship duration* presented positive correlation ($p<0.05$) with *Strategy switch* and a strongly negative correlation ($p<0.01$) with *Time length; Social connections* also presented a strongly negative correlation ($p<0.01$) with *Time length*.

Table 2 – Summary statistics and correlations

	Variable	Mean	Std. Dev.	Min.	Max.	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Strategy switch	16.039	3.742	1	18	1.000												
2	Time length	3.153	5.428	0	17	-0.561** 0.000	1.000											
3	Education	0.482	0.501	0	1	-0.089 0.237	0.159* 0.034	1.000										
4	Experience	0.460	0.499	0	1	-0.000 0.992	-0.038 0.609	-0.048 0.524	1.000									
5	Social connections	125.783	27.029	1.012	971	0.114 0.132	-0.212** 0.004	-0.045 0.554	0.071 0.349	1.000								
6	Relationship duration	0.573	0.495	0	1	0.160* 0.033	-0.221** 0.003	0.005 0.946	0.081 0.284	0.064 0.3944	1.000							
7	Farm size	418.454	1540.233	0	15000	-0.045 0.586	-0.010 0.906	0.171* 0.040	-0.067 0.423	-0.054 0.522	0.010 0.898	1.000						
8	Farm altitude	848.2	200.119	209	1184	0.077 0.318	-0.174* 0.022	-0.188* 0.014	0.142 0.063	0.097 0.205	0.217** 0.004	-0.238** 0.005	1.000					
9	City size	35.183	60.507	1.492	319.094	-0.032 0.669	-0.049 0.513	0.176* 0.019	-0.012 0.866	-0.123 0.103	-0.096 0.202	0.000 0.999	-0.191* 0.012	1.000				
10	City per capita	9.606	6.102	2.675	43.145	-0.004 0.950	-0.075 0.318	-0.051 0.4951	-0.069 0.361	0.144 0.056	-0.036 0.629	-0.036 0.665	-0.006 0.931	0.069 0.358	1.000			
11	Distance	57.657	17.250	0	1400	-0.148 0.050	0.161* 0.033	0.200* 0.007	-0.038 0.614	-0.054 0.473	-0.058 0.442	0.359** 0.000	-0.130 0.092	-0.037 0.626	0.009 0.906	1.000		
12	Age of the owner	51.181	12.826	24	83	0.035 0.642	0.118 0.116	-0.126 0.094	-0.088 0.245	0.102 0.179	-0.175* 0.019	-0.027 0.745	-0.066 0.386	0.046 0.541	0.162* 0.031	0.028 0.711	1.000	
13	Diversification	0.670	0.471	0	1	0.023 0.755	0.115 0.125	0.266** 0.000	-0.080 0.290	-0.030 0.690	0.031 0.679	-0.015 0.855	-0.162* 0.034	0.027 0.719	0.078 0.300	0.125 0.096	0.007 0.925	1.000

**p<0.01, *p<0.05

3.6   Results

Table 3 organizes the results of Probit, Cox and Tobit estimations. Models 1 and 2 estimated the Probit Model, which is the probability to switch strategies. Models 3 and 4 estimated the Cox Model, which is the probability conditioned by the time spent until strategy-change. The Cox Model conditioned the probability estimation by the time spent until the strategy-change, taking the institutional change in 1989 as the reference date. This Model is appropriate for discriminating the probabilities between one farmer who took a few years after 1989 to adopt the differentiation strategy, and the other farmer who took many years for the same. Models 5 and 6 estimated the Tobit Model, the inverse of speed of strategy change. Models 1, 3 and 5 were estimated considering only the control variables for the sake of comparison. The introduction of explanatory variables in Model 2 increased the Pseudo R^2 from 0.048 to 0.129. Between Models 6 and 5, the Pseudo R^2 increased from 0.017 to 0.048.

Considering the control variables, *City size* was weakly significant ($p<0.10$) in Model 2. This indicates that the larger the city, the lesser is its adoption to differentiation strategy. The *Age of the owner* was weakly significant ($p<0.10$) in Models 2 and 6, but strongly significant ($p<0.001$) in Model 4. This suggests that the probability of changing strategy is positively related to farmer's age and that older farmer spends more time before adopting a differentiation strategy. The size of the farm was not statistically significant. *Farm altitude* was a proxy to control for natural resources or conditions, but is not significant. No significance was noticed for controls of *City size* (except in Model 2) and on *City per capita revenue*. *Distance* between farm site and farmer's home also was not significant. *Diversification* controls for portfolio-risk minimizing effects on strategy change or on speed of change, but it is not statistically significant.

Table 3 – Probit, Cox and Tobit results

Variables	PROBIT Probability to switch strategies		COX Conditional probability to switch strategies		TOBIT Speed of strategy change (inverse)	
	(1) control	(2) all variables	(3) control	(4) all variables	(5) control	(6) all variables
	ß (std. dev)	ß (std. dev)	ß (std. dev)	ß (std. dev)	ß (std. dev)	ß (std. dev)
Human Capital						
Education		0.568**		0.713**		5.617*
		(0.274)		(0.274)		(3.210)
Experience		-0.012		-0.161***		1.213
		(0.248)		(0.044)		(2.884)
Social Capital						
Social connections		-1.106**		-1.598***		-15.984**
		(0.544)		(0.223)		(6.831)
Relationship duration		-0.506**		-0.787***		-5.980**
		(0.250)		(0.119)		(2.945)
Controls						
Farm size	-0.044	-0.049	-0.039	-0.035	-0.919	-0.800
	(0.088)	(0.089)	(0.081)	(0.068)	(1.261)	(1.132)
Farm altitude	-0.478	-0.038	-0.499	0.134	-7.899	-2.031
	(0.614)	(0.655)	(0.378)	(0.454)	(8.142)	(7.768)
City size	-2.294	-4.056†	-2.433	-4.572	-27.460	-44.633
	(2.209)	(2.417)	(4.486)	(3.830)	(28.576)	(27.683)
City per capita	-0.023	-0.015	-0.024	-0.017	-0.255	-0.108
	(0.024)	(0.024)	(0.017)	(0.016)	(0.304)	(0.274)
Distance	1.032	0.718	1.190**	0.718	12.436	8.674
	(0.668)	(0.672)	(0.543)	(0.711)	(7.799)	(7.103)
Age of the owner	0.013	0.019†	0.137***	0.020***	0.152	0.195†
	(0.009)	(0.010)	(0.003)	(0.002)	(0.116)	(0.114)
Diversification	0.094	-0.009	0.006	-0.238	0.596	-0.508
	(0.263)	(0.282)	(0.316)	(0.274)	(3.383)	(3.283)
Constant	-0.594	-1.090			-5.089	-9.853
	(0.776)	(0.856)			(10.137)	(10.118)
Observations	135	135	135	135	135	135
Prob> χ^2	p>0.10	p<0.05	p<0.001	p<0.001	p>0.10	p<0.05
Failures			41	41		
Pseudo R^2	0.048	0.129			0.017	0.048

*** $p<0.001$, ** $p<0.01$, * $p< 0.05$, † $p<0.10$

Considering human capital analysis, only *Education* was significant in all the three models. *Education* increased the probability of adopting differentiation strategy both in Probit Model ($p<0.01$) and Cox Model ($p<0.001$). Comparing both these models, it was interpreted that

higher education level increases the probability of changing strategy and that farmer's higher education, conditioned by the time that he or she spent on commodity strategy, also increases the chance of adopting a differentiation strategy. Thus, considering *Education* as a proxy for human capital, we found support to Hypothesis 1: The entrepreneurs rely on their human capital, considering their investments on education (…), to enhance the probability of adopting new activities that are due to a differentiation strategy. However, *Experience* from family background, the other variable of human capital, was not significant in the Probit Model that explains probability of strategy change, but was strongly significant in the Cox Model ($p<0.001$). The negative coefficient for *Experience* contradicts Hypothesis 1.

Education was weakly significant to explain speed of change in the Tobit Model ($p<0.05$). The positive coefficient for *Education* indicates that farmers' higher education level contributes to a late change of strategy. *Experience* from family background was not statistically significant. These findings contradict Hypothesis 2: The entrepreneurs rely on their human capital, considering their investments on education and the experience inherited from family, to early adopting of new activities that are due to a differentiation strategy.

All arguments on social capital were significant in the models. *Social connections* and *Relationship duration* decreased the probability of adopting a differentiation strategy both in Probit Model ($p<0.01$) and Cox Model ($p<0.001$), and this completely contradicts Hypothesis 3: The entrepreneurs relys on their social capital, considering the number of people they can hire with family ties and the years of commercial relationship with buyer, to enhance the probability of adopting new activities that are due to a differentiation strategy. *Social connections* measured the size of labor market composed of people hired under family relationship with the farmers in each county. *Relationship duration* was a proxy for enduring relationship between the farmer and the coffee buyer. The probability of adopting a differentiation strategy decreased with increase in the size of the social capital. This implies that social embedded relationships contribute to inertia.

Results of the Tobit Models indicated that Social capital increases the speed of strategy change ($p<0.01$). This fully supports Hypothesis 4: The entrepreneurs rely on their social capital, considering the number of people they can hire with family ties and the years of commercial relationship with buyer, to early adopting of new activities that are due to a differentiation strategy.

Table 4 – Interaction terms on Probit, Cox and Tobit Models

Variables	PROBIT Probability to switch strategies	COX Conditional probability to switch strategies			TOBIT Speed of strategy change (inverse)
	(a)	(b)	(c)	(d)	(e)
	ß (std. dev)	ß (std. dev)	ß (std. dev)	ß (std. dev)	ß (std. dev)
Interaction terms					
Soc. connect. & Relation. duration	1,390***	11.763***			
	(0.528)	(0.974)			
Educ. & Soc. connect.			2.164***		
			(0.412)		
Education & Relation. duration				1.911***	17.013**
				(0.349)	(6.028)
Human Capital					
Education	0.577*	0.664**	0.610*	0.739**	5.333[†]
	(0.279)	(0.259)	(0.274)	(0.283)	(3.094)
Experience	-0.798*	-0.174**	-0.194***	-1.062***	-8.150[†]
	(0.395)	(0.067)	(0.050)	(0.287)	(4.342)
Social Capital					
Social connections	-1,187*	-11.984***	-2.883***	-1.694***	-16.125*
	(0.554)	(0.931)	(0.347)	(0.121)	(6.606)
Relation. duration	-1.098***	-1.017***	-0.814***	-1.578***	-12.963***
	(0.343)	(0.121)	(0.121)	(0.138)	(3.933)
Controls					
Farm size	-0.029	-0.028	0.034	-0.015	-0.512
	(0.089)	(0.070)	(0.069)	(0.067)	(1.079)
Farm altitude	-0.294	0.167	0.183	-0.348	-5.133
	(0.675)	(0.438)	(0.458)	(0.399)	(7.615)
City size	-4.537[†]	-4.652	-4.399	-5.201	-48.100[†]
	(2,674)	(3.813)	(3.777)	(3.365)	(28.827)
City per capita	-0.014	-0.021	-0.023	-0.014	-0.100
	(0.026)	(0.017)	(0.019)	(0.025)	(0.279)
Distance	0.345	0.720	0.756	0.200	4.273
	(0.684)	(0.689)	(0.712)	(0.766)	(6.880)
Age of the owner	0.018[†]	0.021***	0.022***	0.015***	0.186[†]
	(0.010)	(0.004)	(0.003)	(0.002)	(0.100)
Diversification	-0.049	-0.337	-0.251	-0.358	-0.711
	(0.289)	(0.252)	(0.259)	(0.291)	(3.174)
Constant	-0.525				-2.736
	(0.897)				(9.979)
Observations	135	135	135	135	135
Prob> χ^2	p<0.01	p<0.001	p<0.001	p<0.001	p<0.01
Failures		41	41	41	
Pseudo R^2	0.172				0.069

*** $p<0.001$, ** $p<0.01$, * $p< 0.05$, [†] $p<0.10$

Table 4 organizes the estimations when interaction terms were introduced into the models. The interaction term captured the existence of an amplifying effect when one explanatory variable influences another in estimating the output. For instance, in the Probit model, a positive and significant interaction means that two variables interact with each other to increase the probability of an event more than the simple sum of the two separate probabilities. Each variable that constitutes an interaction term is known as constitutive terms. For the sake of consistency, the constitutive terms were maintained in all the models[12] and only those models that resulted in significant interaction terms and significant constitutive terms were reported (BRAMBOR *et al*, 2006).

In the Cox Model, *Social connection & Relationship duration* reported a positive coefficient ($p<0.01$) in contrast to the negative coefficients reported by *Social connections* ($p<0.05$) and by *Relationship duration* ($p<0.001$). The signal of the constitutive terms was consistent with that of the original model; both decreased the probability of adopting a differentiation strategy. However, when both social capital arguments were present, they interact with each other and their effect increased the probability of adopting a differentiation strategy.

In the empirical context, a coffee farmer located in a county where people are hired under family relationships will be less willing to invest in differentiated coffee. The same effect is expected for a farmer who maintains long commercial relationships with the coffee buyer. However, the interaction of family labor market and time of commercial relationship tend to increase the probability of changing the commodity for a differentiated coffee.

Education & Social connections gave a positive coefficient ($p<0.001$) in the Cox Model. Compared to the original model, *Education* maintained the positive coefficient ($p<0.05$) and *Social connections* the negative coefficient ($p<0.001$). Although *Social connections* by itself decreased the probability of changing strategy, in conjunction with higher education it turned to increase the probability of adopting differentiation strategy. Considering *Education* as a proxy for Human capital and *Social connections* as a proxy for Social capital, Hypothesis 5 was supported: The entrepreneur's human capital and social capital interacts with each other

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[12] Although the statistics literature is clear that all constitutive terms should be included, scholars may fall for the temptation to exclude one or more of them to avoid the increase on *multicollinearity* in the models. However, this argument is overstated once the analyst is interested in the marginal effect of one variable X on Y. A high *multicollinearity* simply means that there is not enough information in the data to estimate the model parameters accurately and the standard errors reflect this. See Brambor *et al* (2006, p. 71) for a demonstration that ameliorates the concerns on *multicollinearity*.

to enhance the probability of adopting new activities that are due to a differentiation strategy. The results suggested that *Education* dominates the effect of *Social connections*. One interpretation could be that a farmer located in an area with large family labor market may compensate for the low probability of adopting a differentiation coffee by investing in education.

Experience & Relationship duration yielded a positive coefficient in the Probit Model ($p<0.01$), Cox Model ($p<0.001$) and Tobit Model ($p<0.05$). The constitutive terms, and *Experience* and *Relationship duration* were statistically significant in all the three models. Although the constitutive terms indicated reduction in the probability of changing strategy in Probit and Cox Models, the occurrence of both increased the probability of adopting a differentiation strategy; this finding corroborated and reinforced Hypothesis 5.

The positive interaction term in the Tobit Models suggested that occurrence of *Experience & Relationship duration* decreases the speed of strategy-change (inverse of the dependent variable), although each of them individually contributes to the inverse. Negative coefficient for *Relationship duration* was consistent with that of the original model and indicated an increase in the speed of strategy-change. The same effect is found for *Experience*, even though it was weakly significant in the interaction model ($p<0.10$) and not significant in the original model. This finding contradicted Hypothesis 6.

3.7   Limitations

The Brazilian coffee production sector was appropriate for this study, because we can identify the starting time of differentiation strategies, which is associated with an institutional change in 1989, but limits the generalizations of the findings. Nonetheless, it is worthwhile to continue the debate and contribute additional inputs to the extant studies on human capital, social capital and entrepreneurship on biotechnology industry (WALKER *et al*, 1997), service industry (HITT *et al*, 2001) and manufacture industry (HATCH; DYER, 2004).

For this study, only the broad definition of family farms (FLÖREN, 2002) was followed, but a sensitive analysis of the definition could provide more details about how human capital and social capital affect the different types of family farms. Villalonga and Amit (2006) rightly

showed how the governance of family firms differs according to the definition followed. The limited size of the database here precludes evaluation of a sensitive analysis owing to the small size of the resulting sub-groups.

To ameliorate the context effects in the models, it was added information on city size and the city per capita revenue. However, these variables had little control on externalities effects and knowledge spillovers. For instance, well-educated farmers provide an example to be copied by those without education, an effect that contributes to diffusion of innovations (KNIGHT *et al*, 2003). In addition, Alvarez and Barney (2005) suggested that entrepreneurial opportunities tend to be greater in contexts characterized by high degree of uncertainty; Audretsch and Keilback (2007) developed a theory that spatial agglomerations facilitate the knowledge spillover owing to new ventures start-ups.

The measures adopted here for human capital and social capital had their limitations. Although the entrepreneur's level of formal education could be identified, the quality of the school could not be assessed. In this context, the observation of D'Aveni (1989), namely that people graduating from prestige universities have access to privileged networks, besides high quality of education, is relevant. The measures adopted here for social capital were incomplete at best. As a consequence, there is little to add to the debate of entrepreneurs who create value by exploring Burt's (1992) structural holes or who access value through reproduction of a pattern within a network, following the perspective of Bourdieu and Coleman (1990). This research also struggles to inform on the "strength of weak ties" proposed by Granovetter (1983) owing to the proxy limitations to analyze the social structures of the coffee farmer. Moreover, these measures on social capital had limitations to capture the effects of cooperatives[13], assistance bureaus and other agents that may constitute the entrepreneur's social relationships. While acknowledging these limitations, it was still considered not an easy task to disentangle the sources of human capital and social capital for evaluating the isolated and interacted effects on entrepreneurship.

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[13] Important remark: The coffee producers were accessed through cooperatives and associations. Measures were tried on number of cooperatives and associations related to the coffee farmer on the size of cooperatives and associations, and on the proxies for the relevance of these organizations; however, none of them were promising.

3.8   Final remarks

The findings presented here corroborated that human capital (COLEMAN, 1988; HITT *et al*, 2001; HATCH; DYER, 2004) contributes to engagement in new activities and entrepreneurial actions. Besides, it was understood that a well-educated entrepreneur has better "intuition and the leap of logic" (LANGLOIS, 2002, p. 18) than the less educated entrepreneur. Moreover, the highly educated entrepreneurs will be confident on their knowledge to handle uncertainties associated with entrepreneurial action (SCHULTZ, 1982). Besides, the environmental uncertainty associated with innovative activities (SCHUMPETER, 1961; KNIGHT, 1964), exposes the highly educated entrepreneur to additional threats sourced by internal factors, such as the decision to dispose task-specific human capital (GIBOONS; WALDMAN, 2004) and other resources that become non-valuable. In this sense, the highly educated entrepreneurs make necessary adjustments as dictate by changes in the economic environment and adjust their bundle of resources (BARNEY, 1986) to prevent losses from inertia and sub-optimal decisions (MOSAKOWSKI, 2002; TRIPSAS; GAVETTI, 2000; LEONARD-BARTON, 1992).

Although *Experience* from family background was expected to become a valuable human capital resource in taking entrepreneurial action, the findings point to the contrary. Considering the probability conditioned by the time spent before changing strategy, *Experience* reduced the probability of taking new activities and pursuing a differentiation strategy. This introduced an additional challenge to the highly educated entrepreneur to release family's resources that become non-valuable and thus contribute to inertia (SIRMON; HITT, 2003). This also suggests that one productive way of taking care of next generations by families is through education endowment (BECKER, 1986), rather than any source of experience. The results of interaction models between *Education* and *Experience* were not significant (unreported results).

The measures on social capital, besides its limitations, were consistent with each other. Both *Social connections* and *Relationship duration* indicated that entrepreneurs with high social connections had fewer propensities to engage in innovative activities, and thus in pursuing a differentiation strategy. However, both contribute to an early adoption of innovation. These isolated findings were puzzling to interpret. Therefore, the interaction models were analyzed to gain some clarification. Social capital and human capital are interdependent, although one

is methodologically constrained to corroborate Coleman's (1988) causal argument that social capital enhances human capital. The interaction models indicated that entrepreneurs with high education and family ties enhance the probability of pursuing a differentiation strategy. *Family ties* in isolation decreased the probability of engaging in innovative actions, but *Education* dominated this effect. To some extent, the effect was the same as that of *Experience* from family background dominating the isolated negative effect of *Relationship duration*; the interaction of these proxies for human capital and social capital enhanced the probability of pursuing a differentiation strategy.

Thus, entrepreneurs with high social capital should take advantage of adopting innovation activities early and invest in human capital to enhance the probability of engaging themselves effectively in entrepreneurial action. Other competing explanations for entrepreneurial action were controlled for in the models presented here; tangible resources that influence the strategy decision (BARNEY, 1986), natural conditions (farm altitude proxy), portfolio diversification (diversification proxy) and some social dense effects.

Still, the debate on economics literature and sociology literature is open for competing explanations for entrepreneurship. There are different perspectives on the value of capital (human and social); sociologists regard capital as a stock that is accumulated over time while economists tend to evaluate the benefits from its future use (CASSON; GIUSTA, 2007). The findings supported the idea that entrepreneurs with high social connections are early adopters of innovative action. Does this privilege of information flow from social relationships (BURT, 1992; NAHAPIET; GHOSHAL, 1998; ADLER; KWON, 2002) or is it a consequence of avoiding contractual costs, once the entrepreneur conducts business only with the exchange partners he or she knows (SHANE; STUART, 2002)? The speed of engaging in innovation increases with the speed at which the entrepreneur overcomes the asymmetries of information and transaction costs. To handle uncertainty, should the entrepreneur rely more on contract or on social capital?

The existence of environment-related uncertainty (SCHUMPETER, 1961; KNIGHT; 1964) in the course of action (SCHULTZ, 1982) is central to Entrepreneurship literature. It is claimed here that human capital provides the heterogeneity of judgment (WITT, 2000), and the cognition to process information (CASSON, 2005) and search for opportunities (PATEL; FIET, 2009) that create value for the entrepreneur. Moreover, among the resources provided

by the family to the entrepreneur, a valuable one is the education endowment (BECKER; TOMES, 1986).

4   ENTREPRENEURSHIP AND STRATEGIC MANAGEMENT

4.1   Introduction

The literature linking transaction-cost economics, resource-based view and strategic positing has been growing over the last years (NICKERSON *et al*, 2001; GHOSH; JOHN, 1999). These studies focus on the tangible resources and the associated level of specificity (WILLIAMSON, 1985) that they represent for a certain transaction, by assuming homogeneous management ability, skills, and experience for all firms. However, many scholars consider the fact that human capital (BECKER, 1964; SCHULTZ, 1961, 1982) and social capital (BURT, 1992; COLEMAN, 1988) are positively associated to firms' performance (HITT *et al*, 2001; HARRINGTON, 2001) and competitive advantage (DING; ABETTI, 2003; HATCH; DYER, 2004; ACQAAH, 2007). This chapter focuses on the intangible resources of the firm, such as human capital and social capital, to contribute to the debate of integrating the triad decisions of governance, resource, and strategy.

Although we observed that Lovas and Ghoshal (2000) reported human capital and social capital as resources that will define how the firms plan the strategic initiatives, little has been examined about its implications to transaction-cost economics. In addition, Masten *et al* (1989) indicated that the relationship-specific human capital has stronger influence than physical assets on the decision to vertically integrate production, but its implications on strategy have not been investigated. Our effort is to connect these isolated perspectives by applying appropriate methods that control for self-selection of governance and strategy choice (MASTEN, 1993; NICKERSON *et al*, 2001). Moreover, we disentangled the sources of human capital and social capital to provide distinctive contributions for strategy choice moderated by governance choice.

The Brazilian coffee production context provides a good context for this analysis. First, the coffee farmer represents the main decision-maker. This fact facilitates the assessment of human capital and social capital; for comparison, consider a large corporation and the implications to making the same assessment but for different decision-makers, for instance, the owners and the managers. Second, it is possible to clearly identify the strategy

alternatives, if the farmer pursues a low-cost strategy or a differentiation strategy (PORTER, 1991). Third, it is possible to observe that the adoption of spot-market or contract (WILLIAMSON, 2002) governs one of the most critical transactions, for instance, the coffee trade between the farmer and the coffee buyer. Fourth, it is possible to disentangle tangible and intangible resources; the former represents specific investments in assets owing to a particular strategy, while the latter are the investments on social and human capital made by a particular farmer.

There are certain implications when distinguishing tangible and intangible resources. The intangible resources are considered as firm-specific (HATCH; DYER, 2004; KOR; MAHONEY, 2004; KOR *et al*, 2007), task-specific (GIBBONS; WALDMAN, 2004) or even with regard to the empirical context, soil-specific (LABAND, 1984). This perspective is different from specific investments in tangible resources owing to a certain strategy; for instance, courier firms specialized in documents invest on specific information technology to provide traceability (NICKERSON *et al*, 2001) that looses its value if the courier firm changes the market positioning. In the case of intangible resources, expropriation of value occurs when the potential of the existing human capital and social capital are not exploited (LOVAS; GHOSHAL, 2000).

With regard to the coffee-production context, a farmer who had invested in a sun-drier equipment (tangible resource) to accomplish the quality standards required for a differentiation strategy may have the investment expropriated if he switches to a low-cost strategy. The investment on "the skills necessary for growing and processing agricultural products, however sophisticated and specialized, will seldom be relationship-specific and are thus unlikely to generate quasi-rents that would expose the transactors to the threat of hold ups" (MASTEN, 2000, p. 187). Consistent with the observation by Masten (2000), we consider that human capital and social capital are not relationship-specific, but a coffee farmer who had invested on formal education (BECKER, 1964) may have his investment expropriated if a financial constrain prevents him from exploiting all his potentials (LOVAS; GHOSHAL, 2000)

The aim of this study is to address the importance of intangible resources, such as human capital and social capital to improve the understanding of governance, resource, and strategy decisions. Recurring questions in strategic management literature rely on how to explain

performance differences and how to predict which firms switch the strategy positioning and resource allocation. Indeed, we claim that this is a productive framework to predict these decisions, as it has been difficult to explain them from separate theoretical perspectives. Although standard theories of economics and strategy convey the idea that some producers would switch to a differentiation strategy as the market grows, these theories find it difficult to predict which farmers would switch their production capacity. For instance, theories from industrial organization like the theory of market contestability, which assumes no entry barriers or no entry costs, indicate that some farmers will switch, but these theories contribute little in indentifying which farmers would switch. Though the strategic positioning framework (PORTER, 1991) identifies the opportunity for the farmers to differentiate, it does not explain which farmer would adopt a differentiation strategy, especially when the technology is freely accessible and economies of scale and regulatory privileges are not sources of entry barriers, as in the case for Brazilian coffee production. Other theories of strategy, such as resource-based view (BARNEY, 1991; KOR; MAHONEY, 2004) and knowledge-based-view (PETERAF, 1993; PRAHALAD; HAMEL, 1990) are not efficient in predicting the choice of differentiation. Although we agree that production of differentiated coffee may be linked to the geographical conditions or other physical resources[14], there is little indication to predict why some farmers do not adopt a differentiation strategy even when possessing privilege-tangible resources. The information about the market, prices, and production techniques is widely available and known, which reduces the likelihood that the possession of rare, inimitable information or knowledge is central to the differentiation decision. The transaction-cost economics (WILLIAMSON, 1985) is another theory in the strategy domain, which provides little information regarding which farmers would switch.

While our empirical context provides advantages toward the research objectives, we are aware of some limitations that need to be initially addressed. On considering the farmer as the main decision-maker and the relative simplicity of the farm organization, we are constrained to evaluate the existence of routines and tasks owing to the dynamic capabilities (TEECE *et al*, 1997) of the organization. With regard to the performance, our measures provide support for the comparison of firms that pursue a differentiation strategy, but not for the comparison of low-cost versus differentiation strategy. Even though we cannot provide a performance

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[14] We are aware that environmental resources and geographically concentrated and particular social conditions may explain the choice for other types of differentiated coffee such as *Fair trade*. However, this is not the case for special coffee differentiated by the quality of the drink, which includes attributes of aroma, taste, and flavor.

comparison on the alignment of govenance-resource-strategy alternatives (NICKERSON *et al*, 2001; GHOSH; JOHN, 1999), we can partially address the efficiency perspective on economizing the transaction costs (WILLIAMSON, 1985; MASTEN, 1993, 2002) and the performance implications owing to asymmetries on resources (BARNEY, 1991). In addition, differences in the performance can be predicted by the knowledge-based-view of competences and capabilities (PETERAF, 1993; PRAHALAD; HAMEL, 1990). The distinction of resources, capabilities, and competences has little implications[15] on this research, as we are interested in the effects of human capital and social capital on governance choice and strategy positioning. Previous studies have addressed the internal consistency on these perspectives:

> As the literature makes increasingly clear, a knowledge-based-view is the essence of the resource-based-view perspective. The central theme emerging in the strategic management resource-based literature is that privately held knowledge is a basic source of advantage in competition (CONNER; PRAHALAD, 1996, p. 477).

The paper begins by adopting the perspective that assumes that farmers possess essentially equivalent physical assets and identical information about production techniques and market opportunities. Subsequently, differences in the decisions must be attributed to the way in which they process information, their mental models, and cognitive structures. While these models and structures cannot be observed directly, human capital theory (BECKER, 1964; SCHULTZ, 1961, 1982) can provide a window into these structures by exploring the relationship between formal education[16] and the experience of the decision-maker and how these influence the firms' positioning in the market. Moreover, we have individually investigated the effects of human capital and social capital (COLEMAN, 1988) to overcome the constraints of the previous research that evaluated both the effects, but without distinctions (LOVAS; GHOSHAL, 2000).

Subsequently, a background information on coffee production in Brazil is provided, followed by a discussion on the use of spot-market and contractual arrangements to trade coffee (WILLIAMSON, 1985), and the implications on tangible resources (BARNEY, 1991) when

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[15] We follow Peteraf and Barney (2003) arguments, as the following: "We take the position that the dynamic capabilities literature is entirely consistent with RBT [Resource Based Theory] and should not be viewed as a separate theory. It is simply an extension of RBT to a dynamic setting" (PETERAF; BARNEY, 2003, p. 321-322)

[16] Becker (1964) considers the formal education as an investment that an individual can make to increase his or her human capital.

pursuing a low-cost or a differentiation strategy (PORTER, 1991), and we also discuss family farms (FLÖREN, 2002). After the context description, the theoretical references on transaction cost economics, resource-based view, and strategy positioning are presented along with a discussion on the assumptions of those references and implications from the perspective of human capital and social capital theory. By considering that strategy and governance choice are interdependent (MASTEN, 1993; NICKERSON *et al*, 2001), we applied a switching regression model that is presented in detail on the methods and data section. The results of the hypothesis testing, limitations, and final remarks are presented in the last section.

4.2 Family farm and coffee business context

4.2.1 The family farm

Allen and Lueck (1998) stated that family unit has been the dominant organization in farming since the earliest days of agriculture, and referred to previous studies that indicate the presence of family farms in ancient Egypt, Israel, Mesopotamia, North America (pre-Columbian Indians), Latin America, and Asia. Considering a modern approach, Flören (2002) articulated the definition of family farm as a subsection of the entire family business population[17]. Based on his definition in the Dutch context, an enterprise is recognized as a family business if it complies one of the three criteria: (1) a single family owns more than 50 percent of the shares (with regard to the ownership control by a family). However, if the business has been started less than 10 years ago, the it should also employ at least one more family member of the owner(s); (2) A single family is capable of exercising considerable influence on the business strategy or succession decisions; and (3) At least two members of the Board of Directors or Board of Advisors are from one family.

By switching our analytical lenses, it can be stated that a:

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[17] See Flören (2002, p. 17-22) for an extensive discussion on the various definitions for family business. Definitions are aggregated into categories of: generational transfer, interdependent subsystems, multiple exclusive, voting control, family management, family ownership, multiple inclusive, family employment, and ownership-management.

> […] farm organization can vary from a single owner or simple partnership, where labor is paid by residual claims, to a public corporation with many anonymous owners and specialized labor. A 'pure' family farm is the simplest case, where a single farmer owns the output and controls all farm assets, including labor assets. [footnote ignored] Factor-style corporate agriculture is the most complicated case, where many people own the farm and labor is provided by large groups of specialized fixed wage labor (ALLEN; LUECK, p. 1998:347).

With respect to this "Nature of the Farm", Allen and Lueck argued that farmers who control the effects of nature by mitigating the effects of seasonality and external shocks have chances to turn into a large-scale corporation. The family-controlled farm organization dominates the stages of production highly exposed to the forces of nature, as a consequence of limited gains from specialization owing to seasonality.

The family farmer has important choices and particular dynamics. The family farmer must decide on how to allocate resources between the family and farm (KEEFE; BURK, 1967), and must decide how to allocate farming time across different tasks (ALLEN; LUECK, 1998). With regard to family, there are endowments, investments on education (BECKER; TOMES, 1986), and propensity to transfer knowledge supported by altruism and care for future generations (MURPHY *et al*, 2008).

The sample of family farms for this study complies with Flören's (2002) conceptual definition and with Allen's and Lueck's (1998) perspective of farm organization. It is important to mention that our sample consists of farmers who differ with respect to generational experience (incumbents in coffee business and famers with long tradition in the business, up to the seventh family generation) and the size of the operations (small family farms dependent on family members as labor force and "corporate" family farms).

4.2.2 Coffee business

Brazil is the largest producer of coffee in the world, primarily producing Robusta and Arabica beans. The Arabica beans contain the aroma, flavor, and taste attributes that are highly valued when compared with the Robusta beans. The quality of a coffee blend prepared by the roast industry is determined by the quality of the Arabica beans produced in the farms. With the growth of firms like Starbucks and Seattle's Best, the market for this differentiated Arabica coffee has been increasing fast over the past decade representing about 8% of the world coffee production and 35% of the USA coffee market in 2004 (CHADDAD; BOLAND,

2007). As this market grew, some Brazilian farmers switched some or all of their production capacity to differentiated Arabica, while some farmers remained focused on commodity Arabica. Current isolated theoretical perspectives find it difficult to determine which farmers switch to differentiation strategy (PORTER, 1991).

With regard to the Brazilian coffee producers, the strategy choice is not trivial; there are trade-offs between the commodity and differentiation strategies with respect to investment decision (SAES, 2008). First, instead of the standard equipment for commodity production, the farmer has to invest on specific ones to guarantee post-harvest quality for specialties; examples of specific investments made for specialty coffee are as follows: (i) harvest equipments that are specific to differentiated production, because it allows the harvest of the mature beans without mixing them with the green beans, as in the case of harvest equipments for commodity production, (ii) investments to adjust the sun-dry process are specific to specialties - the adjustment is necessary to promote the migration of sugar and aroma from the fruit to the coffee beans, which will give body to the blend coffee, and which is a relevant attribute to the composition of the espresso (differentiation strategy). Second, the technical and agronomic practices to grow the coffee trees are idiosyncratic to the type of the specialty. Third, in most of the cases, yield productivity is negatively impacted by those practices to increase the coffee quality; the farmer may adopt agronomic practices to increase the quality of the coffee bean, but as a result, the volume of production may decrease - this is a typical trade-off of quantity versus quality. Fourth, in addition to the price coordination mechanism, the producer has to use certification programs and third-party evaluations (see appendix 5).

Giovannucci (2001) reported that coffee has a host of possibilities for differentiation under the definition of specialty coffees, starting with the attributes related to the variety of the bean (for instance, Brazilian Bourbon coffee bean), including production processes (organic, shade-grown, family-farmed, *Fairtrade*), place of production (origin, estate coffee), types of processing (natural coffee, pulped cherry, and demucilated), quality of the drink (which takes into account aroma, taste, body, and acidity), the industrialization process (aromatization, decaffeination), type of preparation (espresso, cappuccino), and even the place where it is sold (coffee shop).

This research investigated the effects of human capital and social capital owing to changes from low-cost strategy (commodity production) to differentiation strategy. Specifically, it is

investigated the farmer's choice to produce coffee that is differentiated by the quality of the drink, which is observed to have conceptual implications. First, the other types of coffee depend on tangible resources rather than on human and social capital (intangible resources). For instance, the existence of forest is a determinant resource owing to the production of "shade-grown" type of differentiation. However, one could argue that even if the tangible resource is available, the lack of human capital or social capital would prevent the farmer from adhering to the "shade-grown" production. Nevertheless, we may underestimate the farmers with intangible resources, constrained by tangible resources. Second, although we could not distinguish the volume of each type of differentiation owing to poor statistics on the sector, market experts indicate that differentiation by the quality of drink (which takes into account aroma, taste, body, and acidity) is the most widely produced among specialty coffee farmers in Brazil.

Farmers observe output from past resource allocations and learn from previous decisions. Genetic variety, level of fertilizer, and agricultural practices are examples of decisions that have been improved over the years by the owner carrying out business. Although codified knowledge exists, such as manuals and recommendations from extension centers, universities, and research institutions, the results depend on the adjustments that the farmer makes for the particular soil and climate conditions. Moreover, coffee trees have a natural production cycle of high-volume production in one year and low-volume production in the following year, which impact the producer's cash flow. This is important because the producer should invest when he is actually capital constrained. In the years of low production, the revenue will also decrease; however, this is the technical efficient moment to invest to achieve high quality of production in the following year, when the production also tends to increase with the natural condition of coffee trees. The ability to manage production fluctuations depends on the owner's knowledge about the resources that are specific to the firm. Indeed, for the farmers who adopt a differentiation strategy, this imposes an additional challenge because techniques and agronomic practices to improve the coffee quality may also decrease the yield productivity. Thus, in addition to quasi-rent appropriation problem (KLEIN *et al*, 1978) from idiosyncratic investments, the farmers who switch to differentiation strategy need a firm-specific knowledge to manage the decrease in production volume.

4.3   Theoretical reference

4.3.1   Governance, resource and strategy choice

In this section, it is presented the discussion about the literature on transaction-cost economics, resource-based view and strategy positioning. In addition, it is discussed the assumptions of those references and implications from human and social capital theory to derive the hypothesis that guide the empirical investigations.

The discussion on the firm's strategy to economize on the transaction costs began with Coase's (1937) seminal work, "The Nature of the Firm". Williamson (1985) developed a theory to predict the efficient governance structure owing to the characteristics of specificity, frequency, and uncertainty involved in the transaction. In this sense, transaction-cost economics predicts the adoption of contractual arrangements in the presence of idiosyncratic investments (WILLIAMSON, 1985) to avoid quasi-rent appropriation (KLEIN *et al*, 1978).

Saes (2005) suggested that it is unfeasible for a roast industry to vertically integrate the supply of coffee, because the consistency of a high-quality blend depends on the mixing of coffee beans from different regions or even different countries. Hence, the trade of coffee can be considered to rely on coordination by spot-market[18] and by contracts. In a spot-market relationship, there is no commitment among the parties and nothing is specified ex-ante:

> […] the negotiation evolves two steps: in the first round processing firms only signal their interest in acquiring the desired attribute. This can be done, for instance, through quality contests they conduct. The second round of the transaction may or may not take place (SAES, 2005, p. 6).

However, if the spot-market relationship frequently occurs between the parties, a relational contract emerges. While transaction is still voluntary, the coffee grower may have incentives to invest in specific assets to pursue the production of specialties[19].

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[18] To be precise, Saes (2005) adopted the perspective from Incentive Theory, and suggested a classification on loose and tight contracts. Loose contracts have the characteristics of spot-market coordination, while tight contracts have the characteristics close to vertical integration.

[19] This is the case of *illycaffè* that supplies high quality of coffee beans by an auction mechanism. The roast firm evaluates samples of coffee from all the candidate farmers to establish a ranking of quality. Although coffee growers have no ex-ante commitment with *illycaffè*, there is enough price reward to bid and to justify specific investments (SAES, 2008).

Another coordination mechanism is the establishment of contracts, which determines the ex-ante commitment among the parties (the contract is set before the production is made effective), define a fixed price or at least the criteria for pricing, and determine the duration of the contract (for instance, for one up to four crops). Although Masten (2000) claimed that contracting or vertical integration in the organization of agricultural transactions are driven by temporal or local specificity, this may not apply to the context of specialty coffee. Indeed, Masten's argument fits with respect to a commodity context (for instance, the temporal specificity of fruits to reach the consumer market); however, on a differentiation strategy, the investments on assets are highly specialized.

In the context of Brazilian coffee production, the choice for a differentiation strategy implies that the coffee producer makes specific investments, and to avoid quasi-rent appropriation, should tend to set a formal contract with the coffee buyer. Indeed, these specific investments in equipment, agronomic processes, and practices are tangible resources necessary to achieve the differentiated quality of Arabica beans demanded by the roast processor industry. The farmer will seek for a price premium when compared with the price paid for the commodity Arabica beans, to payback those investments. Considering that the critical transaction is on demand side (SAES, 2008), the farmers may seek for a formal contract that determines the volume of coffee, and even more importantly, the price premium. When the farmer pursues a commodity strategy, there may be no specific investment toward the demand for any particular roast industry; thus, the spot-market is the main coordination mechanism. The first hypothesis is based on the transaction cost economics argument:

> Hypothesis 1: The investment on tangible and transaction-specific resources necessary to pursue a differentiation strategy enhances the probability to adopt contracts.

By integrating of different perspectives, Nickerson *et al* (2001) provided empirical support by investigating the international couriers and small package services in Japan, to argue that strategic positioning, resource profile and governance are interdependent. For instance, a firm that is specialized in documents transportation (strategy) may require high investments in information system (resource profile) for tracking purposes through the transportation flow (domestic truck, international flight, international truck) and owing to the high specificity of the investments, the firm may tend to vertically integrate (governance choice). Another

illustration is the firm that is specialized in package transportation that may demand relatively low level of information; thus, the courier firm may outsource more activities because the investments are not specific.

Despite the critiques on competence perspective (resource-based view) for its tautological definitions and lack of predictability, Williamson (1999) suggested further developments that could integrate the transaction cost economics perspective: "There are many respects in which the competence and transaction cost perspectives are congruent. Both take exception with orthodoxy, both are bounded rationality constructions, and both maintain that organization matters" (WILLIAMSON, 1999, p. 1098). In this sense, Conner and Prahalad (1996) suggested that the governance mode through which individuals could interact affects the knowledge that they apply to make decisions. Both the perspectives assume that individuals are bounded rational, but Conner and Prahalad (1996) indicated that unlike transaction-cost economics, the presence of opportunism is not a necessary assumption for knowledge-based view.

Porter (1994) argued that resource-based view by itself is circular and lacks on prediction framework to be considered an alternative theory of strategy. However, the integration with the competitive strategy is desirable: "Resources are not valuable in themselves, but because they allow firms to perform activities that create advantages in particular markets" (PORTER, 1994, p. 446). In this sense, firms rely on the resources that enable the adoption of competitive strategies. One generic competitive strategy is the low-cost strategy: "A great deal of managerial attention to cost control is necessary to achieve […] a low-cost position [that] yields the firm above-average returns in its industry despite the presence of strong competitive forces" (PORTER, 1998, p. 35). Another generic competitive strategy is the differentiation strategy: "[…] achieving differentiation will imply a trade-off with cost position if the activities required in creating it are inherently costly, such as extensive research, product design, high quality materials, or intensive customer support" (PORTER, 1998, p. 38).

From the resource-based view (BARNEY, 1991; KOR; MAHONEY, 2004), the competitive advantage is rooted on the resources, thus, firm creates value by exploiting resources and taking action to prevent that competitors imitate or have access to valuable resources. We understand that strategic positioning and resource-based view have complementary views

once the former focus the analysis on factors external to the firm (such as industry structure) while the latter focus on factors internal to the firm (tacit knowledge on Penrose's perspective and resources on Barney's perspective). Indeed: "the analysis of the growth process [includes] the expectations of a firm – the way in which it interprets its 'environment' – are as much a function of the internal resources and operations of a firm as of the personal qualities of the entrepreneur" (PENROSE, 1995, p. 41).

The importance of governance with regard to the performance of the firms, especially on how to compare alternative governance arrangements, becomes increasingly important owing to the fact that transaction-cost economics follows the normative rationale of strategic management (MASTEN, 1993, 2002). Managers rely on economics discipline to improve their decisions and enhance business performance; thus, the methods have to provide appropriate support to findings on governance and performance of the firms. However, many scholars have failed to account for self-selection with respect to organization and strategy choice that contributes to "incontrovertible insights into that relation" (MASTEN, 2002, p. 430). We have addressed the hypothesis on performance, despite the constraints on our measures, and have accounted for the self-selection bias by using appropriate methods.

4.3.2   Human capital

When the concept of human capital was addressed by Gary Becker in 1957, there was much concern about the view of the man as a "stock", because human is "free" and not comparable with other forms of capital (BECKER, 1964). However, when people invest more on formal education and training, they become even freer in contrast to the "slave" criticism over human capital:

> Although it is obvious that people acquire useful skills and knowledge, it is not obvious that these skills and knowledge are a form of capital, that this capital is in substantial part a product of deliberate investment […] and that its growth may well be the most distinctive feature of the economic system (SCHULTZ, 1961, p. 1)

Human capital represents the acquired knowledge, skills, and capabilities of a person, which increase with the investment in formal education (BECKER, 1964) and family endowments (BECKER; TOMES, 1986). Sirmon and Hitt (2003) claimed that human capital in family firms is complicated because family members simultaneously participate in business and

family relationships. The dual association of personal and professional relationships creates a unique context of both positive and negative human capital. In a positive sense, human capital is promoted by the extraordinary commitment of family members (DONNELLEY, 1964) and takes the advantage of intimate relationships (HORTON, 1986) to transfer deep firm-specific tacit knowledge. Moreover, the early involvement of children in family firms provides a competitive advantage over nonfamily firms, because tacit knowledge is difficult to codify and is transferred through direct exposure and experience (LANE; LUBATKIN, 1998). In fact, people gain knowledge through formal education, by doing the job, and mentoring (HITT *et al*, 2001).

However, employing family members could lead to hiring suboptimal employees (DUNN, 1995). Indeed, "family firms frequently have trouble to attract and retain qualified managers due to exclusive succession, limited potential for professional growth, lack of perceived professionalism and limitations of wealth transfer" (SIRMON; HITT, 2003, p. 342). Family firms are constrained to manage human capital by effective selection, but have the advantage of tacit knowledge transfer owing to the early involvement of children and intimate relations, education endowments (BECKER, 1986), and less propensity to human capital migration, which is an additional mechanism to protect from rivals expropriation (HATCH; DYER, 2004).

While human capital provides positive effects on firms with respect to the accumulation of knowledge, skills, and experience, the implications on transaction cost economics rely on economizing the cognition and recognizing the opportunism threat. Consistent with March's (1978) idea that bounded rationality[20] imposes limits to human decision-making by the cognitive capabilities of human beings, transaction economizing perspective addresses that: "The attributes of human actors are centrally implicated […] Cognitive specialization, within and between firms, is a means by which to economize on mind as a scarce resource" (WILLIAMSON, 1999, p. 1090). In fact, the cognition also improves the capacity to recognize opportunism threat: "economic actors have the capacity to look ahead and recognize contractual hazards and investment opportunities […] as a product of experience" (WILLIAMSON, 1999, p. 1104). This latter perspective is consistent with Simon (1987) who

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[20] See March (1978, p. 591-593) for alternative rationalities: limited, contextual, game, process, adaptive, selected, and posterior rationality. Despite the different aspects on rationalities, we understand that all are consistent with the bounded rationality toward a behavioral theory of choice.

stated that experience and training improves the set of skills, cultivation of intuition, and judgment. Considering that human capital improves the capacity to recognize threats, and that governance mechanisms economize cognition, we state the second hypothesis as follows:

> Hypothesis 2: High level of human capital, comprising investments in formal education and experience from family background, enhances the probability to adopt formal contracts to protect specific investments.

Becker and Schultz provided empirical evidence that associates investments in formal education with more opportunities, both for work and earnings. Hatch and Dyer (2004) provided empirical evidence to support that human capital is an important source of competitive advantage of firms, because it is specific to the originating firm, and even if human capital migrates to competitors, the adjustments to the new environment prevents immediate expropriation. Considering human capital as a stock of resources, which provides competitive advantage to the firms is consistent with the resource-based view (BARNEY, 1991). The farmer may appropriate value from this competitive advantage by adopting efficient strategic positioning in the market, as stated by Porter (1991). The human capital of coffee farmers is enhanced by investments in formal education (BECKER, 1964) and firm-specific experience (HATCH; DYER, 2004; KOR; MAHONEY, 2004; KOR *et al*, 2007) accumulated by the family (SIRMON; HITT, 2003). In addition, farmers may accumulate a soil-specific (LABAND, 1984) human capital that facilitates the estimation of production behavior due to adoption of new techniques. Therefore, we formulate the third hypothesis:

> Hypothesis 3: High level of human capital, comprising investments in formal education, is associated with more adoption of differentiation strategy.

However, the family may accumulate non-valuable resources that lead to inertia and sub-optimal decisions (MOSAKOWSKI, 2002; TRIPSAS; GAVETTI, 2000; LEONARD-BARTON, 1992). For instance, the "internal" labor market of family business could lead to hiring suboptimal qualified employees (DUNN, 1995). In addition, a family farm may avoid switching strategies because the current orientation fits with the existing human capital. Thus, we state the fourth hypothesis as follows:

Hypothesis 4: high level of human capital, comprising experience from family background, is associated with less adoption of differentiation strategy.

Earlier studies associated a positive effect of human capital and firm performance (HITT *et al*, 2001). Sirmon and Hitt (2003) argued that the most important resource to a family firm is its human capital, considering it as a primary predictor of a new venture performance. Moreover, human capital provides deep firm-specific tacit knowledge, a type of intangible resource that is socially complex and difficult to imitate (BARNEY, 1991; HITT *et al* 2001). Human capital is also associated with firm's survival, on which highly educated business owners presented greater longevity than low educated ones in the context of small business in United States between 1976 and 1986 (BATES, 1990). It is also related to the firms' diversification decision, in the sense that the firm tends to invest within the groups of industries that are related to one another in the types of human skills required in each industry (FARJOUN, 1994). The human capital of family firms enhances the knowledge of firm-specific resources, thus leading to better evaluation, selection, and even shedding of the firms' resources (SIRMON; HITT, 2003).

In the coffee-production context, firm-specific human capital provides better estimations on how the farm's land will react to a certain fertilizer treatment, and how the historical climate conditions would fit a differentiated coffee production (because it largely contributes to quality attributes) or commodity production (because it increases the volume productivity). Indeed "Observed behavior reflects the beliefs and judgment of decision makers and will reflect the true performance relations only to the extent that those beliefs are accurate" (MASTEN, 1993, p. 120). Considering the price premium of specialty coffee as a reflection of differentiation strategy performance, we state the fifth hypothesis:

Hypothesis 5: High level of human capital, comprising investments in formal education and experience from family background, is associated with higher price premium owing to differentiation strategy.

4.3.3 Social capital

Social capital involves the relationship between individuals or organizations (BURT, 1992), and provides access to resources embedded within, available through, and derived from the

network (NAHAPIET; GHOSHAL, 1998). Adler and Kwon (2002) argued that social capital affects the resource interchange, creation of intellectual capital, learning, product innovation, and entrepreneurship. The family's social capital increases by connecting social structures of networks, improving shared language and narratives, and promoting relational ties based on trust, norms, and obligations (SIRMON; HITT, 2003). Family ties are important source of resources (LAIRD, 2006); for instance, family connections provide access to cheap financial resources, information about new opportunities of investment, and knowledge from other family members.

Enduring relationships lead to different interpretations from social capital and transaction-cost economics. Considering the former, long-term relationship is a condition for the emergence of the benefits from social capital, such as access to resources, trust, and so on. The latter perspective implies that long-term contract specifies the terms and conditions of future transaction ex-ante; in this sense, the contract is salvage against ex-post problems (JOSKOW, 1987).

There exists an important apprehension when combining the sociological perspective with the economizing rationale. While the existence of prior exchange (UZZI, 1997) leads to emergence of social ties and expectations of cooperation, cooperation at present is only reliable with respect to the expectations of future gains form the calculative perspective of the economists (BAKER et al, 2002). To reinforce the calculative rationality and prevention of opportunist behavior, "Credible contracting is very much an exercise in farsighted contracting, whereby the parties look ahead, recognize hazards, and devise hazard mitigating responses – thereby to realize mutual gain" (WILLIAMSON, 1999, p. 1090). However, "Sometimes the risk may be reduced by use of contracts that are enforceable by law, but, for a variety of reasons, contracts cannot always serve this purpose" (COLEMAN, 1990, p. 91).

Indeed, Uzzi (1997) suggested that trust plays the role of the governance structure in the relationships where social ties overcome the calculative impersonal contractual ties. Although contrasting perspectives, Poppo and Zenger (2002) suggested that formal contracts and relational governance function as complements. In this sense, relational governance enables the refinement of contracts and promotes stability in the exchange among the parties. Thus, consistent with the complementary perspective, we state the sixth hypothesis:

Hypothesis 6: High social capital, comprising a number of connections in the labor market and duration of relationship to the buyer, is associated with more adoption of contracts.

Walker *et al* (1997) suggested that entrepreneurial actions take place when firms utilize the network structure to facilitate the governance of relationships and when opportunities arise from connections between the unlinked firms. In addition, these authors contrast Coleman's and Bourdieu's perspective as well as Burt's perspective regarding the emergence of trust.

"[…] placing trust involves the trustor's voluntarily placing resources at the disposal of another party (the trustee), without any real commitment form that other party" (COLEMAN 1990, p. 98). In addition, Coleman assumes that trust emerges by judgment and evaluation among parties considering the future benefits of placing trust, not necessarily by previous relationships.

According to Burt (1992), social capital creates value by enabling the emergence of trust by selection of partners: "The question is not whether to trust, but whom to trust" (BURT, 1992, p. 15). In this perspective, trust emerges as a result of strong relationship, in which parties select each other with similar social attributes of education, income, occupation, shared background and interests. Thus, an underlying condition to the emergence of trust is the relationship duration between parties; it takes time to identify similar social attributes. In addition, the selection of partners has cognition reasoning:

> Creatures of bounded rationality like ourselves have no choice but to attend selectively to the environment in which we operate and information about it. Identification with groups is the major selective mechanism controlling human attention in organizations (and elsewhere) (SIMON, 1993, p. 137).

It is expected that highly socially connected farmers pursue a differentiation strategy, facilitated by a high number of social connections (similar to Coleman's and Bourdieu's perspective) and an enduring relationship (similar to Burt's perspective). Specifically, we assume that socially connected farmers take the advantage of cooperation (UZZI, 1997) to

establish contracts[21], refine the terms of the contract, and promote its stability. However, we assume a sociological perspective for enduring relationship that predicts the emergence of trust among the agents, and relaxes the opportunism assumption (CONNER; PRAHALAD, 1996) – in this sense, farmers with enduring relationship will economize on the costs to design, negotiate, and establish contracts by adopting spot-market governance. Thus, we state the hypotheses moderated by governance choice as follows:

> Hypothesis 7: High social capital, comprising a number of connections in the labor market, is associated with more adoption of differentiation strategy when contracts are established.

> Hypothesis 8: High social capital, comprising the duration of relationship to the buyer, is associated with more adoption of differentiation strategy when spot-market is chosen.

Harrington (2001) confirmed the earlier studies that associated the benefits of social capital and firms' performance. His results support the idea that network ties at the individual level have a powerful impact on organizational performance. Specifically, the number of networks of one individual is considered to enhance the organization's finance performance, both directly and indirectly, through an increase in task orientation (willingness to sacrifice some degree of social cohesion for decision quality) and group heterogeneity (the larger the information pool, the better is the decision-making process). Ding and Abetti (2003) indicated the utilization of the unique social capital with respect to the Chinese family entrepreneurs, to the economic development of Taiwan, and the success of firms in the electronic hardware-manufacturing sector. The results are consistent with earlier studies that suggested that embedded social and economic context of specific geographical regions positively influences the formation and performance of new business. By considering the price premium of specialty coffee as a proxy to performance of differentiation strategy, we state the hypothesis:

> Hypothesis 9: High social capital, comprising a number of connections in the labor market and duration of the relationship to the buyer, is associated with better performance on differentiated strategy.

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[21] To be precise, Uzzi (1997) investigates two forms of exchange in New York City apparel industry: "arm's-length ties" close related to spot-market arrangement, and "embedded ties" close related to relational contracts (POPPO, ZENGER, 2002).

4.4   Methods

One dependent variable is the *Strategy choice*, which is a continuous measure of the volume of the differentiated coffee for each observation. This measure is left-censored, because farmers who chose the commodity strategy will present zero value for the dependent variable, in contrast to any positive value for those who adopt a differentiation strategy. Hence, the appropriate method of estimation is the Tobit regression.

The correlation between strategy choice and governance choice are statistically significant ($p<0.01$; see table 5). Furthermore, previous literature accounts for endogeneity in strategy choice and governance choice (NICKERSON *et al*, 2001), as well as endogeneity in strategy choice and performance (SHAVER, 1998; MASTEN, 1993). This indicates that the strategy and governance are not independently chosen by the decision-maker, and that there is a problem that emerges when individuals self-select a strategy that provides a better match with its governance. However, we cannot observe the counterfactual choice; for example, if we observe one particular farmer who produces a certain volume of differentiated coffee, given that he had settled a formal contract with the coffee buyer, we cannot observe what would be his production (the volume of differentiated coffee or even a change in the commodity strategy) if he had chosen commercialization through the spot-market. To reinforce the importance of endogeneity control: "What is needed, therefore, is an approach that combines transaction-cost economics' insights regarding the selection of governance arrangements with strategy's orientation towards performance" (MASTEN, 1993, p. 120).

To correct for the endogeneity problems between governance and strategy choice, we can apply an endogenous switching regression method[22] (HAMILTON; NICKERSON, 2003). We propose an equation to predict the value for *Governance choice* that will be introduced in another equation to explain *Strategy choice*. By considering that *Governance choice* is a binary variable that takes the value 1 for formal contract or 0 for spot-market, we applied a Probit regression. All the explanatory variables for *Strategy choice* were also introduced in the equation to predict *Governance choice*. In addition, we introduced an instrumental

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[22] See Hamilton and Nickerson (2003) for a detailed treatment of edogeneity problem, including the *Mills ratio*, instrumental variable choice and switching procedures.

variable that affects governance choice but does not directly impact the strategy choice. The Rural Product Credit Note (CPR) is an appropriate instrumental variable owing to the following reasons.

The Rural Product Credit Note (*CPR*) is a mechanism to finance the activities on the farm by selling the production in advance. It was first created by the Bank of Brazil as an alternative way to raise funds when the producers' assets, such as land and equipment, are not available as credit salvage. Instead, the future production is employed to guarantee the payment of the credit. The *CPR* is a title recognized by the Brazilian Government since 1994. With this support, farmers can negotiate competitive funds with banks, trading companies, or roast industries. The use of *CPR* as a financing mechanism is primarily related to the *Governance choice* and is not related to *Strategy choice*. *CPR* explains the *Governance choice* because the farmer will be willing to set a contractual arrangement with the coffee buyer to trade the *CPR* to raise funds, or the bank that accepted the farmer's *CPR* may ask for a contract of sale with the coffee buyer. In the other case, if the farmer has other sources of financing, the use of contract with coffee buyer depends on the farmer's wiliness to hedge the coffee price or to avoid the costs of contractual arrangements. *CPR* does not relate to *Strategy choice* because, independent of the farmer's choice for commodity or differentiation strategy, the use of *CPR* fits as an adequate instrument for financing. The amount of finance raised in a *CPR* is adequate to cover the operational costs (working capital) but is not relevant for investment decisions.

Equation 1

$$\Pr(\text{Governance Choice}) = \Phi\ (\beta_0 + \beta_1\ \text{Education} + \beta_2\ \text{Experience} + \beta_3\ \text{Social connections} + \beta_4\ \text{Relationship duration} + \beta_5\ \text{Farm Size} + \beta_6\ \text{Investment} + \beta_7\ \text{Farmer Age} + \beta_8\ \text{Distance} + \beta_9\ \text{Diversification} + \gamma_1\ \text{CPR})$$

Where: Φ (.): cumulative normal distribution

Equation 2

Strategy Choice = $\beta_0 + \beta_1$ Education $+ \beta_2$ Experience $+ \beta_3$ Social connections $+ \beta_4$ Relationship duration $+ \beta_5$ Farm Size $+ \beta_6$ Investment $+ \beta_7$ Farmer Age $+ \beta_8$ Distance $+ \beta_9$ Diversification $+ \beta_{10}$ Mills Ratio $+ \varepsilon$

This procedure is known as switching regression model in labor econometrics. First, we estimate the reduced form of governance choice via Probit, and construct the inverse *Mills ratio* terms. Second, we estimate the strategy-specific governance equations via Tobit regression, including the *Mills ratio* terms as regressors, to obtain unbiased estimates (HAMILTON; NICKERSON, 2003).

The *Mills ratio* signal indicates a positive or negative selection. In this study, the *Mills ratio* < 0 is a positive selection into formal contract as the governance choice, and *Mills ratio* > 0 is a positive selection in the spot-market chosen as the governance choice. Here, a positive selection indicates that the farmer produces more differentiated coffee (as a measure of differentiation strategy) than the average under formal contract governance. Alternatively, a positive selection means that the farmer is specialized in commodity production when spot-market is chosen as the governance choice. Considering the producers who had chosen the formal contract, if *Mills ratio* > 0, then a negative selection occurs and they may produce less differentiated coffee than the average.

The residual (error term) in the proposed model might capture differences in the owner's ability that is not explained by formal education or by experience inherited from family. Similarly, the residual might capture difference in owner's social capital not explained by family ties or by relationship duration. In addition, the residual term may also capture the differences in the owner's preference for any particular governance or strategy choice. The specified model does not control for regional differences, because it does not expect any geographically concentrated condition to explain the dependent variables, given the treatment of sample before the analysis.

Another dependent variable is the performance of differentiation strategy, which is a measure for the price premium for differentiated coffee over the commodity coffee, for each

observation. This measure is left-censored because farmers who chose the commodity strategy will present zero value for the dependent variable, in contrast to any positive value for those who adopted a differentiation strategy. Hence, the appropriate method of estimation is the Tobit regression.

<u>Equation 3</u>

Differentiation performance = β_0 + β_1 Education + β_2 Experience + β_3 Social connections + β_4 Relationship duration + β_5 Farm Size + β_6 Investment + β_7 Farmer Age + β_8 Distance + β_9 Diversification + β_{10} Governance choice + β_{11} Strategy choice + ε

4.5   Data

The description and measures of all variables in the model are presented in Chart 8. The data were obtained by interviewing 409 farmers over phone, following a structured questionnaire from July to November 2007. The sample of farmers was provided by the coffee-processing industries and cooperatives. Although the data were collected from 409 coffee producers, further analysis indicated that for some regions, the access to unique resources or natural conditions would influence the strategy choice. For instance, farmers in the State of Espirito Santo cannot produce differentiated coffee because of the low altitude of the region. Another competing explanation for the heterogeneity of strategies is the social structure effects. This is the case of *Fair trade coffee* in the city of Machado and in the State of Ceará. All those cases were excluded from our sample, owing to the above-mentioned reasons. The sample was reduced to 283 farmers who were in similar natural conditions and competitive environment, a context that made the test of the hypotheses valid. With respect to the missing variables in the specified model, the sample was narrowed down to 255 coffee producers.

Chart 8 - Description and measures of variables

Dependent Variable: measures for equations 1, 2 and 3	
Governance Choice (Equation 1)	The governance of the transaction between the coffee farmer and coffee buyer is a binary variable codified as (1) for contract arrangement or (0) for market relationship
Strategy Choice (Equation 2)	The strategy variable measures the volume (metric tons) of differentiated coffee for each observation. Variable equals zero if farmer is focused on commodity production. Variable takes any positive value in direct proportion to the differentiation strategy adopted by the farmer
Differentiation Performance (Equation 3)	Performance is measured by the price premium for the special coffee over the commodity price (%). Variable equals zero if the farmer is focused on the commodity production. Variable takes any positive value in direct proportion to the price premium over the commodity price

Explanatory Variable: measure for asset specificity	
Investment	Investment is a continuous variable that captures the amount of money (measured by R$ million - Brazilian currency Reais) invested in equipment, assets, and techniques that are specific to the production of specialty coffee
Explanatory Variables: measures for human capital	
Education	Education is a binary variable codified as (1) for owners with college degree or (0) for owners who did not complete college
Experience	The measure is a binary variable that equals to (1) if the farmer is the second or third generation on coffee production or (0) if the farmer is the founder of the coffee business
Explanatory Variables: measures for social capital	
Social connections	Size of labor market comprising people who are hired under family relationship with a farmer in each county (measured by the number of workers). Source: IBGE – Brazilian Institution of Geography and Statistics – 2006 Agricultural Census
Relationship duration	Number of consecutive years of relationship between the farmer and the coffee buyer (measured by the number of years)

Control Variables	
Farm Size	Farm Size is measured by land dimension. All data were standardized in hectares (10,000 square meters)
Age of the owner	Owner's age is measured in years
Distance	The distance from the owner's home and the farm is measured in kilometers (each value represents 10 kilometers for rescaling purposes). In case of more than one location for home or farm, the following criteria were applied: (i) the home where the owner expends more time and (ii) farm where the owner concentrates the administrative duties
Diversification	Diversification is a binary variable codified as (1) for farmers who diversified from coffee production or (0) for farmers who are focused only on coffee production

Instrumental variable	
CPR	The use of CPR (Rural Product Credit Note) as a financing mechanism by the farmer is a binary variable codified as (1) for use of CPR as finance contract or (0) for no use of CPR

Investment is a continuous variable that captures the amount of money (measured in R$ million - Brazilian currency Reais) invested in equipment, assets, and techniques that are specific to the production of differentiated coffee. This measure is consistent with the

literature on transaction cost economics, which considers the size of the initial investments as a proxy for specific investments (MASTEN, 2002).

Education is a dummy variable, coded as 1 if the farmer had a college degree. This measure is consistent with the previous study that measured the school degree as a proxy for human capital (RAUCH *et al*, 2005; HITT *et al*, 2001). *Experience* from family background is a dummy variable, which is coded as 1 if the current farmer has a previous family generation in the coffee business. Other studies measured experience as a proxy for human capital, for instance, the founder's experience on start-up (SHANE; STUART, 2002) and manager's experience in the industry (HITT *et al*, 2001).

Relationship duration measures the number of consecutive years of relationship between the farmer and the coffee buyer. This is a proxy for Burts' perspective that indicates that increasing social capital should enable trust with the selection of partners, and has no effect on the number of new relationships. *Social connections* are measured by the size of the labor market comprising people who are hired under family relationship with a farmer in each county. It is a region-based proxy for social capital from Coleman's and Bourdieu's perspective, following the idea that "some firms occupy positions that are embedded in regions filled with relationships, indicating a high level of available social capital, but other positions are located in regions with few relationships, suggesting a low social capital" (WALKER *et al*, 1997, p. 111).

Acqaah (2007) discussed the difficulties in obtaining performance measures in emerging economies because the data are either not available or difficult to acquire. In fact, firms may be reluctant to provide objective performance measures. However, in the context of coffee farmer context, the difficult to obtain data may be owing to the lack or low consistence of information that is organized by the farmer. For instance, most of the respondents could not answer how much the differentiated coffee cost more than the commodity coffee, because they have low administrative control to support this information. While cost information is not consistent, the price premium paid for differentiated coffee is well known by the farmer. Thus, we relied on this alternative measure that allows the investigation of performance among farmers who pursue a differentiation strategy.

The summary statistics and correlations for all variables are presented in Table 5. With regard to explanatory variables, *Relationship duration* showed a positive correlation ($p<0.05$) with *Strategy choice*; *Experience* inherited from family presented a positive correlation ($p<0.05$) with *Differentiation performance*; *Investment* showed a strongly positive correlation ($p<0.01$) with *Strategy choice*.

Table 5 – Summary statistics and correlations

Variables	Mean	Std. Dev.	Min.	Max.	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Governance choice	0.067	0.250	0	1	1.000												
2 Strategy choice	31.395	130.759	0	1320	0.186** 0.001	1.000											
3 Differ. performance	22.555	11.627	0	80	-0.037 0.710	0.006 0.952	1.000										
4 Investment	0.180	1.549	0	25	0.039 0.506	0.178** 0.002	-0.039 0.697	1.000									
5 Education	0.521	0.500	0	1	-0.025 0.668	0.044 0.454	-0.181 0.072	0.075 0.207	1.000								
6 Experience	0.373	0.484	0	1	-0.065 0.295	0.091 0.143	0.210* 0.043	-0.020 0.743	0.063 0.312	1.000							
7 Social connection	105.869	243.948	1.012	971	0.022 0.708	0.001 0.988	0.068 0.504	-0.030 0.610	-0.046 0.440	0.007 0.906	1.000						
8 Relationship duration	12.568	9.546	0	50	0.049 0.409	0.117* 0.047	-0.089 0.376	-0.037 0.529	-0.003 0.960	0.079 0.200	0.023 0.692	1.000					
9 CPR	0.190	0.393	0	1	0.121* 0.041	0.037 0.526	0.036 0.720	-0.027 0.644	0.043 0.470	-0.094 0.129	0.005 0.922	-0.016 0.779	1.000				
10 Farm size	86.975	170.419	0	1500	0.233** 0.000	0.734** 0.000	0.041 0.680	0.267** 0.000	0.065 0.276	-0.004 0.945	0.052 0.384	0.175** 0.003	0.035 0.557	1.000			
11 Distance	58.597	148.841	0	1400	-0.075 0.206	-0.033 0.576	-0.028 0.780	-0.019 0.740	-0.068 0.249	-0.113 0.068	-0.049 0.412	0.060 0.314	0.029 0.620	-0.009 0.879	1.000		
12 Age of the owner	51.487	12.996	22	83	-0.060 0.313	-0.065 0.271	-0.111 0.272	-0.081 0.173	-0.068 0.249	-0.169** 0.006	0.052 0.380	0.259** 0.000	0.060 0.313	0.051 0.388	0.081 0.173	1000	
13 Diversification	0.705	0.456	0	1	-0.105 0.076	-0.004 0.946	-0.275** 0.006	0.055 0.356	0.236** 0.000	-0.018 0.767	-0.091 0.126	0.133* 0.025	0.077 0.197	0.055 0.349	0.147* 0.013	0.089 0.133	1.000

**p<0.01, *p<0.05

4.6   Results

Probit and Tobit estimations for governance choice (model 1), strategy choice (models 2 and 3), and differentiation performance (model 4) are presented in Table 6. Model specifications control for endogeneity[23] between the governance choice and strategy choice, by applying the *Mills_ratio* (*Mills_ration_1* = contract; *Mills_ration_0* = spot-market), estimated in model 1 as the endogenous governance choice for estimating the strategy choice. Estimation for governance choice considered all 255 observations, while for the strategy choice the sample was split into two sub-samples as a part of the method. All the 89 farmers who adopted a differentiation strategy were considered in the estimation of performance.

With respect to the governance-choice equation (model 1), it is important to note that the instrumental variable *CPR* (finance contract) is statistically significant ($p < 0.05$) and its positive value indicates that the use of *CPR* as a financing mechanism increases the farmer's adoption of formal contract to govern the relation with coffee buyers. However, all human capital and social capital explanatory variables were not statistically significant with respect to governance choice. Regarding the control variables, *Age of the owner* ($p < 0.05$) indicates that older farmer adopted less formal contract; *Distance* ($p < 0.05$) suggests that the farther the owner lives from the farm, the less willing he will be to adopt a formal contract; and *Farm size* ($p < 0.10$) was weakly significant and positive, suggesting further adoption of contracts when the operation scale increases.

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[23] Considering that *Strategy choice* and *Governance choice* could be simultaneous decisions, we tested the Seemingly Unrelated Regression (SUR) as the method of estimation, but the results indicated no significant correlation between the error terms of the equations.

Table 6 – Probit and Tobit results.

Variables	PROBIT Governance choice (1 = contract; 0 = spot-market) (1) ß (std. dev)	TOBIT Strategy choice (0 = commodity; >0 = degree of differentiation) (2) Contract ß (std. dev)	(3) Spot-market ß (std. dev)	TOBIT Differentiation performance (price premium for specialty) (4) ß (std. dev)
Asset Specificity				
Investment	0.313[†]	54.938*	88.131*	0.997
	(0.165)	(19.497)	(36.490)	(1.859)
Human Capital				
Education	-0.251	165.180*	-3.033	-4.126[†]
	(0.254)	(55.838)	(25.245)	(2.143)
Experience	-0.364	-112.581	20.31	5.762**
	(0.303)	(59.798)	(25.929)	(2.119)
Social Capital				
Social connections	0.463	0.436*	-0.095[†]	0.451
	(0.546)	(0.138)	(0.054)	(6.212)
Relation. duration	0.110	-11.183[†]	2.411*	-0.127
	(0.141)	(5.278)	(1.202)	(0.113)
Instrumental var.				
CPR	0.541*			
	(0.215)			
Mills_ratio_1		-384.999**		
		(85.958)		
Mills_ratio_0			294.183[†]	
			(160.240)	
Controls				
Farm size	1.096[†]	0.714*	0.519***	0.019
	(0.619)	(0.213)	(0.081)	(0.013)
Distance	-3.311**	0.826	0.025	4.772
	(1.288)	(1.831)	(0.077)	(5.052)
Age of the owner	-0.020**	13.540[†]	-1.110	-0.058
	(0.008)	(6.483)	(1.136)	(0.086)
Diversification	-0.281	-318.388*	1.516	-2.854
	(0.305)	(105.618)	(27.028)	(2.370)
Contract				-10.728*
				(4.636)
Differentiation				-0.021
				(0.015)
Constant	-0.504[†]	-1261.461*	-125.333	26.964***
	(0.545)	(393.540)	(79.458)	(4.773)
Observations	255	16	239	89
Prob> χ^2	p<0.001	p<0.001	p<0.001	p<0.05
Pseudo R^2	0.154	0.295	0.076	0.030

*** $p<0.001$, ** $p<0.01$, * $p<0.05$, [†] $p<0.10$

We can observe that the asset specificity proxy, *Investment,* is positive and statistically significant ($p<0.05$), which supported Hypothesis 1: The investment on tangible and

transaction-specific resources necessary to pursue a differentiation strategy enhances the probability to adopt contracts. This finding was in agreement with the previous studies (KLEIN *et al*, 1978; MASTEN, 1993; 2002).

On the other hand, investments in formal education or experience from family background were not statistically significant to explain the adoption of contracts; thus, our findings did not support Hypothesis 2. Although we are not aware of previous studies claiming this relation, we expected that human capital would contribute to the assessment of hazards that would directly justify the adoption of contracts (WILLIAMSON, 1999; MARCH, 1978). Alternatively, we speculated that social capital would also contribute to prevent hazards from opportunism. However, none of the social capital proxies supported Hypothesis 6.

With respect to strategy-choice equations (models 2 and 3), it can be observed that *Mills_ratio* was statistically significant for strategy choice if contract ($p<0.01$) or spot market ($p<0.10$) was chosen (sub-samples[24]). Moreover, one can observe a positive selection in the contract sub-sample (*Mills_ratio_1* < 0), which indicated that the farmer produces more specialty coffee (as a measure of differentiation strategy) than the average under formal contract governance. A positive selection also occurred in the spot-market sub-sample (*Mills_ratio_0* > 0). In this case, the farmer was specialized in commodity production when spot-market was chosen as the governance choice. In addition, we observed that some control variables were statistically significant. *Farm size* can be observed to be positive and statistically significant in model 2 ($p<0.05$) and in model 3 ($p<0.001$), indicating a direct relationship of scale of operation and adoption of differentiation strategy. Furthermore, it was observed that *Age of the owner* was weakly significant ($p< 0.10$) while *Diversification* was statistically significant in model 2 ($p<0.05$); its negative coefficient suggests that farmers with diversified economic activity have fewer propensities to pursue a differentiation strategy, even under the protection of contracts.

Education was the only proxy for human capital with statistical significance in the estimation of strategy choice, especially when contract was chosen (model 2). Thus, Hypothesis 3 stating that high level of human capital, comprising investments in formal education, is associated

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[24] We noticed the few observations to test Strategy choice (second equation) when the farmer had chosen "formal contract" as the Governance choice (first equation). Alternatively, we tried another model by introducing the predicted Governance choice (Governance HAT) in the second equation considering all the observations, but the findings were similar to models that do not control for endogeneity.

with more adoption of differentiation strategy was partially supported, because *Education* indicated no significant influence on strategy choice when spot-market was chosen (model 3). Hypothesis 4 is not supported.

All the social capital proxies were statistically significant in the estimations for strategy choice. *Family ties* proxy was positive and statistically significant ($p<0.05$) to explain the differentiation strategy when contract was chosen (model 2). Although we found a negative coefficient for the *Social connections* proxy, it was weakly significant ($p<0.10$) to explain the strategy when spot-market was chosen.

Our findings are consistent with the idea that socially connected farmers have advantage of cooperation to establish contracts (UZZI, 1997), refine the terms of the contract, and promote its stability. This supported the Hypothesis 7: high social capital, comprising a number of connections in labor market, is associated with the adoption of differentiation strategy when contracts are established.

Relationship duration was observed to be positive and statistically significant to explain strategy adoption when spot-market was chosen (model 3). Similar to our findings on *Social connections*, *Relationship duration* had a negative but weakly significant ($p<0.10$) coefficient in the estimation of differentiation adoption when the contract was chosen (model 2). Our findings suggest that farmers with enduring relationship will economize on the costs to design, negotiate, and establish contracts by adopting spot-market governance. Thus, this supported the Hypothesis 8: high social capital, comprising the duration of relationship to the buyer, is associated with the adoption of differentiation strategy when spot-market is chosen.

Differentiation performance was estimated in model 4. The Tobit regression estimated the price premium achieved by a farmer who pursued a differentiation strategy. Though there are data and measure constraints to compare low-cost versus differentiation strategy, this estimation provided helpful insights. As none of the social capital proxies were significant, thus, our findings did not support Hypothesis 9.

The positive and strongly significant coefficient ($p<0.01$) for *Experience* suggested that farmer with higher experience from family background achieves higher premium price for specialty coffee. However, the negative coefficient for *Education* indicated the opposite,

although weakly significant (p<0.10). These findings partially supported the Hypothesis 5: high level of human capital, comprising investments in formal education and experience from family background, is associated with higher price premium owing to differentiation strategy. The effects of *Experience*, the other proxy for human capital with stronger and positive effect on performance, was in agreement with earlier studies on the family as a repository of valuable firm-specific knowledge (HATCH; DYER, 2004; KOR; MAHONEY, 2004; KOR *et al*, 2007) that support better use of resources (MAHONEY; PANDIAN, 1992) and accurate estimations from judgments (MASTEN, 1993).

Contract presented a negative and significant coefficient in model 4. This finding suggested that adoption of contract leads to lower prices when compared with spot-market governance, although we have applied a cross-section analysis that prevent us from considering a persistence of this effect over time. By assuming this limitation, our results indicated that some "price is paid" when setting a contract that reflected the lower price premium compared to the premium achieved under spot-market governance.

Considering the results on differentiation strategy performance (model 4), we identified that *Experience* supported higher price premium while *Education* and *Contract* lead to conservative performance. The lower price for specialty coffee may reflect a cost for establishing contracts, although we are not aware of previous studies that associate higher education and conservative performance. Hypothesis 9, that social capital would support higher price premium was not supported by model 4. According to Weisz and Vassolo (2004), entrepreneurs that are highly connected to family members suffer to choose the adequate business partners, and these sub-optimal decisions explained more failure of nascent business in the Argentine context. With regard to coffee producers, the close proximity with the coffee buyer may result in sub-optimal price premium.

4.7 Limitations

To accomplish the efforts to integrate transaction cost economics, resource-based view, strategy, human capital and social capital theory, we made many simplifications. By considering the linking of human capital, social capital, and resource-based view, we limited the discussion of resources to exploitation (for instance, firms choose strategies that

effectively exploit the existing human capital and social capital), while previous studies (LOVAS; GHOSHAL, 2000; WERNERFELT, 1984; DIERICKX; COOL, 1989) have addressed concerns on the creation of resources (in this case, firms facilitates the development of new, valuable human capital and social capital). We assumed no role for the mobility of people carrying human capital and social capital across the firms, from firms to market, or coordination of this flow by any governance structure (CONNER; PRAHALAD, 1996); however, we believe that this concerns was ameliorated on a mature-technology industry, such as the production of coffee. Regarding the strategic positioning, we simplified the strategies around two discrete options, although Porter (1998) predicted an intermediary alternative, which is the focus generic competitive strategy. Although transaction-cost economics analyzes the specificity of the assets, frequency, and uncertainty (WILLIAMSON, 1985) involved in a certain transaction to predict the appropriate governance structure, we focused our attention on the first attribute – in fact, many studies relied on asset specificity. We made no distinction on contract duration (JOSKOW, 1987) and frequency of transaction. Moreover, we assumed the emergence of trust in direct association to relationship duration, a simplification that reduces the role of the sociological dynamics (BURT, 1992; COLEMAN, 1990). In addition, our analysis ignored the institutional effects (WILLIAMSON, 1999), which Mesquita and Lazzarini (2008) investigated on emerging economies to conclude that firms strengthen informal ties to overcome transaction hazards and the lack of strong institutional settings.

We have made a number of simplifications on our measures. As we initially addressed in this paper, our constrained measure of performance was an effort to overcome the challenges of obtaining objective proxies (ACQAAH, 2007). Our measures on human capital and social capital had their limitations. Although we identified the farmer's level of formal education, we were not able to distinguish the quality of the school. In this sense, D'Aveni (1989) suggested that people who graduated from prestigious universities have access to privileged networks, in addition to the high quality of education. Our measures on social capital suffered from simplifications from the concepts of Burt (1992), Bourdieu, and Coleman (1990). Moreover, our measures on social capital had limitations to capture the effects of cooperatives[25], assistance bureaus, and other agents that may constitute the farmer's social

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[25] Important remark: we accessed the coffee producers through cooperatives and associations. We tried the measures on number of cooperatives and associations related to the coffee farmer, size of the cooperatives and associations, and proxies for the relevance of these organizations; however, none of them were promising.

relationships. We acknowledge the limitations of our measures; yet, it was an effort to incorporate human and social capital theory in the analysis of the triad decisions of governance, resource, and strategy.

4.8 Final Remarks

While previous studies considered that human capital (BECKER, 1964; SCHULTZ, 1961, 1982) and social capital (BURT, 1992; COLEMAN, 1988) are determinants of firms' performance (HITT *et al*, 2001; HARRINGTON, 2001) and competitive advantage (DING; ABETTI, 2003; HATCH; DYER, 2004; ACQAAH, 2007), the literature linking transaction cost economics, resource-based view and strategic positioning has ignored the differences in managers' skills, abilities, and experience. We have contributed to this debate by testing the hypothesis and applying appropriate methods to control for endogenous effects owing to the self-selection problem between governance choice and strategy choice (MASTEN, 1993; NICKERSON, 2001). Despite the simplifications on the theory's perspective and measures to empirical study, we considered that human capital and social capital improved our understanding on governance choice, strategy choice, and performance of the firms.

We agree with the findings of Lovas and Ghoshal (2000) that human capital and social capital influences, or to some extent, determines the strategy choice. Our methods permitted to be specific - highly educated managers have more propensities to pursue a differentiation strategy if contract was chosen to govern the transaction with the buyer. The two proxies for human capital presented distinctive effects. The effects of *Experience*, the proxy for human capital with stronger and positive effect on performance, was in agreement with earlier studies on family as a repository of valuable firm-specific knowledge (HATCH; DYER, 2004; KOR; MAHONEY, 2004; KOR *et al*, 2007) that support better use of resources (MAHONEY; PANDIAN, 1992) and accurate estimations from judgments (MASTEN, 1993). However, *Education*, although weakly significant, suggested the contrary.

We disentangled the sources of human capital and social capital, and clearly addressed the family's influence on both. With the respect to the effects of social capital, our findings were consistent with the idea that socially connected people have the advantage of cooperation to establish contracts (UZZI, 1997), refine the terms of the contract and promote its stability

(POPPO; ZENGER, 2002). The other measure of social capital was the duration of relationship that leads to spot-market governance owing to emergence of trust among agents and reduction in the opportunism assumption (CONNER; PRAHALAD, 1996).

With regard to the transaction cost economics approach; we agree with the previous studies that suggested adoption of contracts (or vertical integration) owing to specific investments (JOSKOW, 1987; MASTEN, 1993, 2002). We also supported the previous findings that linked asset specificity to governance choice and strategy choice (NICKERSON *et al*, 2001; GHOSH; JOHN, 1999).

An additional analysis of the interaction variables of human capital and social capital (unreported results) investigated the compensation effects (BOXMAN *et al*, 1991; COLEMAN, 1988), for instance, whether a lack on experience inherited from family could be compensated by investments on formal education or social ties. However, the results were not conclusive, despite the complexity to handle multiple equations and the control for endogeneity.

We extended our contribution to the farm organization by providing insights for the decisions of resource allocation, strategy positioning, and governance choice in the context of family farms (FLÖREN, 2002). Yet, some questions remain open on the optimal choices for family farms. For instance, what is the optimal resource allocation (KEEFE; BURK, 1967) to family and farm? Is this allocation promising to turn the family-farm into a large-scale corporation, despite seasonality (ALLEN; LUECK, 1998) effects?

Recurring questions in strategic management literature rely on how to explain performance differences and how to predict which firms switch the strategy positioning and resource allocation. The aim of this study was to address the importance of intangible resources, such as human capital and social capital to improve the understanding of governance, resource, and strategy decisions. Indeed, we believe that this is a productive framework to predict these decisions, as the individual theoretical perspectives find it difficult to explain.

5   CONCLUSION

The occurrence of disequilibrium in the economic environment imposes adjustments on a firm's strategy and allocation of resources. The literature on strategy predicts the firm's reaction to disequilibrium according to the existing set of resources, the competitive forces in the industry, and the transaction-cost economizing mechanisms. However, these perspectives assume homogeneous managerial ability, skills, and experience; in other words, there is no room for the entrepreneur. In fact, investigations on entrepreneurs rely on the risk-taking behavior, judgment processes related to cognitive mental models and other concepts that are not directly observable. This doctoral dissertation proposes a framework based on human capital and social capital dimensions to connect the isolated strategy and entrepreneur theory. Moreover, the framework links the family business theory for its importance in the formation of human capital and social capital of firms.

The education endowment is the best resource that families have to transmit to future generations. Our results supported that entrepreneurs rely on their education to evaluate new scenarios and take action. To our knowledge, this was the first empirical evidence for Schultz's concept of entrepreneurial ability. We took advantage of an institutional change that caused market disequilibrium, from which we observed the variation on the firm's reactions. Indeed, high education level is observed to enhance the probability to switch strategies. Furthermore, the education effects proved to be important on our cross-case analysis and on quantitative estimations.

Investigations on experience inherited from family background provided new insights into family business theory. Family background largely contributes to inertia in firm strategies. While previous studies associated the accumulation of knowledge by families as a valuable resource, our findings suggested contingent effects. Though family background decreased the probability to pursue a differentiation strategy, the interaction of family background with enduring relationships enhanced the probability to switch strategies. In addition, family background enhanced the performance of those entrepreneurs who pursued a differentiation strategy. This finding suggested that families might accumulate valuable knowledge about

firm resources; however, the firm will only take action if the generational resistance is overcome.

Family social capital largely contributed to predict entrepreneurial action. First, current relationships with one particular agent or existing connections diminish the will to change the strategy. Second, once the entrepreneur decided to switch strategies, the social capital largely contributed to an early adoption. With regard to social capital, there exist an important apprehension when combining the sociological perspectives with the economizing rationale. The number of social connections increased the propensity to switch strategies, suggesting that socially connected people take the advantage of cooperation to establish contracts, refine its terms, and promote its stability. Enduring relationship supported the emergence of trust among agents, which enabled the decision to make specific investments even in the absence of protection arrangements.

The coffee production context was appropriate for this study for several reasons. In terms of entrepreneurship, we could identify the origin of differentiation strategies, which was observed to be associated with an institutional change in 1989. Furthermore, the analysis of owner-managed family farms ameliorated concerns on agency costs due to separation of ownership and control, and simplified the analysis of social capital when the family's social capital tended to be the same as the organizational social capital. Although scholars should be aware of the limitations with regard to generalizing our findings in the coffee production context, we provided a theoretical framework and insights to evaluate many owner-managed family organizations.

Family business is the predominant form of organization in the agricultural sector. A large proportion of family farms are faced with uncertainty from rising input prices, volatile markets, and increasing competition. However, investments in education enhance the entrepreneurial ability of family farmers to pursue strategies with better potential for earnings. According to our findings, families largely contribute to future generations by providing education endowments, rather than the transmission of accumulated experience. Moreover, the family social capital represents a valuable prompt available resource to increase efficiency; for instance, it largely contributed to early adoption of new strategies. While education endowments are inheritable, social capital transmission imposes challenges owing to the path dependency characterizing social relationships.

Becker (1964) and Schultz (1961) extensively discussed the optimal level of public investments on schooling of the population and the implications on families, minorities, and economic development. The implications on public policy also included the social capital; in fact, the concept was initially addressed in 1916 by Lynda Hanifan, when she investigated the local support and policy implications on rural schools. We followed the recommendation of Knight *et al* (2003), who stated that educated farmers act as a role model for those without education. Therefore, public policies should take advantage of this externality effect, in addition to support from the social community, to ensure better diffusion of technology and innovations.

This research contributed to the literature of family business by providing a theoretical framework to evaluate the positive contributions of family to business. The resource-based view provided a helpful framework to evaluate the strong or weak contributions of families in the formation of human capital and social capital. Education and schooling endowments largely contributed to engagement in new opportunities and strategies to pursue better earnings, and these findings correlated with those observed by Becker (1964) and Schultz (1961). However, the other proxy for human capital, the experience from family background, is observed to present an opposite effect. Thus, inertia effects from family deserve further investigation, which is a potential contribution to the investigations on the negative effects of family on business, in addition to the already-investigated nepotism and costs to overcome internal conflicts.

Human capital and social capital connected the Family Business and Entrepreneurship research fields. For instance, the social capital comprising social connections and enduring relationships nurtured by families largely influenced the early adoption of entrepreneurial action. Moreover, families' optimizing behavior on education enhanced the entrepreneurial ability of family members. Indeed, this research was carried out as a response to the need for empirical studies on Schultz's concept of entrepreneurial ability, as noted by Klein and Cook (2005). This research attempts to be the first to empirically support the notion that a highly educated entrepreneur takes action in face of disequilibrium, while poorly educated individuals are unable to evaluate the new scenario or lack the ability to allocate effectively.

The literature on triad decisions of governance, resource, and strategy (NICKERSON *et al*, 2001; GHOSH; JOHN, 1999) was complemented by human capital and social capital theory. Indeed, by assuming the homogeneous skills, abilities, and experiences of managers, the field of strategic management research has neglected the role of entrepreneurs. However, this research has integrated both perspectives to predict which firms may switch the strategy positioning and resource allocation, and offered explanations with regard to performance differences. For instance, the proposed framework predicted that highly educated entrepreneurs have greater propensity to pursue a differentiation strategy if a contract was chosen to govern the transaction with the buyer. Human capital explained the variation of differentiation strategy performance among the entrepreneurs; in this sense, the experience of family background largely contributed to achieving higher price premium for specialties over the price for commodity production. The findings also corroborated the transaction-cost arguments of contractual arrangements adoption to prevent expropriation of specific investments (KLEIN *et al*, 1978; WILLIAMSON, 1985). In addition, we claim that future researches may investigate the relationship of human capital and governance choice. Although we are not aware of previous studies providing empirical evidence for this issue, we presumed that human capital would contribute to the assessment of hazards that would directly justify the adoption of arrangements to prevent losses from opportunistic behavior (WILLIAMSON, 1999; MARCH, 1978). We encourage more studies to the debate the competing explanations of economic and sociological literatures. Although we found evidence suggesting that social capital provided resources (BURT, 1997; NAHAPIET; GHOSHAL, 1998; ADLER; KWON, 2002) and reduced transaction costs (CONNER; PRAHALAD, 1996; SHANE; STUART, 2002), we have limited data to investigate the causal relations or even predominant effects, which future research may clarify.

Human capital and social capital contributed to better understanding on how families positively influence the business; provided helpful insights on how entrepreneurs deal with uncertainty to engage in new activities; and complemented the investigation on which a firm switches its positioning with respect to the triad decisions of governance, resource, and strategy. The results and findings of this doctoral dissertation had limitations owing to the empirical context or measurement constraints. However, alternatives to ameliorate these concerns have also been presented, and future research efforts are encouraged. This dissertation has discussed about the extent of human capital and social capital dimensions that have been neglected in the broad strategy literature and has provided empirical evidence to

reinforce its importance. To our knowledge, this was the first research to theoretically debate and empirically test these arguments based on an integrated overview of family business, entrepreneurship, and strategic management theory.

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APPENDIX

Appendix 1 – Authorization to deliver the doctoral dissertation written in English

Appendix 2 – Coffee Prices: Brazil farm-gate price versus US wholesale price versus US retail price

Appendix 3 – Price transfer coefficient: farm versus wholesale prices

Appendix 4 - Coffee production area (hectares) by Federal State

Appendix 5 – Specialty coffee certification comparison

Appendix 6 – Visit to Grossi family – Fazenda Alto Cafezal

Appendix 1 – Authorization to deliver the doctoral dissertation written in English

FEAUSP

São Paulo, 28 de agosto de 2009

Interessado: **Fabio Matuoka Mizumoto**

Assunto: Aceitação da tese redigida em inglês

Prezado Senhor:

A Comissão de Pós-Graduação desta Faculdade, reunida em 25 de agosto de 2009, analisou sua solicitação e de sua orientadora e decidiu aprovar o depósito da tese redigida em inglês.

Vale lembrar que as regras para depósito desta Faculdade deverão ser seguidas. O "Manual para Formatação e Edição de Dissertações e Teses" encontra-se disponível no www.fea.usp.br (alunos da pós, dissertação e tese).
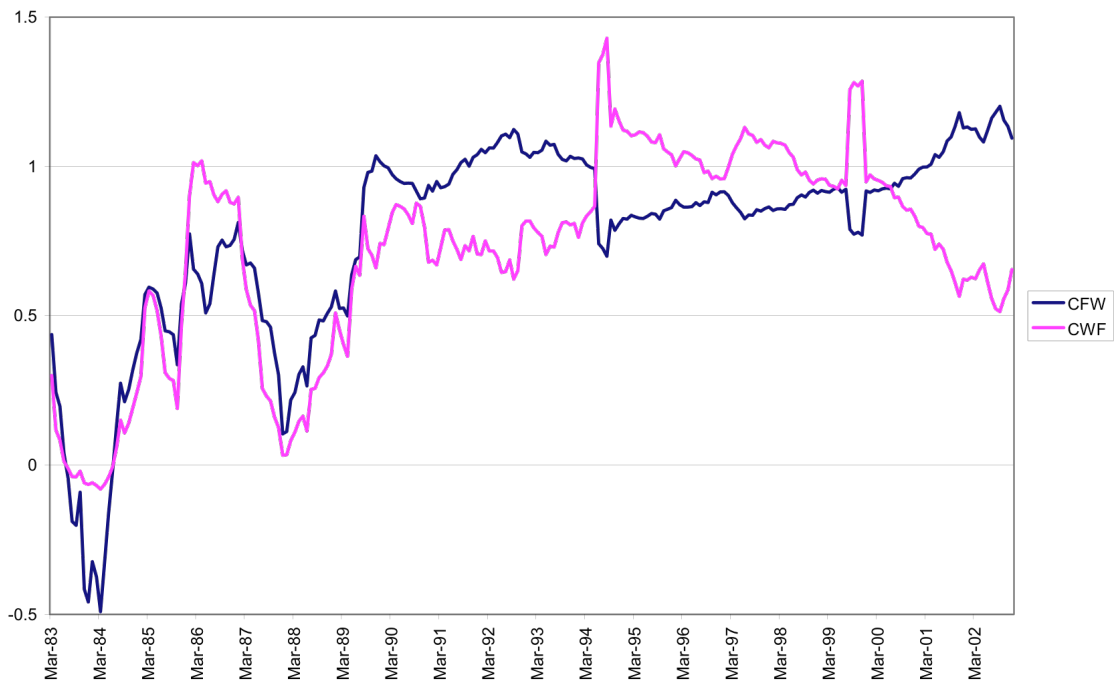
Atenciosamente,

Prof. Dr. *Gilberto de Andrade Martins*
Presidente da Comissão de Pós-Graduação

c/c Professora Doutora **Maria Sylvia Macchione Saes**

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Appendix 2 – Coffee Prices: Brazil farm-gate price versus US wholesale price versus US retail price

Source: Mehta and Chavas (2004)

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Appendix 3 – Price transfer coefficient: farm versus wholesale prices
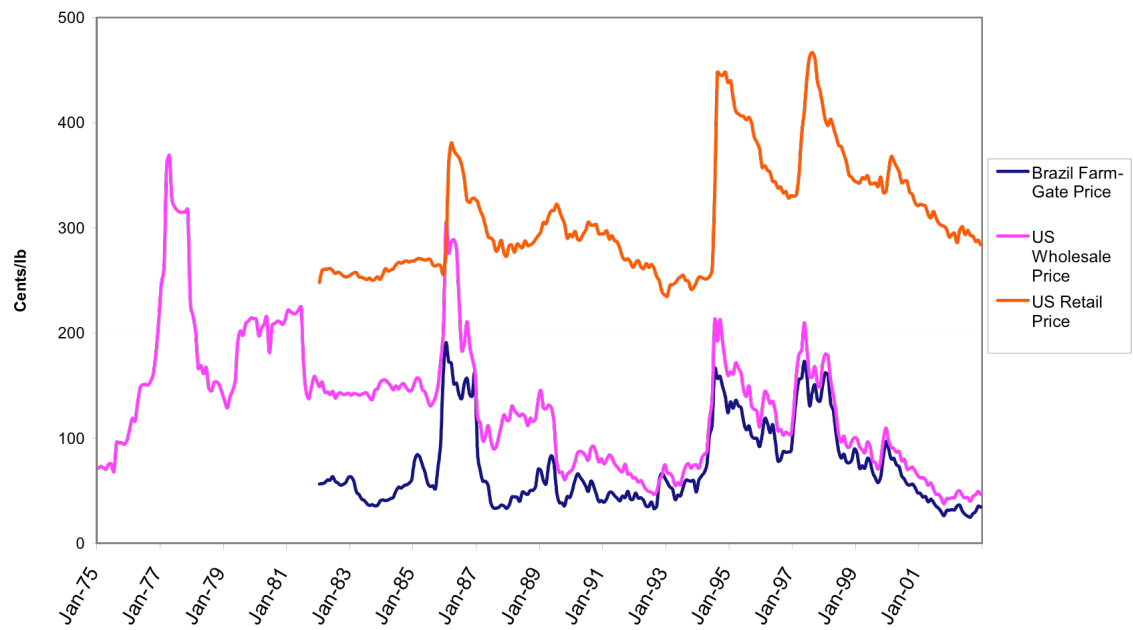
Source: Mehta and Chavas (2004)

Appendix 4 - Coffee production area (hectares) by Federal State

Federal State	Area (hectares)
Minas Gerais	1.048.172
Sul/Centro-oeste	551.471
Triângulo/Alto Paranaiba/Noroeste	158.753
Z.Mata/Jequitinhonha/Mucuri/R.Doce/Central/Norte	337.948
Espírito Santo	489.592
São Paulo	188.495
Paraná	96.920
Bahia	125.033
Rondônia	155.972
Mato Grosso	15.007
Pará	12.917
Rio de Janeiro	13.562
Outros	24.125
BRASIL	**2.169.795**

Source: ABIC – Associação Brasileira das Indústrias de Café (2008)

Appendix 5 – Specialty coffee certification comparison

Certification / Verification	Organic	Fair Trade Certified	Rainforest Alliance	Utz Certified	4C Common Code
Mission	Create a verified sustainable agriculture system that produces food in harmony with nature, supports biodiversity and enhances soil health.	Support a better life for farming families in the Developing world through fair prices, direct trade, community development and environmental stewardship.	Integrate biodiversity conservation, community development, workers' rights and productive agricultural practices to ensure comprehensive sustainable farm management.	UTZ CERTIFIED's mission is to achieve sustainable agricultural supply chains, where: Producers are professionals implementing good practices which enable better businesses, livelihoods and environments; The Food industry takes responsibility by demanding and rewarding sustainably grown products; Consumers buy products which meet their standard for social and environmental responsibility.	Achieve global leadership as the baseline initiative that enhances economic, social and environmental production, processing and trading conditions to all who make a living in the coffee sector.
Market Focus	All markets	All markets	Global, with special emphasis on N. America, Europe, Japan, and Australia	Mainstream and Specialty	Mainstream market (ambition: vast majority of coffee market)
Scope of the Program	Organic Farming and processing practices.	Economic and environmental sustainability for farmers and their communities. Minimum price and social premium to cover costs of production and community-elected development	Sustainable farm management in most holistic sense – social, environmental, economic and, ethical improvements are the cornerstones of the program.	Sustainability: Economic performance through productivity and farm professionalism; environmental standards to preserve flora fauna shade, buffer zones; Worker Health and	Exclude worst practices and continuously increase the sustainability of coffee production and processing in the economic, social and environmental dimension.

		programs. Organic premium for organic coffees. The model empowers small- farmers organized into democratically run cooperatives to compete on a global scale.		Safety.	
Price Differential to Farmers	Yes. Premiums versus non organic certified coffees are paid to farmers.	Yes, this is the heart of the program. All purchases must be at or above the Fairtrade Minimum Price as set by FLO (price varies by coffee type and origin). If the market price is higher than the Fairtrade Minimum Price, buyers shall pay the market price. Additionally, buyers must pay a social premium of USD$0.10¢ per pound and, when applicable, a minimum Organic Differential of USD$0.20¢ per pound.	Yes. Differential is negotiated between buyer and seller.	Yes. Differential set by the markets. Feedback on market information of differentials and demand per quality provided to members.	No influence on mainstream market price mechanisms: Free negotiation between 4C members. Price should reflect coffee quality and sustainable production practices.
Fees to Producers	Vary by certifier. Inspection costs drive up costs but are being reduced and increased coverage provided by regional in- country certifiers.	Cost of auditing, re- inspection fees	Cost of auditing plus an annual fee based on farm size. Group certification options improve access for smallholders. Auditing fees often paid for by buyers.	Zero from UTZ, auditing fees only	Yearly membership fees for all actors along the chain according to size and position in chain: producer's fee is smallest. Free verification and trainings

Fees to Buyers	Certification costs vary by certifier. Fees ranging from $700 to $3000/year.	Importers are not charged a licensing fee, but they must pay at least the Fair Trade Minimum and provide up to 60% of pre-harvest financing when requested by cooperatives. Licensed roasters pay TransFair USA USD$0.10¢ per pound to cover the cost of audits, consumer awareness campaigns and FLO affiliation.	Currently, no fees charged to buyers of Rainforest Alliance CertifiedTM coffee. Many buyers support the participating farms	USD$0.012 per pound to "first buyer", passed on through supply chain to final buyer	Yearly membership fees for all actors along the chain according to size and position in chain: roaster's fees are the highest.
Price Premium Associated with Code	Average price differentials of USD $0.255¢ (+/-) per pound are paid to producers.	Minimum price of USD $1.25* per pound plus a $0.10¢ per pound social premium. An extra USD$0.20¢ premium if the coffee is also certified organic. *Fair Trade Minimum for washed Arabica. Prices vary by coffee type.	The Rainforest Alliance Certified TM program does not set prices, but honors the farmers' right to manage their own business affairs and gives them the tools required to succeed in the global marketplace. Farmers earn more through gains in efficiency, improved quality and controlling farm costs.	2008: USD$0.07¢ per pound average for Arabica: $56 per metric ton for Robusta, based on quality and market drivers	No; individual negotiation possible between 4C members

Source: SCAA – Specialty Coffee Association of America - Sustainability Committee (2009)

Appendix 6 – Visit to Grossi family – Fazenda Alto Cafezal