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Noura s. Metawa
University of New Orleans, nmetawa@uno.edu

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The Impact of Governance Mechanism on Performance and Survival of Entrepreneurial Firms

A Dissertation

submitted to the graduate faculty of the
University of New Orleans
in partial fulfillment of
the requirements for the degree of

Doctor of Philosophy
in
Financial Economics

by

Noura Metawa

B.A. Mansoura University, Egypt, 2009
M.S. Finance, Mansoura University, Egypt, 2012
M.S. Financial Economics, University of New Orleans, USA, 2016

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Dedication

To my husband, Dr. Mohamed Elhoseny, without whom this would not have been possible. Your endless support, love, and praise have filled my heart for eternity.

To Prof. Saad Metawa, my dad, who instilled in me the value of education, good work ethics and going above and beyond to give me the best life possible. To my mom who taught me the value of life and empowered me through my learning journey.

To my children, Ahmed and Sofia, who I want to encourage to always follow your dreams.

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Abstract

The dissertation consists of two essays.

The first essay studies governance structures and their effectiveness for start-up companies and their survival. We utilize data from the Kauffman Survey, which tracks a sample of firms from their inceptions through their first eight years of existence. We hypothesize and find evidence that a startup's governance system affects its survivability as well as its performance. We show that controlling for the firm size and the industry, cross-sectional variations in the performance of the start-up firms can be explained by governance variables; the presence of one or more independent board member on the board, the separation between the person holding the CEO position and the chair of the board. From the startup survival perspective, we show that the presence of one or more independent board member(s), the separation between CEO and board chair, and external funding are effective factors that promote a start-up's longevity.

The second essay studies the direct and indirect relations between Governance and firm survival and performance through Entrepreneurial Orientation. Entrepreneurial orientation (EO) is defined as the attributes, including innovativeness, autonomy, risk-taking attitude, proactiveness, and competitive aggressiveness, that a business organization displays at the time of entry. Several researchers have studied the linkage between EO and organizational performance as well as the survival rate of new firms and find conflicting results. Reasons for the contradictory results might very well be the way the researchers have defined the EO attributes and the data source they use which is based on subjective responses. In the hopes of reducing inconsistent results, we propose that it is the governance factors that influence the performance and survival of these firm via mediating role of entrepreneurial orientation. Governance factors remove the definition as well as data measurement problems. By using the 8-year longitudinal data of 4928 startups, we show that governance system significantly impacts a start-up's performance and survival via entrepreneurial orientation.

JEL Classification: M13, L26, G34

Keywords: Entrepreneurial Finance; Privately-held Companies; Governance Structure; Start-up survival; Entrepreneurial Orientation; Startup Performance.

CHAPTER 1
Governance Structure and the Startup survival

1.   Introduction

Jensen and Meckling (1976) argue that a privately-held firm managed by a single owner will not face agency costs because the conflicts of interest between the owner and the manager do not exist. Although a private firm is more vulnerable when it is owned by multiple owner and managers, the problem can be resolved efficiently as the owners practice economically more rational behavior. Thus, according to Jensen and Meckling (1976), the formal governance mechanism of a private firm is not only unnecessary but may detract the firm from having efficient performance. According to Uhlaner, Wright, and Huse (2007), the shift from the founder-owner managed firm to a multiple ownership structure in most cases will result in immediate demands for more monitoring which in turn, requires more formal governance mechanisms.

Schulze, Lubatkin, Dino, and Buchholtz, 2001 (hereafter SLDB) argue that private owners' preferences are expressed in economic as well as non-economic terms. According to SLDB, a major source of the non-economically motivated behavior is altruism which "allows the individual to simultaneously satisfy both altruistic (other-regarding) preferences and egotistic (self-regarding) preferences" (p. 102). They empirically test this proposition through a sample of family firms. SLDB (2001) suggest that a good corporate governance system is needed for private firms as well to reign in the non-economic preferences that are likely to negatively affect a firm's performance.

In conclusion, the two theories offer opposite implications regarding the role of governance for private firms: Jensen and Meckling (1976) propose that a governance system is not only unnecessary but may lead to reduction in the firm's value, while SLDB (2001) suggest that a governance system is not only necessary but augments a private firm's value. We contribute

to this debate by examining the effect of the governance system on the survivability and performance of US start-up firms.

Despite the presence of a wide range of governance studies and its impact on larger firms' performance, the governance patterns of newly created firms remain relatively unexplored. A principal reason for the paucity of research has been the unavailability of reliable data. These firms are not required to disclose financial information since they do not offer debt or equity to the public. In addition, since a startup firm is not subject to SEC regulations, it is not required to maintain any specific governance structure (for example, the presence of a Board of Directors overseeing firm management). Opportunely, a recent and unique data set, the Kauffman Firm Survey (KFS) provides data, among other items, on ownership structure, board structure, and the ways start-ups meet their financing needs. The KFS dataset is the largest longitudinal study conducted on new businesses1. The KFS is a panel dataset that spans eight years and allows us to study the governance behavior of newly created firms by examining the control choices that small firms make when they launch and ask whether any patterns of governance emerge from the data that may impact such firms' survival. The primary issue that we address in this paper is the impact, if any, of the governance system on a start-up firm's performance and survivability.

Our study builds upon the analysis conducted in Lowrey (2009), which examined the dynamics and characteristics of startup firms from the Kauffman Firm Survey from 2004 until 2006. Our study provides an extension to Lowrey (2009) by using start-up firm data over a longer period of time as well as focusing on the governance factors that affect a firms' survival through a series of logit regressions. Our results indicate that the presence of one or more independent board member(s), the separation between CEO and board chair, and external funding are effective factors that promote a start-up's longevity. We find that cross-sectional variations in the ROE of the start-up firms can be explained by governance variables. We do find that firm governance structure impacts firm performance, and this holds with our robustness checks that

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[1] About the Kauffman Firm Survey (KFS). (n.d.). Retrieved March 05, 2018, from https://www.kauffman.org/microsites/kfs/about-the-kfs

measure firm performance through Return on Assets (ROA), sales growth, and employment growth. Our results contribute to the understanding of what types of firm governance systems effect firm performance and survival. These findings are beneficial to start-up managers, investors, and organizations that foster entrepreneurship, such as business incubators and accelerators.

The remaining of this paper is structured as follows. First, it reviews the relevant literature for governance in startup firms before developing hypotheses on how the different governance patterns impact the startup survival and performance. Next, it describes the research design of the empirical study. Thereafter, we present and explain the results. Finally, we summarize and conclude.

2. Governance of Start-up Firms

2.1. Governance and Firms Survival

The literature on organization demographics highlights that newer and smaller firms are less likely to survive (Carroll and Hannan, 2000). While start-up firms cannot do much in terms of their age, but they can avoid the liability of smallness through rapid growth. Past growth provides a firm to increase the likelihood of future survival. Thus, firms benefit from a sustained growth pattern. Growth and survival analyses have been relatively well covered in the literature on firm dynamics. Both areas share common variables such as size, experience, and owners' characteristics just to cite a few. Gibrat's Law states that a firm's growth rate is independent of its size. Previous studies provide empirical evidence that suggests that Gibrat's Law may be wrong or at least wrong to a certain extent (Kumar 1985, Evans 1987, Hall 1987).

A limited number of models have been developed to explain these age effects. Cooley and Quadrini (2001) adds a theoretical model of size (equity) and age effects on firm's dynamics and provides a significant contribution to the literature on firm dynamics. They contribute to the literature by simultaneously taking both firm size and age dependency into consideration, after they introduce financial frictions into the model. Cooley and Quadrini state that debt matters and

causes of firm failure. The model depicted by Cooley and Quadrini predicts that newer firms tend to take on more debt which increases the profit volatility, thus increasing firm failure.

The age hypothesis cannot be tested directly using the KFS since all firms are part of the same cohort together with the KFS being a relatively new dataset. Instead, it is tested for indirectly through the debt hypothesis. Financial conditions, which include debt, equity, and leverage have also been a vital part of a firms' dynamics in the literature. KFS offers a full range of data for every life stage of the financial health of the company. Also, Cooley and Quadrini find that leverage that is described as debt over equity decreases with the firm's size since smaller firms take on more debt. When relating these findings to firm size and survival literature (probability of exit decreases with size), we can assume that the probability of a firm exit should decrease with additional leverage. Aẙstebro and Bernhardt (2003) study the initial financing conditions of the firm effects on survival. They argue that probability of survival is increasing with initial external debt, although a negative correlation exists between initial bank loans and survival. On the other hand, Huynh et al. (2008) suggest that a firm's exit probability is increasing with leverage. Thompson (2005) examines how selection bias can occur when assessing firm quality, and provided a framework for tackling this issue. Because of this, I test for the effects of quality using years of experience in the industry, as suggested by Thompson (2005).

2.2. Board of Directors

Board composition is determined using Weisbach's (1988) trichotomous classification scheme. A director who is a full-time employee of the company is classified as an inside director. A director who is neither an employee nor has extensive dealings with the company is referred to as an outside director. All other directors, who are not full-time employees but have relationships with the company (for example, family relationships, consultants) are designated as "gray" directors or "affiliates." Director classification is determined by reading biographies in annual reports, analyzing related party transactions, and by inference from the definition of family firm.

The agency theory and resource dependency theory provide fundamental support for an appropriate BOD to control agency cost and provide valuable resources to the firm in the form of

finance and capital, links to key suppliers, customers, and significant stakeholders (see Jackling & Johl, 2009). Forbes and Milliken (1999) suggest that a larger board has advantages such as sharing of management and expertise and the capacity to oppose any illogical decisions made by the CEO while Jensen (1993) argues that a larger board creates agency costs, gives rise to free rider problems, delays in making good decisions and in actively supervising the firm (see also Goodstein, Gautam &Boeker, 1994; Shaw, 1976).

Daily and Dalton (1992) find that founders or entrepreneurial firms may use outside directors to obtain desired firm growth. Fiegener, Brown, Dreux, and Dennis (2000) find that small private firms adopt outside directors primarily to appease external owners and utilize the services and resource benefits offered by outside directors. Dutia (2014) supports startups to establish boards into their governance structure, because "A well-functioning board's activities can result in a well-timed exit strategy that creates an opportunity to sell the company, make an Initial Public Offering (IPO), or further scale and grow the business. Gabrielsson (2003) contends that the benefits of SMEs establishing a board of directors and further research is needed to provide a deeper understanding of how a board of directors can contribute to the SME performance. The involvement and formal structure of the board is vital for the board's ability to perform effectively Gabrielsson and Winlund (2000).

Fried, Bruton, and Hisrich (1998) provide evidence supporting a relationship between board involvement and performance. Johannisson and Huse (2000) state that the "professionalization" of the board enforces managerialism. Lynall, Golden, and Hillman (2003) propose a theory that, "board composition and, consequently, firm performance are a reflection of both the firm's life cycle stage and the relative power of the CEO and external financiers at the time of founding." Politis and Landström (2002) discuss how firms must balance corporate governance with the ability to access required resources and maintain control to be able to make fast strategic decisions.

2.3. Ownership

Brunninge, Nordqvist, and Wiklund (2007) find that governance variables relate to ownership, the board of directors, and management have an impact on strategic change and

emphasizes the importance of analyzing the interaction effects of these governance mechanisms. Schulze, Lubatkin, and Dino (2002) examine private firm's agency problems, which may stem from the firm's ownership structure. Uhlaner, Floren, and Geerlings (2007) focus on the governance structure of privately-held firms and finds that owner commitment has an impact on firm performance, which supports stewardship theory and organizational social capital theory. Owners have more of a personal stake in the success of a firm, while a professional manager incentive is limited to what is stated in the employment contract (Alcorn, 1982). Nordqvist (2005) proposes that three processes shape ownership in family firms are, "channeling ownership through formal intentions and vision, channeling ownership through informal interaction, and channeling ownership through symbolic embodiment in the strategic work. Daily and Dollinger (1992) survey a sample of private firms that are professionally-managed or family firms and find that family firms tend to be smaller and younger than professionally-managed firms.

The decision of what business entity a start-up will become provides a framework for ownership as well as the liabilities the business owners will be liable for. Malch, Robinson, and Radcliffe (2006) explore the different types of legal issues that the various business types are subject to and find that certain issues are relevant to all new business ventures, certain issues are relevant to specific types of ventures, and specific business categories. The business entity decision may be influenced by the entrepreneur's attorney or accountant. Blair and Marcum (2015) discuss both the advantages and disadvantages associated with each of the main business entities that start-ups become and provide partial evidence that supports that attorneys and accountants advise entrepreneurs to select their business entity based on liability yet also provide evidence that accountants focus on advising entrepreneurs more on the basis of firm taxation. We examine what types of business entities survive by examining Sole Proprietorships, Limited Liability Corporations (LLCs), S Corporations, C Corporations, and Partnerships.

2.4. Debt Financing sources

Research argues that personal guarantees and personal collateral must often be posted to secure financing for startups (Moon, 2009; Avery, Bostic and Samalyk, 1998; Mann, 1998). Robb and Robinson (2010) show that the heavy reliance of new firms on external debt especially bank

loans underscores the importance of well-functioning credit markets for the success of nascent business activity as the financing agreements of bank loans Promote higher quality firm performance and more sustainable growth. Because startups rely so extensively on the outside debt as a source of their capital, they are especially more sensitive to changes in the bank lending conditions, perhaps more than suggested based on accounts of entrepreneurial finance that focus on the importance of informal capital.

3.   The Relation between Governance and Performance

Some governance features may be motivated by incentive-based economic models of managerial behavior. Broadly speaking, these models fall into two categories. In agency models, a divergence in the interests of managers and shareholders causes managers to take actions that are costly to shareholders. Contracts cannot preclude this activity if shareholders are unable to observe managerial behavior directly, but ownership by the manager may be used to induce managers to act in a manner that is consistent with the interest of shareholders. Grossman and Hart (1983) describe this problem. Adverse selection models are motivated by the hypothesis of differential ability that cannot be observed by shareholders. In this setting, ownership may be used to induce revelation of the manager's private information about cash flow or her ability to generate cash flow, which cannot be observed directly by shareholders. A general treatment is provided by Myerson (1987). In the above scenarios, some features of corporate governance may be interpreted as a characteristic of the contract that governs relations between shareholders and managers. Governance is affected by the same unobservable features of managerial behavior or ability that are linked to ownership and performance.

The board processes have a substantive impact on firm performance, and meetings are necessary to execute board task effectiveness (Zahra and Pearce, 1989). When the board of directors meets frequently, they are more likely to discuss the concerned issues and monitor the management more effectively, thereby performing their duties with better coordination and in harmony with shareholders' interests (Lipton and Lorsch, 1992). Consistent with this notion,

Conger et al. (1998) suggested that board meeting time is an important resource for improving the board effectiveness and, thus, better decision-making. But, there are also costs attached to board meetings, which include expenses such as managerial time, travel expense, directors' fees and other resources (Vafeas, 1999). Both Lipton and Lorsch (1992) and Jensen (1993) discuss the limited time available for meetings may not be sufficient for enough dialogue among directors. Notably, Jensen (1993) argues that boards should be relatively inactive and are required to become active only in the times of crisis.

There is also an ongoing debate on CEO duality and firm performance, but the results from the empirical studies are conflicting (Rechner and Dalton, 1991; Boyd, 1995; Balinga et al., 1996; Coles and Hesterly, 2000; Elsayed, 2007; Bhagat and Bolton, 2002). Bhagat and Bolton (2002) have found the CEO–Chair separation to be significantly positively correlated with firm's operating performance. Boyd (1995) also indicated that CEO duality actually improves firm performance. Rechner and Dalton (1991) also supported separation of CEO and chair positions, as the firms opting for independent leadership outperformed the firms relying on CEO duality. Some authors found no significant difference between the firms with CEO duality and those without it (Daily and Dalton, 1997; Dalton et al., 1998). In fact, Daily and Dalton (1997) suggested that separation of CEO and board chair positions results in a misdirected effort.

In addition, ownership control and institutional ownership are also important determinants of firm performance. An example is Agyemang and Castellini (2015), which focuses on how ownership control and board control systems operate in corporate firms in emerging economies, such Ghana, and assume that these systems are an integral part for enhancing good corporate governance practices in emerging countries. Kyereboah-Coleman (2007) find that institutional shareholding enhances market valuation. In contrast, Mashayekhi and Bazaz (2008) investigate the role of corporate governance indices on firm performance (earnings per share, return on assets [ROA], return on equity [ROE]) and find that the there is no positive association with the presence of institutional investors and firm performance. Overall, the empirical findings on corporate governance and firm performance have been very mixed. On the one hand, several

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studies estimated that better corporate governance significantly enhances firm performance (Brickley and James, 1987; Weisbach, 1988; Rosenstein and Wyatt, 1990; Byrd and Hickman, 1992; Lee et al., 1992; Brickley et al., 1994; Hossain et al., 2000; Chung et al., 2003; Drobetz et al., 2003; Beiner et al., 2004; Brown and Caylor, 2006; Black et al., 2006). On the other hand, some others (Bathala and Rao, 1995; Hutchinson, 2002; Bauer et al., 2004) reported an inverse relationship between corporate governance and firm performance. There are also studies which reported no significant relationship between corporate governance and firm performance (Hermalin and Weisbach, 1991; Park and Shin, 2003; Prevost et al., 2002; Singh and Davidson, 2003; Young, 2003).

4. Survival vs. Performance

The growth and profitability path of firms of new firms (startups) is vital for management theory (Gimeno, Folta, Cooper, & Woo, 1997). Since in Penrose (1959), who develop the original "theory of the growth of the firm" which states that the managerial resources play a pivotal role, where several factors affect growth. Certain factors, such as population density or market forces, are considered to be external to the organization (Hannan & Freeman, 1989; Porter, 1980), while others factors are internal, such as capabilities, culture, or strategy (Teece, Pisano, & Shuen, 1997; Boeker, 1997; Garnsey, 1998; Zahra, Ireland, & Hitt, 2000; Canals, 2000, chapter 3). In research on entrepreneurship, previous studies examine the characteristics that are specific to entrepreneurial firms (Shane & Venkataraman, 2000).

Both the organizations and economics literature offer rationales for previous growth having the ability to increase the probability of future growth. This forms the growth momentum hypothesis. The literature on organization demographics highlights that firms which are newer and smaller in size are less likely to survive (Carroll and Hannan, 2000). Industry statistics from Dun & Bradstreet (1998) also support the liabilities of newness and smallness. While startups cannot do anything about their age, they can avoid this liability of small size by rapid growth. Past growth will enable a firm to increase the likelihood of their future survival. Therefore, firms will benefit from a sustained growth pattern. The momentum that is implicit in this continuous

growth pattern can be based on different sources of advantage. Some of these advantages are external to the organization and related to both the density and institutional characteristics of the market niche that the firm is competing in (Hannan and Freeman, 1989). New firm growth may be based on the choice of the right niche where it can be successful. The organizational literature also indicates that forces internal to the organization may drive sustained growth. Internal capabilities (Teece, Pisano, & Shuen, 1997) can provide new firms with the conditions needed to grow and succeed.

A strand of literature promoting experience as an important contributor to survival has been developed. Research has tackled two main areas pertaining to firms' experience. First, past studies find the effects on owners' pre-entry experience to be a persistent determinant of performance in the years following entry. Second, the more related the experience is to the industry in which the firm operates the more valuable it is. Thompson studies both effects in the shipbuilding industry, and his findings reinforce Klepper and Simons' (2000) suggestion that firms with more experience in related fields of the industry perform better than de novo entrants with less experience.

5.   Methodology

5.1. Hypothesis

Based on the previous study review, we test the following two hypotheses:

H1: Controlling for the firm's size and industry affiliation, the better the governance, the better a firm's performance.

We test the impact of these governance variables on startup performance measured by its return on equity (ROE) as;

The governance factors included in this paper are:

- *Independent Director on the Board:* The dummy takes on a value of 1 if the firm's board has an independent member, it is 0 otherwise. According to Daily and Dalton (1992), founders of entrepreneurial firms should use outside directors to obtain desired firm growth and increase their survivability chances

- *Duality - Separation between CEO and Board Chair*: The dummy takes on a value of 1, if the two positions are held by two different persons, it takes on a value of 0 otherwise.
- Robb and Robinson (2010) show that the heavy reliance of new firms on *external debt* especially bank loans promote higher quality firm performance and more sustainable growth.
    - Bank Business Loan or Line of Credit as % of Total Debt
    - Government Loans as a % of Total Equity
    - Bank Loan + Line of Credit % of Total Loan
    - Owner +Insider Loan % of Total Loan

On the second hypothesis, we test the impact of these governance variables on startup performance measured by its survival as follow:

H2: Survived startups adopt more efficient governance patterns than non-survived startups.

Using the governance variables mentioned below and the startup survival as a binary variable of 1 or 0. The second hypothesis tests the impact of the governance structure on the startup survival.

We use the same governance variables mentioned above and survival as the dependent variable.

5.2. Variables

Governance variables: The following variables are the main ones used to measure governance in the startup firms: ownership structure, board structure, and financing sources.

- Ownership structure is a dummy variable that takes on the value of 1 if the firm is owned by a single owner (i.e., proprietor) and zero if the firm is owned by multiple owners;
- Board structure is proxied by the presence of one or more independent directors on the board. Outsiders on the board of directors is any director who is unrelated to the family. We use a dummy variable to capture the essence of this variable: it takes a value of 1 if the board has an independent director, zero otherwise.

- For sources of financing, we employ several proxies:
    - Ratio of debt to equity= Measured using the median leverage of all firms and ranking firms as above and below the median.
    - Financing via owners
    - Financing via bank loan
    - Financing via government finance; and
    - Financing via venture capital
- Firm Size: The impact of the firm's size on the performance and survival has been significantly proven in many studies. As the greater size give the firm greater opportunity for economies of scale which in turn lowers the cost of capital and improve the performance. The firm size may also have a negative impact on the performance, because the bigger the size; the greater is the information asymmetry which leads to more agency costs and less performance efficiency. The effect of the firm size on the performance can either be positive or negative. Based on Cooley and Quadrini (2001) who added a theoretical model of size (equity) and age effects on firm's dynamics, firm size and age provide a significant impact on its performance and survival. We measure asset size by the logarithm of total assets of the firm, and the number of full-time employees for robustness.
- Industry dummy: As the Kaufmann survey is more focused on the tech industry, and as the firm performance depends on the nature of its activity. The dummy variable takes a value of one if a firm operates in the technology sector, and zero otherwise.

5.3. The Model

The first hypothesis H1 is tested into two ways; the first is using the direct regression of performance on the other variables,

$$ROE_{ij} = b0j + b1j\ OWN_i + b2j\ DUAL_i + b3j\ BOARD_i + b4j\ OWNEQ_i + b45\ GOVEQ_i + b6j\ VEN_i + b7j\ BANK_i + b8j\ LOG(Size)_i + b9j\ Industry_i + \varepsilon_{i,j}$$

The second approach used to test the second hypothesis is the 2sls regression based on ROE is adopted as a measure of performance. However, extant literature highlights potential endogeneity problems surrounding regression analyses of corporate governance mechanisms and performance. Thus, Agrawal and Knoeber (1996) propose the use of 2SLS regressions in the context of endogenously determined corporate governance mechanisms. The method involves, first, estimating ordinary least squares (OLS) predictions for each endogenous regressor. Second, each of the predictions is regressed on ROE together to determine consistent estimates for each endogenous regressor. This method allows for the interdependence and alternative use of all of the governance mechanisms.

To test H2, an analogous method to that of Agrawal and Knoeber is applied to a restricted subsample that includes only the survived firms. A 2SLS regression is estimated by regressing five endogenous corporate governance variables on ROE. Predictions for each of the endogenous independent variables is estimated from the following equations:

First stage regression:

$$OWN_i = \beta_0 + \sum_{j \neq OWN}^{1} \beta_j Var_{ij} + \beta_8 STDEV_i + \beta_6 SIZE_i + \beta_7 IND_i + \varepsilon_{ij}$$

$$DEBT_i = \beta_0 + \sum_{j \neq DEBT}^{1} \beta_j Var_{ij} + \beta_8 STDEV_i + \beta_6 SIZE_i + \beta_7 IND_i + \varepsilon_{ij}$$

$$BOD_i = \beta_0 + \sum_{j \neq BOD}^{1} \beta_j Var_{ij} + \beta_8 STDEV_i + \beta_6 SIZE_i + \beta_7 IND_i + \varepsilon_{ij}$$

$$DUAL_i = \beta_0 + \sum_{j \neq DUAL}^{1} \beta_j Var_{ij} + \beta_8 STDEV_i + \beta_6 SIZE_i + \beta_7 IND_i + \varepsilon_{ij}$$

$$LEV_i = \beta_0 + \sum_{j \neq LEV}^{1} \beta_j Var_{ij} + \beta_8 STDEV_i + \beta_6 SIZE_i + \beta_7 IND_i + \varepsilon_{ij}$$

Second stage regression:

$$ROE_i = \beta_0 + \beta_1 OWN_i + \beta_2 DEBT_i + \beta_3 BOD_i + \beta_4 LEV_i + \beta_5 DUAL_i + \beta_6 SIZE_i + \beta_6 IND_i + \varepsilon_{ij}$$

where the first five independent variables (excluding the constant term) are the predicted values from regressions 1 through 5. If the coefficients in the equation of second stage regression are

significant, the null in H2 will be rejected: there is evidence to suggest that survived firms adopt suboptimal corporate governance structures. In other words, any significance in the model's independent variables that persists into the second stage is inconsistent with wealth maximization. That is, significant positive coefficients suggest that increasing the use of the governance mechanism would improve performance, whereas negative coefficients suggest that reducing the use of the governance mechanism would lead to performance improvements. If the mechanism is used optimally, it should not be significantly related to performance in the second stage (its coefficient should not be significantly different from zero).

To test the second hypothesis of governance variables effect on survival, we use model that is similar to the one used in Anderson et al. (1998) in the context of diversification and corporate governance. The first set of regressions is as follows:

$$\text{SURVIVAL}_{ij} = b_{0j} + b_{1j}\,\text{OWN}_i + b_{2j}\,\text{DUAL}_i + b_{3j}\,\text{BOARD}_i + b_{4j}\,\text{OWNEQ}_i + b_{45}\,\text{GOVEQ}_i$$
$$+ b_{6j}\,\text{VEN}_i + b_{7j}\,\text{BANK}_i + b_{8j}\,\text{LOG(Size)}_i + b_{9j}\,\text{Industry}_i + \varepsilon_{i,j}$$

where the subscript i denotes the firm- level observation for each variable in 2004 to 2011 and Governance represents each of the possible corporate governance variables that may be used as dependent variables (ownership, board composition, Leverage and debt financing source).

6. Data

We utilize Kauffman Survey Data which tracks a sample of firms from their inceptions through their first eight years of existence. This survey is conducted each year from 2004 until 2013. The data includes information on business characteristics, firm strategy, innovation, organizational structure, and active-owner-operator demographics. Active-owner-operators are defined as a firm owner who, "provides regular assistance or advice regarding the day-to-day operations of the business, rather than providing only money or occasional operating assistance"

(Farhat and Robb, 2014). Several studies have used KFS data to further understand new firm characteristics, such as analyzing the financing of new firms (Coleman and Robb, 2009; 2011; Cole and Sokolyk, 2013), comparisons of different types of new firms (Welsh, Desplaces, and Davis, 2011), and firm survival (Robb and Reynolds, 2009).

Robb et al. (2009) and Ballou et al. (2007) provide thorough descriptions of the sampling process used to construct the initial sample. They report that the target population for the survey was all new businesses that were started in the 2004 calendar year in the United States (representing activity in each of the fifty states plus the District of Columbia). The objective of the KFS dataset is to track the progress of their sample from the target population, with the specified target population being new firms. A business started in 2004 is defined as a "new, independent business that was created by a single person or a team of people, the purchase of an existing business, or the purchase of a franchise." Businesses are excluded if they had an EIN, Schedule C income, or had paid state unemployment insurance or federal Social Security taxes before or after 2004. One challenge with developing a sample of startups in the United States is that there is no national registry of startups.

The sampling frame for the KFS is based on the Dun & Bradstreet (D&B) database and restricted to businesses (or enterprises) that are reported by D&B as starting in 2004. This database is a compilation of data from various sources, including credit bureaus, state offices that register some new businesses, and companies (e.g., credit card and shipping companies) that are likely to be used by all businesses. Importantly, this is not the same database as the D&B business registry available on the Internet; the sample from which our data are drawn contains vastly greater coverage of firms in the United States.

The KFS data includes an oversample of high-tech firms; thus, all of our analyses use sampling weights that adjust the sample to be representative of the frame from which the sample was drawn. The practice of oversampling the main subgroup of a population in survey data in reaction to a more limited size of a subgroup for a focused interest on a specific subgroup is

commonly used in surveys that focus on policy-making. The reason why the Kauffman Survey has oversampled high-technology and medium-technology businesses is for improving stand-alone analysis and comparative analysis precision as well as subgroup cross-sectional and longitudinal analysis precision (Farhat and Robb, 2014). The objective of creating the sample of the KFS was to interview 5000 firms that were created in 2004. From the 251,282 businesses in the Dunn and Bradstreet database, KFS chose a stratified sample of 32,469 firms. Subsequently, MPR was capable of finding the location of 29,526 firms from the sample of 32,469 and 16,156 of these firms finished the baseline survey. Of these, 11,228 firms were illegible, which left 4,928 firms in the final sample.

7.   Results

7.1. Descriptive Statistics

We report in Table 1 the summary statistics for the KFS firms through the sample survey from 2004 till 2011 showing the summary for business characteristics and governance variables. Panel A reports the business characteristics. Panel A shows the business characteristics results show that the average size of the firms in the sample is $8062 while the maximum is $113,220, In addition, the average ROA ratio in the sample is 5% with a maximum of 21%. While the highest ROE is 5% with a maximum of 23%.

On panel B we report the descriptive statistics of governance variables. The average percentage of Government Loans is 46% while bank loan averages at 39%.

Table 1: Summary statistics

Table 1 reports the summary statistics for the study variables; business characteristics and governance variables, through the sample survey from 2004 until 2011 showing the mean, standard deviation, minimum and maximum.

	Startup Firms			
	Mean	**Std. Dev.**	**Min**	**Max**
Panel A: Business Characteristics				
Employment Growth %	37	12	3	91
Sales Growth%	34	19	-21	82
Size in $	8,062	11,887	3190	113,220
ROE%	4.0	6.8	-8.2	21
ROA%	5.0	8.3	-7.3	23

Panel B: Governance Variables

Government Loans %	26	31	11	55
Bank loan %	49	50	6	67
credit Line %	44	30	7	78
Owner + insider loan %	84	56	34	98

In Table 2, we report the descriptive statistics for the firms survived through the sample survey from 2004 till 2011 showing the firms that survived, exit and or sold every year. Failed firms are the ones going into financial distress by the end of the year. From the total of 4928 firms starting in 2004, 5.2% of them exited the market in their first year, 5% the following year, 3.8% in 2007, 4.3% in 2008. We can conclude that more than 18% of the firms exited the market in their first four years of their life, and more than 7% of them were sold or merged in the same period. The balance of the start-ups failed.

Table 2: Startup survival by Year from 2004 till 2011

Table 2 reports the summary statistics for the firms survived through the sample survey from 2004 until 2011 showing the firms that survived, exit and or sold every year. We consider a firm as a 'failed firm' if the firms go into financial distress by the end of the year.

	Survived	Exit	Sold or merged	Failed
2004	4928	0	0	0
2005	3998	260	43	627
2006	3390	247	36	325
2007	2915	188	36	251
2008	2606	213	25	71
2009	2408	141	23	34
2010	2126	133	20	129
2011	2007	109	11	0

Figure 1 shows the sample distribution of the start-up firms based on the ownership structures. As shown in Figure 1, partnership structure has the highest number of firms with of independent directors on its board, as well as owners' finance, bank loans, and venture capital finance. While the single owner firms appear to be the highest in terms of government finance.
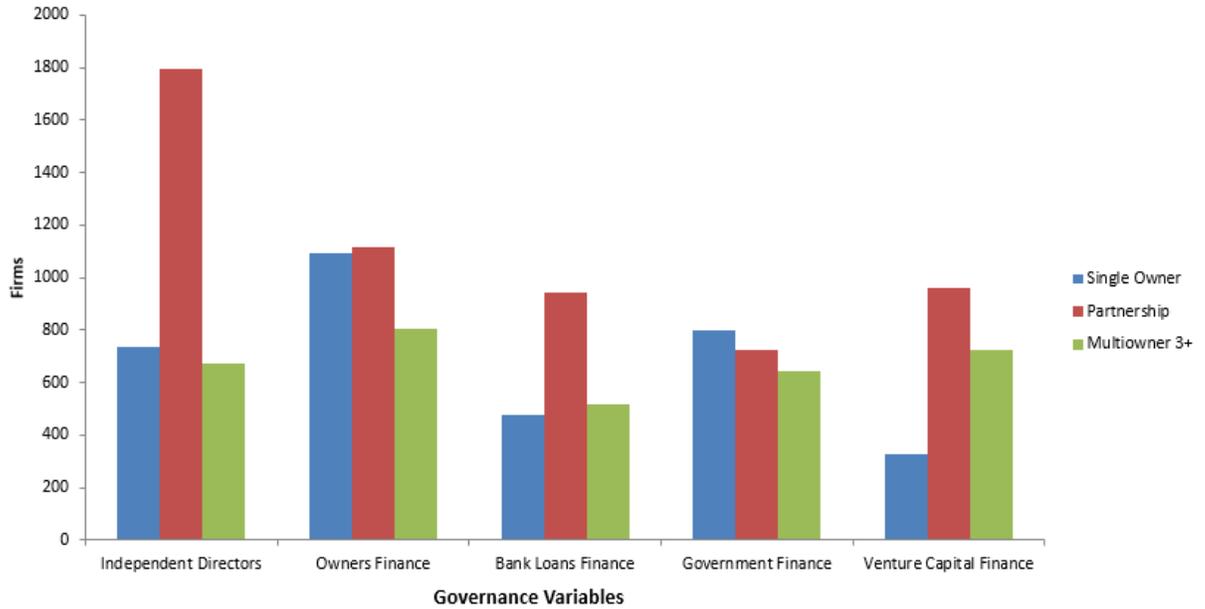
Figure 1: governance variables based on ownership structures

Table 3 provides the survival rate of start-ups based on the legal form of a firm's organization. Both in terms of five years survival and seven years of survival, a partnership organization survives the most, followed by proprietorships. LLCs are the least survived. The survival rate is the highest for the partnership at 86.89 and 73.78 for five and seven years respectively. While it is the lowest for the limited liability corporations for 37.98 and 24.42 for five and seven years respectively.

Table 3: Survival rate by the form of organization

Table 3 reflects the survival rate of start-ups based on the legal form of a firm's organization, which are Sole Proprietorships (Sole Prop), Limited Liability Corporations (LLCs), C Corporations (C Corp), S Corporations (S Corp), and Partnerships (which include). The survival variables are the number of firms that have survived for five years (#Survived (5 years)), the percentage of firms that have survived for five years (%Survived (5 years)), the number of firms that have survived for seven years (#Survived (7 years)), and the percentage of firms that have survived for seven years (%Survived (7 years)).

	Sole Prop	LLC	C Corp	S Corp	Partnership (Gen Part +LTD part)
#Start-ups-	1635	1556	440	1039	206
#Survived (5 years)	982	591	225	531	179
%Survived (5 years)	60.06	37.98	51.36	51.1	86.89
# Survived (7 years)	922	380	131	422	152
%Survived (7 years)	56.39	24.42	29.77	40.61	73.78

7.2. Sources of Financing by Organizational Form

Table 4 shows how different types of start-up organizations fund their investments. As expected, the principal source of financing of the start-ups is equity provides by the owners or their immediate family. Equity funding is used by 88% of partnerships compared to 78% of C corporations. The second most important source is the debt provided by owners and family members of the owners. This type of funding is most popular with the proprietorship type organization: about 56% of this category rely on internal debt. The equity provided by the equity seems to be the third most popular funding method.

Table 4: Sources of Financing by Organizations of Start-ups

Table 4 shows how different types of start-up organizations fund their investments. The legal form of a firm's organization, which are Sole Proprietorships (Sole Prop), Limited Liability Corporations (LLCs), C Corporations (C Corp), S Corporations (S Corp), and Partnerships (including general partnership and limited partnership). The variables for financing sourcing are Owner Equity (Owner EQ), Insider Equity (Insider EQ), Owner Debt, Insider Debt, Business Bank Loan, Personal Bank Loan by Owners, Government Business Loan (Gov Business loan), Government Loans (Gov Loans), Venture Capital, and Business Equity (Business Eq).

	Sole Prop (%)	LLC (%)	C Corp (%)	S Corp (%)	Partnership (Gen Part + LTD part) (%)	Total
Firms	1635	1556	440	1039	206	4917
Owner EQ	1308 (.80)	1211 (.78)	331 (.75)	851 (.82)	181 (.88)	3,733
Insider EQ	40 (.024)	30 (.019)	15 (.034)	24 (.023)	13 (.063)	122
Owner Debt	614 (.376)	379 (.244)	40 (.091)	209 (.201)	23 (.112)	1,256
Insider Debt	291 (.178)	456 (.293)	112 (.255)	203 (.195)	22 (.107)	1084
Business Bank Loan	107 (.065)	231 (.148)	31 (.070)	69 (.066)	9 (.043)	447
Personal Bank Loan by owners	93 (.057)	91 (.058)	28 (.064)	87 (.084)	15 (.073)	314
Gov Business loan	51 (.032)	48 (.031)	5 (.011)	26 (.025)	14 (.068)	144
Gov Loans	229 (.14)	140 (.089)	72 (.164)	97 (.094)	28 (.136)	566
Venture capital	41 (.025)	37 (.024)	25 (.057)	34 (.033)	6 (.029)	143

Business Eq	2	19	9	15	5	50
	(.001)	(.012)	(.02)	(.014)	(.024)	

Table 5 shows the correlation between the study variables as well as the means and standard deviation. The correlation is positive between all the variables except for the correlation between chair/CEO separation and ownership loan as a percentage of the total loan.

Table 5: Pairwise correlations

Table 5 shows the pairwise correlation between the study variables including; Sole Proprietorship, board independence, chair/CEO separation, Venture capital percentage of total equity, bank loan and line of credit, owner insider loan, ROE, ROA, employment growth, sales growth, and industry.

Variables	1	2	3	4	5	6	7	8	9	10	11
PROPREITORSHIP											
BOARD INDEPENDENCE	0.30**										
CHAIR/CEO SEPARATION	0.16**	0.24**									
VENTURE CAP % OF TOTAL EQ	0.19**	0.15**	0.28**								
GOV LOANS % OF TOTAL EQ	0.14**	0.22**	0.17**	0.12**							
BANK LOAN+LINE OR CREDIT % OF TOTAL LOAN	0.25**	0.18**	0.09**	0.16**	0.15**						
OWNER+INSIDER LOAN % OF TOTAL LOAN	0.22**	0.15***	-0.13**	0.19**	0.02**	0.23**					
ROE	0.31**	0.13**	0.07**	0.18***	0.32**	0.03**	0.14**				
ROA	0.09**	0.05**	0.19**	0.16**	0.06**	0.11**	0.12**	0.10**			
Sales Growth	0.07***	0.13**	0.25**	0.05**	0.20**	0.08***	0.11**	0.10**	0.9***		
Employment Growth											
Industry	0.12**	0.14**	0.22**	0.04**	0.09***	0.13**	0.11**	0.18**	0.07**	0.12**	

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7.3. Governance system and ROE

Table 6 shows how the governance system affects a start-up's performance as measured by ROE. The governance measures are as reported above. Specification 3 of the regressions is of primary relevance to our study. It shows that controlling for the firm size and the industry, cross-sectional variations in the ROE of the start-up firms can be explained by governance variables presence of one or more independent board member on the board, separation between the person holding the CEO position and the person holding the board chair position, greater presence of venture capital, and greater use of bank loans. The presence of government loans, however, does not affect a start-up's ROE, perhaps because of poor monitoring activities provided by the government.

Table 6: Governance system and Startup performance (ROE)

Table 6 shows how the governance system affects a start-up's performance as measured by ROE. The governance measures are Board Independence, Chair/CEO Separation, Venture Cap Percentage of Total Equity, Government Loans Percentage of Total Equity, the Sum of Bank Loan and Credit Line or Credit Percentage of Total Loan, and Owner and Insider Loans Percentage of Total Loan. Specification 3 of the regressions show that controlling for the firm size and the industry, cross-sectional variations in the ROE of the start-up firms can be explained by governance variables.

	SPEC 1	SPEC 2	SPEC 3
PROP=1	.032	.099	
OTHER ORG=0	(0.403)	(.112)	
SIZE (LOG OF ASSET)	.097	.223***	.093
	(0.140)	(.009)	(.156)
INDUSTRY*	.077*	.043***	.073*
	(0.093)	(.002)	(.099)
BOARD	.072**		.076***
INDEPENDENCE	(.010)		(.001)
CHAIR/CEO	.742***		.744***
SEPARATION	(0.001)		(.001)
VENTURE CAP % OF TOTAL	.072***		.70**
EQUITY	(.001)		(.021)
GOV LOANS %	.542		.556
TOTAL EQUITY	(0.193)		(.203)
BANK LOAN + LINE	.069***		.066**
OR CREDIT % OF TOTAL LOAN	(.002)		(.019)
OWNER + INSIDER LOAN % OF	.009***		.088***
TOTAL LOAN			
	(.001)		(.001)
CONSTANT	-.302		-.218
	(0.182)		(.102)
YEAR FIXED EFFECTS	YES	YES	YES
R2	.896	.293	.667

7.4. Governance system and Survival

Table 7 presence in 4 specifications the factors that affect the survival length of start-ups. Once again, Specification 3 is the most relevant to this study: it shows that controlling for the size and industry, the presence of one or more independent board member(s), the separation between CEO and board chair, and external funding are effective factors that promote a start-up's longevity.

The results show that governance variables significantly explain startup survival. Board independency, CEO/chair separation positively significantly impact survival, while the form of organization (Sole proprietorship) does not affect survival. In addition, Government Loans turns to have no significant effect on survival, where all other finance sources explain survival significantly. The R square is the highest for the fourth specification explaining 86% of the startup survival.

Table 7: Governance System and Survival of Start-ups

Table 6 presents in 4 specifications the factors that affect the survival length of start-ups. This table presents LOGIT results, where a surviving firm takes on a value of 1, the firm that failed takes on a value of 0. Specification 3 shows that controlling for the size and industry, the presence of one or more independent board member(s), the separation between CEO and board chair, and external funding are effective factors that promote a start-up's longevity.

	SPEC 1	SPEC 2	SPEC 3	SPEC 4
SIZE	.821**	.899*	.982*	1.012
	(.039)	(.082)	(.089)	(.169)
INDUSTRY	.799***	.891***	.782*	.882***
	(.008)	(.001)	(.088)	(.000)
PROP=1 / OTHER ORG=0		.611		.620
		(.124)		(.219)
BOARD INDEP			.822**	.810
			(.051)	(.201)
CEO/CHAIR SEPA			.989***	.980***
			(.000)	(.000)
BANK FIN+LINE OF CREDIT AS % OF TOTAL DEBT			.993***	.971***
			(.001)	(.000)
OWNER+INSIDER DEBT AS A % TOTAL DEBT			- .972***	- .917***
			(.004)	(.001)
GOVT EQ AS A % TOTAL EQUITY			.819*	.872
			(.094)	(.134)
VENTURE CAP AS A % OF TOTAL EQUITY			.773**	.730***
			(.017)	(.009)
Constant	.891**	.988**	.812	.891
	(.013)	(.009)	(.132)	(.182)
Year Fixed Effects	YES	YES	YES	YES
R^2	.301	.320	.599	.856

7.5. Robustness Check

To conduct our robustness checks, we first run a logistic regression with three specifications that examine how a firm's governance system affects a start-up firm's performance. We measure firm performance through Return on Assets. Our governance measures include Board Independence, Chair/CEO Separation, Venture Cap Percentage of Total Equity, Government Loans Percentage of Total Equity, the Sum of Bank Loan and Credit Line or Credit Percentage of Total Loan, and Owner and Insider Loans Percentage of Total Loan. Specification 3 of the regressions show that controlling for the firm size and the industry, cross-sectional variations in the ROA of the start-up firms can be explained by governance variables. These results are reflect in Table 8.

We then examine the effect of a firm's governance system on its performance through sales growth. We use the same governance measures as in Table 8. We find that Specification 3 of the regressions shows that controlling for the firm size and the industry, cross-sectional variations in the Sales growth of the start-up firms can be explained by governance variables. These results are reflected in Table 9. Similarly, we examine the effect of a firm's governance system on performance through employment growth., incorporating the same governance measures as in the models used in Table 8 and 9. We find that Specification 3 of the regressions shows that controlling for the firm size and the industry, cross-sectional variations in the Employment Growth of the start-up firms can be explained by governance variables.

Table 8 shows how governance system affects a start-up's performance as measured by ROA. The governance measures are Board Independence, Chair/CEO Separation, Venture Cap Percentage of Total Equity, Government Loans Percentage of Total Equity, the Sum of Bank Loan and Credit Line or Credit Percentage of Total Loan, and Owner and Insider Loans Percentage of Total Loan. Specification 3 of the regressions show that controlling for the firm size and the industry, cross-sectional variations in the ROA of the start-up firms can be explained by governance variables.

	SPEC 1	SPEC 2	SPEC 3
PROP=1	.039	.099	
OTHER ORG=0	(0.554)	(.112)	
SIZE (LOG OF ASET)	.021*	.034***	.084**
	(0.073)	(.001)	(.016)
INDUSTRY*	.124*	.056***	.082*
	(0.081)	(.003)	(.083)
BOARD	.044**		.033**
INDEPENDENCE	(.023)		(.011)
CHAIR/CEO	.922***		.821***
SEPARATION	(0.003)		(.002)
VENTURE CAP % OF TOTAL	.055***		.922**
EQ	(.002)		(.031)
GOV LOANS %	.669		.734
TOTAL EQ	(0.211)		(.982)
BANK LOAN+LINE	.043***		.034**
OR CREDIT % OF TOTAL LOAN	(.001)		(.023)
OWNER+INSIDER LOAN % OF	.010***		.064***
TOTAL LOAN	(.001)		(.001)
Constant	-.244		-.332
	(.208)		(.434)
Year Fixed effects	YES	YES	YES
R^2	.772	.332	.506

Table 9: Governance system and Sales growth

Table 9 shows how governance system affects a start-up's performance as measured by Sales Growth. The governance measures are Board Independence, Chair/CEO Separation, Venture Cap Percentage of Total Equity, Government Loans Percentage of Total Equity, the Sum of Bank Loan and Credit Line or Credit Percentage of Total Loan, and Owner and Insider Loans Percentage of Total Loan. Specification 3 of the regressions show that controlling for the firm size and the industry, cross-sectional variations in the Sales growth of the start-up firms can be explained by governance variables.

	SPEC 1	SPEC 2	SPEC 3
PROP=1	.043	.099	
OTHER ORG=0	(0.778)	(.882)	
SIZE (LOG OF ASET)	.189*	.023***	.022
	(0.092)	(.001)	(.211)
INDUSTRY*	.065	.721*	.372*
	(0.198)	(.224)	(.019)
BOARD	.022**		.009***
INDEPENDENCE	(.008)		(.000)
CHAIR/CEO	.032**		.033***
SEPARATION	(0.019)		(.001)
VENTURE CAP % OF TOTAL	.065***		.922**
EQ	(.003)		(.122)
GOV LOANS %	.597		.342
TOTAL EQ	(0.227)		(.129)
BANK LOAN+LINE	.032***		.021**
OR CREDIT % OF TOTAL LOAN	(.004)		(.009)
OWNER+INSIDER LOAN % OF TOTAL LOAN	.001***		.043***
	(.000)		(.001)
Constant	-.665		-.697
	(0.360)		(.301)
Year Fixed effects	YES	YES	YES
R^2	.667	.109	.439

Table 10: Governance system and Employment Growth

Table 10 shows how governance system affects a start-up's performance as measured by Employment Growth. The governance measures are Board Independence, Chair/CEO Separation, Venture Cap Percentage of Total Equity, Government Loans Percentage of Total Equity, the Sum of Bank Loan and Credit Line or Credit Percentage of Total Loan, and Owner and Insider Loans Percentage of Total Loan. Specification 3 of the regressions show that controlling for the firm size and the industry, cross-sectional variations in the Employment Growth of the start-up firms can be explained by governance variables.

	SPEC 1	SPEC 2	SPEC 3
PROP=1	.192	.099	
OTHER ORG=0	(0.451)	(.112)	
SIZE (LOG OF ASET)	.102*	.035***	.228
	(0.102)	(.003)	(.430)
INDUSTRY*	.093	.029***	.092*
	(0.012)	(.002)	(.089)
BOARD	.072**		.055***
INDEPENDENCE	(.010)		(.003)
CHAIR/CEO	.912***		.810***
SEPARATION	(0.001)		(.001)
VENTURE CAP % OF TOTAL	.105**		.921**
EQ	(.011)		(.012)
GOV LOANS %	.744		.754
TOTAL EQ	(0.231)		(.423)
BANK LOAN+LINE	.009***		.043***
OR CREDIT % OF TOTAL LOAN	(.000)		(.009)
OWNER+INSIDER LOAN % OF TOTAL LOAN	.291		.088***
	(.599)		(.001)
Constant	-.104		-.145
	(0.223)		(.334)
Year Fixed effects	YES	YES	YES
R^2	.791	.330	.439

8. Discussion

The goal of this paper was to investigate the influence of governance mechanisms on entrepreneurial firm performance when such firms face different financial uncertainty and instability. To achieve this, we used a longitudinal collected data for nearly 5000 firm during their first 8 years of existence starting from 2004. Our research shows that the type of ownership (sole Properietorship, partnership, etc.) is not significantly related to the firm performance, while independent board and duality did show a significant positive effect on start-up performance. On the other side, different sources of finance (Venture capital, bank loan, owner loan) did show a direct positive significant relationship with start-up performance. This result support the reasoning that venture capitalists would bring a unique set of resources to the firm, which in turn impact its performance positively (Bruton, Fried & Hisrich, 1997).

Surprisingly, our results show insignificant effect for government loans (SBA) on the firm performance. An explanation of our results can be found as a small portion of the firms in our sample use SBA loans. Firms in the sample are also are primarily in high-tech industries and in turn may look to venture capital and other forms of financing that support high-growth firms. In addition, lending institutions may not be able to properly assess the risk of loans for start-ups, which creates issues with information asymmetry (Stiglitz and Weiss, 1981). This may inhibit high-tech start-ups from obtaining loans and thus look for alternatives for raising capital. Lastly, SBA loans comprise a small fraction of the loans that are issued to small businesses in the U.S. (Brown and Earle, 2015).

Regarding the impact of governance mechanisms on survival, our results show a direct positive impact of duality and independent board members on the startup survival. Our results support (Scholes, et al., (2013), Daily and Dalton (1992), Daily and Dalton (1993)) that board independency reduces failure rate in startup firms. Outside directors can provide monitoring knowledge and experience that contributes to survival (Anderson & Reeb, 2004). This result is opposite to (George et al., 2005), they attributed the negative impact of outsiders' board members on survival as risk taking behavior may be increased as outside directors have greater sector expertise and work

under pressure from outsider investors to enhance the performance, which may reduce the likelihood of survival.

9. Conclusion

Jensen and Meckling (1976) and SLDB (2001) offer two opposing theories on the necessity and effectiveness of governance system for private firms: Jensen and Meckling (1976) propose that a governance system is not only unnecessary but may lead to reduction in the firm's value, while SLDB (2001) suggest that a governance system is not only necessary but augments a private firm's value. We contribute to this debate by examining the effect of governance system on the survivability and performance of the US start-up firms. In this paper, we present evidence in support of SLDB (2001).

When examining the survival rates of the various forms of organization, which include Sole Prop, LLC, C Corporation, S Corporation, and Partnership, with partnerships having the highest survival rates. When we examine the effect of firm governance structures on firm performance, our results reflect that controlling for the firm size and the industry, cross-sectional variations in the performance of the start-up firms can be explained by governance variables; presence of one or more independent board member on the board, separation between the person holding the CEO position and the chair of the board. When focusing on startup survival, we find that the presence of one or more independent board member(s), the separation between CEO and board chair, and external funding are effective factors that promote a start-up firm's longevity. Our robustness checks test the effect of firm governance structures on firm performance measured by return on assets, sales growth, and employment growth. The results from these robustness checks support our hypotheses. We conclude that our results provide evidence that firm governance structures impact performance measured by ROE, ROA, sales growth, and employment growth. Our findings may be useful for organizations that support start-up ventures, such as business incubators and accelerators, start-up lenders, and venture capitalists.

The firms included in KFS are skewed towards technology firms. Tracking a wider range of start-up firms over a longer period of time will add to the current literature. Also, examining the characteristics of the entrepreneur in terms of altruism would be a great direction for future research.

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CHAPTER 2
Exploring the Nexus Between Governance, Entrepreneurial Orientation, Performance, and

Survival: Evidence from U.S. startups

1. Introduction

Entrepreneurial Orientation (EO) describes how a firm's entrepreneurial attributes (i.e., innovativeness, autonomy, risk-taking, proactiveness, and competitive aggressiveness) shape its performance as well as survival. In recent years, EO has invited a significant amount of empirical work, with the main focus being on the effect of entrepreneurial decision making on the performance and survival of a private enterprise. The conclusions of this line of research have often been conflicting: some researchers find that there is a strong relationship between EO and performance, implying that a small business that starts with a strong EO will perform better than the one that does not (see, for example, Hult, Snow & Kandemir (2003), while others report lower or even no significant correlations between EO and performance (George, 2011).

The principal reason for the conflicting results might lie in the exclusion of factors that potentially moderate the EO-performance relationship, especially external factors such as environmental conditions (Barney 1991, Aragón-Sánchez and Sánchez-Marin 2005). More recently, a new branch of research has evolved proposing that the EO performance relationship is contingent on the degree of governance, specifically, the degree of separation in ownership, management, and control (Casillas & Moreno, 2010; Madison et al., 2014; Sirmon & Hitt, 2003).

Kraus, Rigtering, and Hughes (2012) raise a question about the direct relationship between individual EO dimensions and performance in small business enterprises. Top managers and directors also tend to have the longer business horizon in decision making, and this may influence their pursuit of first-mover advantages through innovation, proactiveness, and risk-taking (Casillas & Moreno, 2010; Zahra et al., 2004; Zellweger & Sieger, 2012). Lumpkin and Dess (1996) additionally argue that the dimensions of EO may vary independently, which implies that the effect of individual dimensions of EO on firm performance should be emphasized.

The main focus of this paper is on the building of relationships between governance and the individual dimensions of EO, giving systematic explanations for the moderating effects of individual dimensions of EO on the governance–performance relationship in transitional economies. More specifically, from empirical results about different moderating effects of the dimensions of EO on the governance–performance relationship, we offer more fine-tuned insights on this issue. Moreover, although existing studies have suggested that entrepreneurial movements can help first movers to acquire both temporary and sustained high performance (Zahra, 1991, Zahra & Covin, 1995Wiklund, 1999, and Zahra & Covin, 1995), empirical evidence on this proposition is still limited. This study fills the void by considering longitudinal data to test both the short run and sustaining effects of startup governance on the EO- performance-survival link.

Besides incorporating environmental condition (in terms of governance system), this paper is an improvement as it eschews some shortcomings inherent in the existing EO research. First, researchers differ in their definition of each element of the EO. This paper does not depend on the unambiguous definition of EO attributes. Second, EO factors are derived based on interpretations of response to questions contained in the Kaufman survey. , The responses are subjective and do not lend themselves to quantifiable measures. Governance factors, although obtained from the same survey are straightforward, unambiguous, and, easy to measures. Third, the information on governance factors can be easily obtained independently of the Kaufman's survey.

A major contribution of this paper, therefore, is to present a link between the EO factors and governance factors to identify objective measures that are likely to influence the performance

and survival of an entrepreneur. Another potentially significant contribution of the paper is to weigh in on the continuing debate of whether a good governance system adds to or detracts from the value of a small business. On the one hand, Jensen and Meckling (1976) propose that a governance system is unnecessary (because the conflicts of interest between the owner and the manager do not exist) and as such, it might be value reducing. On the other hand, Schulze, Lubatkin, Dino, and Buchholtz, 2001 (hereafter SLDB) argue private owners' preferences are expressed in economic as well as non-economic terms. According to SLDB, a major source of the non-economically motivated behavior is altruism which "allows the individual to simultaneously satisfy both altruistic (other-regarding) preferences and egotistic (self-regarding) preferences" (p. 102). SLDB (2001) suggest that a good governance system is needed for private firms as well to reign in the non-economic preferences that are likely to have a negative effect a firm's performance.

The paper proceeds along the following lines. Section 2 provides a broad survey of EO literature and how EO might affect a firm's performance as well as its survival. Section 3 develops hypotheses, section 4 for the analysis and results.

2. Literature Survey

Over the last two decades, an increasing amount of research has integrated the areas of EO and private firms (Casillas & Moreno, 2010; Lumpkin et al., 2010; Zahra, 1991). However, earlier studies rarely examine how governance is connected to EO in explaining firm performance. In this section, a) we review the literature on the relationship between EO and firm performance, and survival, b) propose a link between the governance and EO and c) develop testable hypotheses.

2.1. Entrepreneurial Orientation

EO is a strategy-making process that characterizes an organization's entrepreneurship. Prior studies use two major approaches in conceptualizing EO: the composite dimension approach presented by Covin and Slevin (1989) and the multidimensional approach posited by

Lumpkin and Dess (1996). In the composite dimension approach, EO represents a unidimensional construct characterized by innovativeness, risk-taking, and proactiveness. In the multidimensional approach, EO is characterized by innovativeness, autonomy, risk-taking, proactiveness, and competitive aggressiveness (Lumpkin & Dess, 1996). Specifically, innovation keeps firms ahead of their competitors and gains competitive advantages; proactiveness gives firms the ability to present new products and services to the market before their competitors (Wiklund, 1999); while risky strategies lead to a higher long-term mean performance despite some projects failing while others experience short-term success (Wiklund & Shephard, 2005). All these innovation efforts lead to improved financial results for firms.

Miller (1983) argues that an entrepreneurial firm is willing to engage in the innovation of products and technological processes, to provide proactive innovations to pursue first-mover advantages, and to undertake risky ventures. Most past research on EO follows the composite dimension approach, summing across all aspects of EO to create a single variable. But such a unidimensional construct does not adequately represent the various factors involved in entrepreneurial processes and their varying impact on performance outcomes. We agree with Gartner (1985) that the creation of a new business is a multidimensional strategy and we, therefore, utilize the multidimensional approach in our examination of EO in this study.

2.2. EO and firm performance

Many studies in the field of entrepreneurship focus on understanding the relationship between EO and organizational performance because of the belief that firms with strong EO perform much better than those that do not adopt an EO (Covin & Slevin, 1986; Hult et al., 2003; Wiklund & Shepherd, 2003). However, assessing the magnitude of this relationship has yielded mixed results. Some studies report lower correlations or even no significant relationship between EO and performance (Covin, Slevin & Schultz, 1994; Lumpkin & Dess, 2001). These findings convey the important message that is simply examining the direct relationship between EO and performance provides an incomplete picture of this domain.

A few recent studies have shifted some focus to the indirect relationship between EO and performance. Catherine and Wang (2008) propose that learning orientation is one of the missing

links in the EO–performance relationship. Li et al. (2009) use survey data to examine the mediating role of the knowledge creation process. Other studies focus on the role of exploratory capabilities in the relationship of EO and performance (Lisboa, Skarmeas & Lages, 2011). But none of these explorations have paid sufficient attention to governance variables, which is an essential part of entrepreneurship success. Governance can result in sustainable changes in a firm's activities and decision-making process. Effective activities and processes are required to cope with such changes and attain superior performance. Based on this reasoning, we propose that governance pattern, a key concept that describes the control and monitoring of the startup, may be a missing link in the examination of the EO performance relationship.

Conflict research regarding the impact of each of the EO dimensions on firm performance have aroused, according to Kraus, Rigtering, and Hughes (2012) Innovative SMEs do perform better in turbulent environments, but those innovative SMEs should minimize the level of risk and should take action to avoid projects that are too risky. McCann, Leon-Guerrero, & Haley (2001) suggest that family firms that invest in entrepreneurship and innovation have more significant potential for high performance. They found that The positive influence of EO on performance is related to the first-mover advantages and the tendency to take advantages of emerging opportunities implied by EO. Specifically, innovation keeps firms ahead of their competitors and gains competitive advantages; proactiveness gives firms the ability to present new products/services to the market ahead of competitors. According to (Lumpkin & Dess, 1996; Wiklund, 1999) an entrepreneurial firm is willing to engage in the innovation of products and technological processes, to provide proactive innovations to pursue first-mover advantages, and to undertake risky ventures. This, in turn, will elevate their performance.

Autonomy also has been positively proven to impact the firm performance. Employee involvement shapes their understanding of top managers' willingness to facilitate and support entrepreneurial behavior. When coupled with a voluntary acceptance of work discretion and autonomy, the EO of the firm would be expected to be more effective (Hornsby et al., 2002). Kemelgor (2002) argue that there is a strong relationship between EO, measured by its network, and performance, and that team's intra- and extra-industry networks and autonomy influence the performance of new ventures.

Evidence regarding risk-taking and firm performance is conflicted, Kraus, Rigtering, and Hughes (2012) find that the interaction term of risk-taking was significantly but negatively related to SME business performance. Also, proactiveness was directly related to a multidimensional measure of business performance (Kraus, Rigtering, and Hughes, 2012; Becherer and Maurer, 1999). Proactiveness was positively and significantly related to change in sales (growth), while no significant relationship was found with change in profits. Becherer and Maurer (1999) suggested that ''proactive leaders are growing the firm as a strategic approach to the marketplace".

Finally, Martin and Lumpkin (2003) suggest that a new entry that is an imitation of an existing product or service would be considered entrepreneurial if the move implies an aggressive, head-to-head confrontation in the market, as later generations in family firms assume control and focus more on value and profitability than on directly challenging competitors to gain market share, the level of competitive aggressiveness decreases as well as the ability to maintain a market share.

2.3. EO and firm survival

In an environment of rapid change and shortened product and business model life cycles, future profit streams from existing operations are uncertain, requiring businesses to constantly seek new opportunities. Therefore, firms may benefit from adopting EO (Rauch et al. 2009). Partly in contrast to these claims of the pivotal role of EO for organizational success, Success is often defined in broader terms, including nonfinancial performance or the survival of the firm. Research on entrepreneurship in firms that have survived and prospered for long periods of time is divided as to whether these organizations represent a context where entrepreneurship flourishes or is hampered (e.g., Naldi et al. 2007). Entrepreneurship Orientation is seen as critical to firm's success and survival across generations (Kellermanns and Eddleston 2006; Rogoff and Heck 2003; Salvato 2004). It refers to entrepreneurial activities within organizations that are designed to revitalize the company's business and to establish sustainable competitive advantages that help them survive and live longer (cp. Kellermanns and Eddleston 2006; Kuratko et al. 2005; Zahra 1995, 1996).

Regarding innovation impact on small firm survival, Younger and smaller family firms are more likely to be innovative than older, larger family firms and live longer. Furthermore, innovativeness is having greater potential for high performance, if it is driven by comprehensive strategic decision-making and long-term orientation (McCann et al. (2001)). Also, Autonomy is important regarding long-term entrepreneurial performance and survival, Nordqvist et al. (2008) suggest considering autonomy as having both an external (autonomy from stakeholders such as banks, suppliers, customers, and financial markets) and an internal (empowering individuals and teams within an organization) dimension. Hence, literature seems to propose that, while autonomy may be seen as an important factor of corporate entrepreneurship, both internal and external autonomy need to be considered for long-lived firms.

As outlined in the definition of EO, regarding the risk-taking impact on firm success and survival, ambiguous findings of levels of risk-taking in firms may be related to the inconsistent use of definitions and measures (Gomez-Mejia et al. 2007; Morck and Yeung 2003). Martin and Lumpkin (2003) investigate risk regarding investing personal assets and making loans to the business, tolerance of debt, and the importance of increasing profitability. Other authors investigate willingness to innovate (Benson 1991), the variation of performance outcomes (Gomez-Mejia et al. 2007), or debt levels (leverage) as a measure of control risk (Mishra and McConaughy 1999). Drawing on this confusion, Zahra (2005) claims that a broader definition of risk-taking is needed, as it is a complex construct with presumably multiple dimensions.

Across different studies, all firms should be very ''cautious with debt capital'' to avoid the risk of losing control over the company (control risk), the more they financed investments with their cash flow, the better was their survival probabilities (Mishra and McConaughy 1999). We rely on the assumption that lower levels of EO, specifically the more of risk-taking dimension, should endanger organizational survival and prosperity (e.g., Covin et al. 2006; Dess et al. 2003; Wiklund 2006; Wiklund and Shepherd 2005).

Inconsistent findings exist in the literature regarding the relevance of proactiveness in the context of family firms. Nordqvist et al. (2008) argue that family firms are more inclined to be proactive. Lieberman and Montgomery (1988) view proactiveness as the organizational pursuit of favorable business opportunities and can lead to first-mover advantages and higher economic

profits, and long life of the firm. In contrast, Martin and Lumpkin (2003) find that proactiveness does not seem to be a consistent predictor of family firm success (growth and survival), and they were not able to prove that proactiveness decreases with later generations in family firms. Zellweger and Sieger (2010) research the proactiveness in family firms suggesting that the firm dynamic pattern regarding the level of proactiveness over time heavily affect their life, they show that long-lived firms have longer periods of rather low levels of proactiveness, interrupted by phases of carefully selected proactive moves.

Competitiveness is also seen to be a positive factor affecting firm survival, as a new entry that imitates an existing product or service would be considered entrepreneurial if the move implies an aggressive, head-to-head confrontation in the market, as later generations in family firms assume control and focus more on value and profitability than on directly challenging competitors to gain market share, the level of competitive aggressiveness decreases as well as the ability to maintain a market share (Martin and Lumpkin, 2003).

3. Hypotheses Development: Linking Governance and EO

3.1. Innovativeness

Innovativeness refers to a "firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes" (Lumpkin and Dess, 1996). The extant literature presents numerous ways to classify innovation, including continuous versus discontinuous, incremental versus radical, and technical versus administrative. But perhaps the most general classification is technological innovation versus product-market innovation.

The agency costs approach predicts that diffuse equity ownership negatively affects corporate innovation activity because it enables the managers to pursue their objectives, such as increasing their wealth and prestige, to the detriment of projects that increase profits. Indeed, since the costs of monitoring exceed the benefits, small dispersed shareholders do not have incentives to monitor management behavior (Berle and Means, 1932; Alchian and Demsetz, 1972; Ross, 1973; Jensen and Meckling, 1976). On the other hand, Cho (1998) cautions researchers that

corporate ownership and innovation activity may be linked in a two-way relationship. Cho (1998) performs a simultaneous regression using data on 230 Fortune 500 manufacturing firms (for the year 1991) and shows that, whereas ownership structure affects R&D spending, the R&D spending affects the corporate value and, in turn, ownership structure. This may cast doubt on the empirical results obtained by assuming that the ownership structure is exogenously determined.

Based on agency theory, corporate governance research assumes that various ownership constituencies have homogeneous preferences for corporate strategies such as new product innovation. Research has shown that firm leverage has a negative relationship with investments in R&D (Balakrishnan & Fox, 1993; Baysinger & Hoskisson, 1989). Alternatively, equity holders have a residual claimant status and therefore generally have a stronger interest in projects using firm-specific resources (Kochhar & Hitt, 1998). Separate ownership constituencies have some different preferences in governance. These results suggest that ownership constituencies may not be directly substitutable as monitors of the firms, especially firms emphasizing corporate innovation strategies. Thus, agency theory should be amended to suggest that not all owners are alike in relationship to governance approaches and innovation strategies. Concentrated ownership is found to be positively affecting innovation for many reasons; it reduces agency costs and disciplines managers' behavior (Hill and Snell (1988), Holmstrom (1989), Baysinger et al. (1991), Francis and Smith (1995)), favors financial commitments and organizational integration (Lacetera, 2001), makes reputation constraints tighter and favors long-term relations (Mayer (1997), Miozzo and Dewick (2002)), exacerbates asymmetric bargaining power problems (Battaggion and Tajoli (2001)), favors managers' flexibility and specialization (Ortega-Argilé's et al., 2005), and according to nonlinear relationship depending on country characteristics (Lee, 2005).

Baysinger and Hoskisson (1990) argue that boards dominated by outside directors may lead firms to reduce investment in the development of internal innovation and focus more on product diversification and external innovation through acquisitions. Outside directors, given their time and information processing constraints, are likely to use financial rather than the strategic evaluation of managers. Hoskisson et al., (2001) suggest that when inside directors are

dominant, firms focus on internal innovation in firms that report R&D expenditures. Findings suggest that inside directors prefer internal innovation (Zahra, 1996) and (Li and Simerly, 1998), thus, outside directors likely perceive less risk associated with external innovation than internal innovation, at least partly, because of the asymmetric information between outside and inside directors. Equity finance positively affects innovation because it helps risk management and financial commitments, and reduces asymmetric information problems (Bradley et al. (1984), Long and Malitz (1985), Williamson (1988), Gugler (2001), Carpenter and Petersen (2002), Lazonick (2007)). Therefore, we hypothesize:

Hypothesis 1: *Governance factors capture entrepreneurial innovativeness.*

3.2. Autonomy

Autonomy refers to "the independent action of an individual or team in bringing forth an idea or vision and carrying it through to completion" (Lumpkin et al.,1996). In an organizational context, autonomy refers to organizational members acting and making decisions independently. Autonomy may vary with firm size. Past studies have examined the extent of autonomous behavior in small firms by investigating the level of centralization. For example, (Dill, 1958) higher autonomy was associated with less complex task assignments, lower risk, more control over information flows, and more formalized interaction. Miller (1983) finds that high levels of entrepreneurial activities are associated with the most autonomous leaders who have strong central authority in small firms. White (1986) found that certain strategies that require high levels of control produce better results with low rather than with high autonomy. Shrivastava and Grant (1985) find that this high level of entrepreneurial activities also has a strong reliance on managerial autocracy. Some studies indicate that firms with autonomous leaders can overcome organizational resistance promptly, for example, by submitting market ideas directly to top management and communicating with all parties effectively. Therefore, we can infer that autonomy facilitates innovation speed through centralization in small firms.

In traditional small business literature, the concept of small firms' governance includes ownership, management, and control (Villalonga & Amit, 2006). Prior studies have found that

the advantages of private firms in mitigating agency problems are more likely to be realized when ownership is combined with active management and control; in contrast, under passive governance, such potential advantages are less likely to be realized (Anderson & Reeb, 2003; Chu, 2011). Following this notion, this study examines whether EO indeed magnifies the positive association between governance and firm performance. Autonomy as captured in the EO construct refers to the "independent action of an individual or a team in bringing forth an idea or a vision and carrying it through to completion" (Lumpkin and Dess 1996, p. 140), that is, the ability and will to be self-directed in the pursuit of opportunities. In governance context, it may lead to the separation of the CEO and the chair of a board (duality), where the CEO cannot remain free to act independently, to make key decisions.

Active governance in single firms would be presented in the firm's CEO plays dual roles as the Chair of the board. Duality is a common phenomenon for single-family firms. According to (Daily and Dalton, 1992), maintaining control is essential, in most cases, the founder-manager would serve as both CEO and board chairperson. Otherwise, there exists some risk of divided authority. On the other hand, the multifamily firm will likely avoid duality as it can cause the concentration of power to one person who might use it in the opposite of the interests of others, especially in the absence of an independent board. Thus active governance in multifamily firms exhibits a lower incidence of duality than single-family firms and therefore lower autonomy. Thus, we hypothesize:

Hypothesis 2: Governance factors capture entrepreneurial autonomy

3.3. Risk-taking

Miller and Friesen (1982) define risk-taking as "the degree to which managers are willing to make large and risky resource commitments, that is, those which have a reasonable chance of costly failures." There are two implications in this definition, both of which are necessary for understanding how risk-taking is influenced by governance. First, firms with an EO tend to engage in risk-taking behavior, such as incurring heavy debt or making large resource commitments. Second, such investments demonstrate that top management has an intense commitment to achievement and prospects for the positive outcome.

There are more arguments in the literature that could justify a positive association between governance and corporate risk-taking. First, in poor governance firms, management may obtain nontrivial cash flows and enjoy substantial private benefits from the firms that they control (e.g., Morck, Wolfenzon, and Yeung (2005), Stulz (2005)). Their high exposure may lead them to be conservative in directing corporate investment and thus less risk-taking. Second, non-equity stakeholders such as banks, governments, and organized labor, which often prefer conservative corporate investment, may influence investment policy for their benefit. Their influence is higher in low highly corporate governance environments (e.g., Morck and Nakamura (1999), Tirole (2001), Roe (2003)).

On the other hand, the literature also offers justification for a negative association between governance and risk-taking. First, when governance improves there is less fear of expropriation by managers and consequently less need for concentrated ownership (Burkart, Panunzi, and Shleifer (2003)). (Shleifer and Vishny (1986)). The ownership concentration may result in management implementing conservative investment policies. This may result in a negative relation between governance and risk-taking. Second, in weaker investor protection locations firms have dominant owners who may control a pyramid of firms (Morck, Wolfenzon, and Yeung (2005), Stulz (2005)). The dominant owner may instruct lower-layer units to take excess risks and tunnel gains to upper-layer units leaving lower-level units to absorb any potential losses. Thus, we hypothesize:

Hypothesis 3: Governance factors capture entrepreneurial risk-taking.

3.4. Proactiveness

Although proactiveness is a characteristic of firms that are the first to introduce new products or services, some researchers have found that the second firm to enter a new market can be just as pioneering as the first entrant and just as likely to achieve success via proactiveness (Miles, Snow, Meyer, & Coleman,1978). Therefore, proactiveness refers to firms that have the will to be a leader and the foresight to seize new opportunities, even if they are not always the first to enter the market. In an entrepreneurial context, proactiveness refers to the way firms relate to market opportunities in the process of new entry.

There is a broad debate about whether governance protection afforded to managers is beneficial to the firm (Bebchuk and Cohen 2005) under the viewpoint that protected managers tend to be sheltered from the market fluctuations, which leads to inferior firm performance (Bertrand and Mullainathan 2003). Also, the vast majority of studies find that corporate governance factors might affect the entry mode decision. Both internalization theory (McManus, 1972; Buckley and Casson, 1976; Rugman, 1981; Hennart, 1982) and the resource-based view (Teece et al., 1997; Lippman and Rumelt, 1982; Dierickx and Cool, 1989) see proactiveness as the primary means for firms to appropriate rents in overseas markets from the exploitation of their idiosyncratic resources and capabilities. Therefore, we can hypothesize that:

Hypothesis 4: Governance factors capture entrepreneurial proactiveness.

3.5. Competitive aggressiveness

Competitive aggressiveness is characterized by responsiveness, which involves adapting to competitors' challenges. Competitively aggressive firms often respond to such challenges with head-to-head confrontation. Competitive aggressiveness may also reflect a willingness to compete using unconventional methods, such as analyzing and targeting competitors' weaknesses (Stuart & Abetti, 1987) and adopting unconventional tactics to challenge industry's leaders (Cooper, Willard & Woo, 1986).

Managers may prefer growth to profits (empire building may bring prestige or higher salaries), may be lazy or fraudulent ("shirk"), and may maintain costly labor or product standards above the necessary competitive minimum, thereby reducing individual incentives to exercise rights and creating the preference for exit (Eisenhardt, 1989). Similarly, interfirm ownership may create networks that condition business competition, cooperation, and innovation (Whitley, 1999).

Competition may both influence and be influenced by governance systems, the effectiveness of various types of governance systems may be impacted by the degree of product market competition and the extension of competition (Mayer, 1997). He also suggests that Firms that receive a larger fraction of their debt financing from one lender invest, sell more and are more competitive, in addition, The structure of boards (role of non-executives, separate chairs and chief

executives, and remuneration, audit, and nominating committees.) affect the way in which companies are managed and controlled and their completive behavior. There exists a positive relationship between ownership structure and competitiveness; Small private firms tend to have better competitiveness than public firms (Zhang et al., 2000). Therefore:

Hypothesis 5: *Governance factors capture entrepreneurial, competitive aggressiveness*

Figure 2 depicts the linkage between governance factors and EO factors. It represents the conceptual model of moderating entrepreneurial orientation in the relationship between the governance structure and firm performance and survival. The direct relationship between governance and the five EO factors represents the five-main hypothesis in the study. The second set of direct relationships is between the five EO factors and performance and survival. While the main indirect relationship is between Governance and performance/survival through the impact of EO factors.
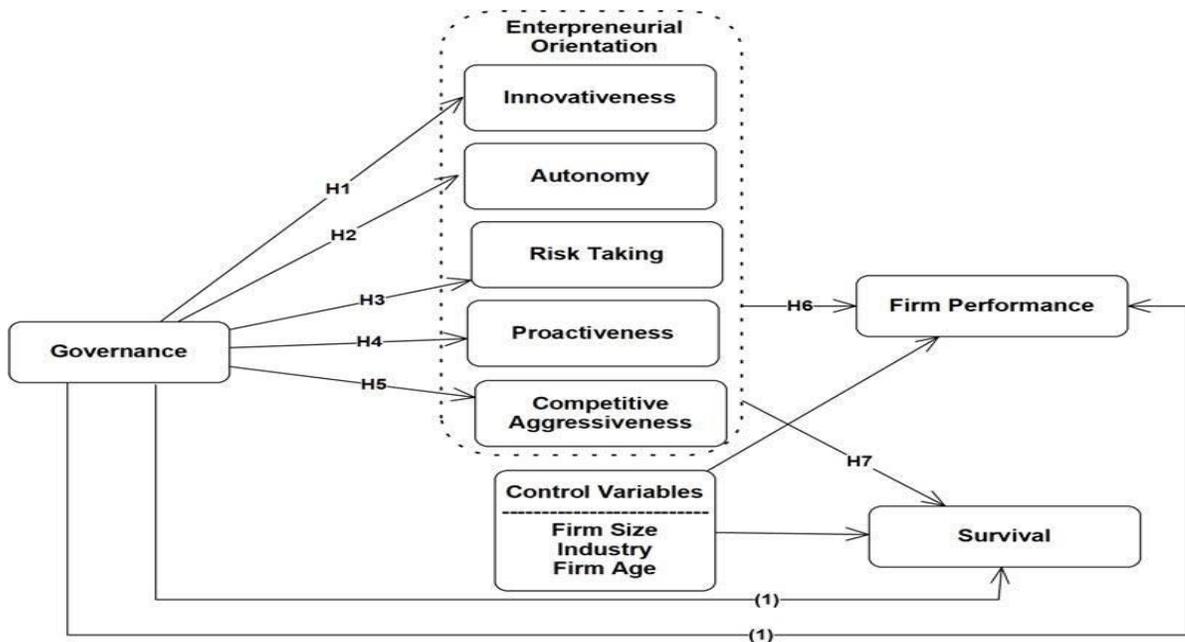

Figure 2: Conceptual framework for the direct and indirect relationship between EO and firm performance and survival through governance

As shown in figure 2, we build some expectations on the relationship between governance variables and each of the EO factors as shown in table 1. Table 1 summarizes the expected

relations between the governance variables and the EO dimensions with an explanation for the sign relationship between each of them.

Table 11: Diagram of Governance-EO-linkage

Table 1 shows the linkage between the governance variables; leverage, duality, outside director and ownership, and the EO factors; innovativeness, autonomy, risk taking, proactiveness, competitiveness.

GOV PROXIES	SIGN	EO ATTRIBUTES	COMMENTS
LEVERAGE	-	Innovativeness	Debt finance negatively affects innovation because it puts constraints on the firm's ability to take on risky innovation;
	-	Autonomy	Debt finance negatively affect autonomy as it reduces managers autonomy in making decisions
	-	Risk Taking	Debt financing decreases a firm's risk-taking ability
	-	Proactiveness	Higher debt financing might restrict the firm's ability to lead the market and be proactive
	+	Competitiveness	Firms that receive a larger proportion of their debt financing from one lender invest, sell more, and are more competitive.
DUALITY	-	Innovativeness	When positions of the CEO and chairman are held by the same person, the directors are less likely to be independent and therefore might be less effective in innovativeness. However, it may limit the benefits from hiring the best existing professional managers that can have particularly large for innovative activities.
	+	Autonomy	When the same person holds both board chair and CEO positions he/she can exercise more autonomy;
	-/+	Risk Taking	A board dominated by dual CEO and chair will be more effective in controlling opportunistic managerial risk-taking behavior. In some cases, duality can lead to more risk-taking.
	-	Proactiveness	Duality tends to cause avoidance of proactiveness due to more monitoring of activities and risk avoidance.
	+	Competitiveness	As competitiveness requires faster decisions, Dual leadership allows firms to make speedier decisions and react more quickly to new information than separate leadership.
OUTSIDE DIRECTOR	+	Innovativeness	Independent board positively affects innovation because it reduces agency costs and disciplines managers' behavior
	-	Autonomy	Independent board reduces manager control and thus lowers autonomy
	-/+	Risk Taking	Independent directors allow managers greater discretion to reduce risk-taking.

	N/A	Proactiveness	Independent directors have a neutral impact on proactiveness
	+	Competitiveness	Independent board affect the way in which companies are managed and controlled and thus their completive behavior
OWNERSHIP (number of owners)	+	Innovativeness	Higher # of owners might promote innovation.
	+	Autonomy	Higher number is likely to have less autonomy
	+/-	Risk Taking	Higher number may support higher risk-
	+	Proactiveness	higher number might slow down proactiveness
	+	Competitiveness	Higher number might increase competitive ability

4. Sample, Variables, and Data

4.1. Sample

We utilize Kauffman Survey Data (KFS) which tracks a sample of firms from their inceptions through their first eight years of existence. This survey is conducted each year from 2004 until 2011. The data includes information on business characteristics, firm strategy, innovation, organizational structure, and active-owner-operator demographics. Active-owner-operators are defined as a firm owner who, "provides regular assistance or advice regarding the day-to-day operations of the business, rather than providing only money or occasional operating assistance" (Farhat and Robb, 2014).

The sampling frame for the KFS is based on the Dun & Bradstreet (D&B) database and restricted to businesses (or enterprises) that are reported by D&B as starting in 2004. This database is a compilation of data from various sources, including credit bureaus, state offices that register some new businesses, and companies (e.g., credit card and shipping companies) that are likely to be used by all businesses. Importantly, this is not the same database as the D&B business registry available on the Internet; the sample from which our data are drawn contains vastly greater coverage of firms in the United States. The KFS data includes an oversample of high-tech firms; thus, all of our analyses use sampling weights that adjust the sample to be representative of the frame from which the sample was drawn.

4.2. Variables

4.2.1.Dependent variables

4.2.1.1. Performance

Because these companies are privately-held, market performance measures are not available. Therefore, we rely on the accounting measures of performance discussed below:

- ROA: Net income/average total assets, using the average assets based on the average of beginning and end of year assets;
- ROE: Net income/average equity, where average equity is based on the average of beginning and end of year equity.
- Employment growth: measured by the increase in the employment percentage over the life of the firm.
- Sales Growth: measured by the growth in the firm sales over the years.

4.2.1.2. Survival

Measured by the binary variable of survival as of 0 and 1 of the firm through the eight years of the survey.

4.2.2.Independent variables: Governance structure

We included the main governance factors in the private firms; ownership structure (single vs. Multiple), Duality, Independent Directors and Leverage. Where:

- Ownership structure is a dummy variable that takes on the value of 1 if the firm is owned by a single owner (i.e., proprietor) and zero if the firm is owned by multiple owners ;
- Board structure is proxied by the presence of one or more independent directors on the board. Outsiders on the board of directors is any director who is unrelated to the family. We use a dummy variable to capture the essence of this variable: it takes a value of 1 if the board has an independent director, zero otherwise.
- For sources of financing, we employ several proxies :

- o Ratio of debt to equity= Measured using the median leverage of all firms and ranking firms as above and below the median.

- o Financing via owners

- o Financing via a bank loan

- o Financing via government finance; and

- o Financing via venture capital

4.2.3. Moderating variables: Entrepreneurial Orientation

EO has five dimensions; innovativeness, proactiveness, risk-taking, competitive aggressiveness, and autonomy. Multiple questions developed in Kauffman Survey are used to measure each of these EO elements. Two question phrases are exploited. The respondents are asked to report their EO in a follow-up of eight years (2004-2011) by giving a dummy answer of 1 or 0, where the one presents the strength of the EO in the firm.

4.2.4. Control variables:

To control for the effects of variables that may have an important influence on both performance and survival, we include three control variables: firm age, firm size, and industry. Resources vary significantly depending on the size of the firm. Resource-based theory affirms that firm resources are the most valuable source of their competitive advantage and excellence (Barney, 1991). For small enterprises, the respective economies of scale are constrained by the limited resources, putting them at a disadvantage where growth is concerned (Aragón-Sánchez and Sánchez-Marin 2005).

4.2.5. Variable definition and computation:

On Table 2, we show the definition of the five EO factors and the questions used to measure them. For each variable, we used two to three questions from the KFS survey that was mostly related to the factor definition (Appendix 1).

Table 12: Variable definition and measurement

Table 2 shows the definition used for each of the EO variables including innovation, autonomy, risk-taking, proactiveness, and competitive aggressiveness.

Variable	Definition
Innovativeness	The firm's likelihood to promote and support original ideas, experimentation, and creative processes that may lead to new products, services, or technological processes (Lumpkin and Dess, 1996). We measure it by three questions in the survey.
Autonomy	An individual or team's independent action in bringing an idea or vision and implementing it through to completion (Lumpkin et al.,1996). In an organizational context, autonomy refers to organizational members acting and making decisions independently. We measure it by three questions in the survey.
Risk-taking	The degree that managers are willing to make substantial and risky resource commitments, which have a reasonable chance of costly failures. We measure it as the total external debt to the total external equity.
Proactiveness	The willingness of the firm to be a leader and the foresight to seize new opportunities, even if they are not always the first to enter the market. In an entrepreneurial context, proactiveness refers to the way firms relate to market opportunities in the process of new entry.
Competitive aggressiveness	The willingness to compete using unconventional methods, such as analyzing and targeting competitors' weaknesses (Stuart & Abetti, 1987) and adopting unconventional tactics to challenge industry's leaders (Cooper, Willard & Woo, 1986).

4.3. Data Sources

We use Kauffman Survey Data which tracks a sample of firms from their start through their first eight years of existence. This survey is conducted each year from 2004 until 2011. The

data includes information on business characteristics, firm strategy, innovation, organizational structure, and active-owner-operator demographics. Active-owner-operators are defined as a firm owner who, "provides regular assistance or advice regarding the day-to-day operations of the business, rather than providing only money or occasional operating assistance" (Farhat and Robb, 2014). Several studies have used KFS data to further understand new firm characteristics, such as analyzing the financing of new firms (Coleman and Robb, 2009; 2011; Cole and Sokolyk, 2013), comparisons of different types of new firms (Welsh, Desplaces, and Davis, 2011), and firm survival (Robb and Reynolds, 2009).

The KFS is based on a random sample of businesses--from the Dun and Bradstreet (DB) database, which was created in 2004. The design for the questionnaires for the sample was done by Mathematica Policy Research. The baseline questionnaire was delivered in 2004, and follow-up questionnaires were sent every following year. So far adding to the baseline are three following waves consisting of 2005, 2006 and 2007 data. The development and change aspects involved with innovations in high-tech industries motivated the Foundation to oversample firms in these fields. The screening/eligibility test allowed only 15 percent of the potential pool of firms to be part of the sample. The initial sample of firms passed "the eligibility test" defining a new business in 2004 and consisted of 4,928 firms out of an initial pool of 32,429 businesses. Respondents were paid $50 to answer using a self- administered web survey or a computer-assisted telephone interview.

Eligibility for inclusion in the data was determined by two tests. The firm must be a new company and must be a company created individually by de novo entrepreneurs. The first test confirms that the company had started its activity in 2004. Thus, if the firm had started activity before 2004, the firm was not included in the sample. The second test confirmed the ownership and provenance of the firm. The firm cannot be a subsidiary of any other business and cannot be a spin-off, nor be inherited by previous owners. Finally, the firm cannot be a not-for-profit company. Firms that passed both tests were included in the sample in the

baseline questionnaire and corresponding follow-ups. The baseline questionnaire records data at the birth of the firm, and thus is used as the main operational conditions in the study.

There are four waves available in the current Kauffman Firm Survey. Firms that are included in the first wave satisfied two conditions. They first needed to be part of the sample and survive the first year of activity. The first wave found that 7.4 percent (6 percent plus 1.4 percent) of the 4,928 (369) were out of business by the end of 2005. There were 4,523 businesses left in 2005. More businesses were found have closed by the time of the second and third follow-ups. Some of the surviving firms chose not to answer, and sample weights were adjusted accordingly.

5. Results

5.1. Summary Statistics

The following table (3) presents the summary statistics for the data based on the forms of organization (Panel A), Industry Classification (Panel B), and survival rate (Panel C) as of 2011. On panel A, the sample is classified based on the form of organization, showing that partnership has the highest percentage of duality – the separation between CEO and the board chair- while sole Proprietorship has the lowest percentage of 7%. Regarding the independent board, partnership again shows the highest percentage of having independent members on their board of directors, while sole Proprietorship has the lowest percentage of 18%. Limited liability corporations show the lowest percentage of using debt compared to equity in their financing options. While partnership has the highest ratio of 63%.

On Panel (B), we classify the sample based on the industry as high tech, medium tech, and low tech. The results show that low tech industry has highest duality percentage. While the high tech firms have the highest independent board percentage as well as using of leverage. On panel (C), the sample is classified based on survival, showing that firms who survived as of 2011 have the highest percentages of using duality and independent members on the board.

While those who did not survive seems to have more usage of debt in their capital structure. Panel D shows the classification based on form size as total assets where the first group with a size of less than $10,000 represents 40% of the sample, 39% for the second size group between $10,000 and $100,000. And 21% of the last group with total assets more than $100,000. In terms of governance factors, the third group with the largest size tend to have the highest duality ratio as well as independent board and leverage. While the smallest size group shows the lowest percentage of all governance variables.

Table 13: Summary statistics

Table 3 shows the summary statistics for the firms included in the KFS from 2004 till 2011. The four panels classify the percentages of Firms, Duality, Independent board and leverage based on Panel A; Forms of organizations, Panel B; Industry classification, Panel C; Survival rate and Panel D; Firm size.

Panel A : The Form of Organization					
	Sole Prop.	**LLC**	**C Corp.**	**S Corp.**	**Partnership (Gen Part + LTD part)**
Firms	1635	1556	440	1039	206
Duality[1]	7%	22%	34%	27%	65%
Independent board	18%	25%	24%	22%	78%
Leverage	28%	21%	25%	31%	63%
Panel B : Industry Classification					
	High Tech		**Medium Tech**		**Low Tech**
Firms	705		1329		2894
Duality[1]	62%		43%		83%
Independent board	74%		55%		48%
Leverage	89%		76%		62%
Panel C : Survival Rate					
	Survived			**Non-Survived**	
Firms	2007			2910	
Duality[1]	79%			43%	
Independent board	56%			28%	
Leverage	52%			67%	
Panel D : Firm Size					
	0 to 10,000		**10,000 to 100,000**		**More than 100,000**

Firms	40%	39%	21%
Duality[SEP]	12%	22%	62%
Independent board	1%	23%	41%
Leverage	39%	83%	87%

To see the correlation between the EO factors and governance variables, we perform a pairwise correlation matrix (table 4) presenting the correlation of the employed variables. Showing that positive correlations exist between the governance variables and EO factors except for the risk-taking variable which shows a negative correlation with other variables.

Table 14: Descriptive statistics and pairwise correlations

Table 4 shows the pairwise correlation between the study variables including; governance index, innovativeness, proactiveness, autonomy, risk-taking, competitive aggressiveness, ROE, ROA, employment growth, sales growth, and industry.

Variables	Mean (SD)	1	2	3	4	5	6	7	8	9	10	11
1. Governance Index	4.46 (1.36)											
2. Innovativeness	4.04 (1.31)[SEP]	0.32*	[SEP]									
3. Proactiveness	3.43 (1.25)	0.23*	0.17*									
4. Risk-Taking	4.86 (1.24)	− 0.52**	0.37*	− 0.15**								
5. Competitive[SEP] Aggressiveness	4.24 (1.28)[SEP]	0.53*	0.46*	0.44**	− 0.45							
6. Autonomy	4.91 (1.30)											

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7. ROE	0.35 (0.48)	0.17	0.14	0.42*	- 0.21*	0.02					
8. ROA	0.32 (0.47)	0.26*	0.14*	0.11*	- 0.24*	0.12*	− 0.02*				
9. Sales Growth	0.11 (0.32)[SEP]	0.15*	0.27**	− 0.5*	− 0.24**	− 0.26**	− 0.08*	− 0.24**			
10. Employment Growth	0.48 (0.44)[SEP]	0.57*	0.37*	0.12**	- 0.24**	− 0.23*	0.09*	− 0.11*	0.09		
11. Industry	0.38 (0.36)[SEP]	− 0.08*	− 0.13**	0.02*	− 0.20*	− 0.16**	− 0.16	− 0.08**	0.04	0.26*	
		0.04	0.02*	0.06	0.08	0.06*	0.09	0.22*	0.52	− 0.28	− 0.50

5.2. Testing Hypotheses

We test our hypotheses in two principal steps. In the first step, we test the efficacy of governance index in capturing the essence of EO factors. In the second step, we examine if the governance index is capable of explaining cross-sectional and longitudinal differences in the performance and survival length. (see table 2).

5.2.1. Governance and EO Factors

The first step involves using hierarchical regression analyses; Hierarchical regression is a way to show if variables of interest explain a statistically significant amount of variance in the dependent variable after accounting for all of the other variables. This is our framework for the model comparison rather than a statistical method and requires building several regression models by adding variables to a previous model at each step and later models always including smaller models in previous steps. In many cases, our interest is to determine whether newly added variables show a significant improvement in R2 (the proportion of explained variance in dependent variable by the model).

Before performing hierarchical regression analyses, we follow the four steps

recommended by Baron and Kenny (1986) to test the mediating role of EO in the relationship between governance and performance/survival. Baron & Kenny's procedures describe the analyses which are required for testing the various mediational hypothesis. The first step is to show that the governance variables are correlated with the performance/survival. The second step is to show that the governance variables are correlated with the EO dimensions. In other words, we are treating the EO variables as the dependent variable. The third step involves establishing the correlation between the EO variables and the performance/survival. In this step, there is a correlation between the EO and the performance/survival variable because they both are caused by the governance. In other words, in Baron & Kenny's procedures, the governance must be controlled while establishing the correlation between the EO and performance/survival. The last step in this procedure involves the establishment of the complete mediation across the variables. This establishment can only be achieved if the effect of the governance over the outcome variable while controlling for EO variables is positive. If all four steps of Baron & Kenny's procedures are met, then the data is considered to be consistent with the mediational hypothesis. If only the first three steps of Baron & Kenny's procedures are satisfied, then partial mediation is observed in the data.

We first used confirmatory factor analysis (CFA) to reduce the dimensions of EO items, based on the structural equation modeling (SEM) technique. Each of the five dimensions of EO is measured by three questions, so for each dimension a score by averaging the three questions is calculated. The fit indexes of the first-order factors (i.e., the five dimensions) plus the second-order factor (i.e., EO) fell within an acceptable range (χ2/df = 1.96, GFI = 0.93; CFI = 0.99, NFI = 0.96, AGFI = 0.93, RMSEA = 0.07). The standardized loading of innovation is 0.76* (t = 7.92), of autonomy is 0.88** (t = 8.43), of proactiveness is 0.96*** (t = 9.38), of Competitive aggressiveness is 0.72** (t = 7.54), and of risk-taking 0.62* (t = 7.22). All these indicate a satisfactory measurement model.

Table 15: Hierarchical regression analyses results: effect of governance on entrepreneurial orientation (dependent variable: EO dimensions)

Table 5 presents in 6 models the factors that affect each of the EO variables. Each model shows the regression of the governance and control variables on each of EO variables as model 1 on the

innovativeness, model 2 on the autonomy, model 3 on risk-taking, model 4 on proactiveness, model 5 on competitive aggressiveness and model 6 on EO index.

	Model (1) Innovativeness	Model (2) Autonomy	Model (3) Risk-taking	Model (4) Proactiveness	Model (5) Competitive Aggressiveness	Model (6) EO index
intercept	−10.998**	−11.619	−8.821	−2.719	−13.947	-1.223
Ownership	1.565**	3.672***	−0.240	4.716***	0.094	3.922***
Duality[1]	0.086**	−0.086	−0.099	−0.067	−0.083*	−0.096*
Independent board	- 2.418***	2.453*	2.517**	0.809	2.971***	2.993**
Leverage	−0.111**	−0.245**	0.038	−0.409***	0.163	0.655**
Industry	1.469**	−3.315***	0.067	3.867***	0.224	1.314
Firm size	0.187	−0.009	0.278	0.072	0.220	−2.893*
Firm age	3.575	5.098*	1.388	−0.105	2.554	−1.768
F value	7.101	5.349	2.639*	4.346	3.898*	−2.710**
R^2	0.209	0.342	0.260	0.420	0.190	.833

While, * $p<.10$, ** $p<.05$, *** $p<.01$.

Hypothesis H1 predicts that governance has a significant influence on innovativeness. Counter to H1, the results in Table 5 (Model 1) indicate that innovativeness is significantly positively related to the sole proprietorship ownership structure and the independent board. But negatively related to duality and industry type. Hypothesis H2 suggests that there is a relationship between governance and autonomy. The results in Table 5 (Model 2) provide support for this hypothesis, indicating that autonomy is positively and significantly related to sole proprietorship ownership structure and the independent board. While negatively related to

leverage and industry type.

Hypothesis H3 predicts that there is a positive relationship between risk-taking and governance. Counter to the hypothesis, the results in Table 5 (Model 3) indicates that risk-taking increases significantly with board independency. H4 suggests that there is a significant relationship between governance and proactiveness. This predication is fully supported by our results (see Model 4, Table 5) as sole proprietorship tend to be positively related to proactiveness and both leverage and industry type impacts proactiveness negatively. H5 argues that there is a significant relationship between governance and competitive aggressiveness. This predication is fully supported by our results (see Model 5, Table 5) as independent board tend to be positively related to competitive aggressiveness, and negatively with duality.

In model 6 table 5, we regressed the governance factors on the EO index, and we got positive significantly positive relation with single ownership, independent board and leverage, while a significant negative relation with duality and firm size. In terms of R2, Model 6 seems to have the highest goodness of fit of 83% as we included the five EO dimensions in the EO index and regressed it on the governance variables. (Appendix 1).

5.2.2. Explaining Performance: Governance factors vs. EO factors

In terms of the empirical test of the relationship between EO and performance, results in Table 14 (Model 1) indicate that EO factors have a significant and positive effect on performance; as four of the EO dimensions tend to impact performance in a significantly and positively, while risk-taking turn to impact performance in a significantly negative manner, these results provide empirical support for how EO affects performance.

To explore possible mediating relationships between dimensions of the EO, Governance, and performance, we conducted further analyses by separately adding both dimensions of EO and variables of governance into Model 3. The final results are presented in Model 3 of Table 6. The results show that 1) four of the five EO variables (Innovativeness, Autonomy, and Risk-

Taking and proactiveness) have significant effects on performance; 2) both duality and leverage as governance variables have significant effect on performance; 3) Firm size and firm age have significant effect on performance; 4) adding EO to model 2 (Table 6 model 3) the estimated effects of the five independent variables (EO) on performance are reduced (Model 3); 5) the estimated effects of the Governance factors increased. These empirical results show that partial mediations are supported by the data. Therefore, we concluded that EO partially mediates the relationship between Governance and performance.

Table 16: Hierarchical regression analyses results: Effect of EO and Governance on Performance (performance measured by ROE)

Table 6 presents in 3 models the factors that affect performance measured by ROE. Model 1 shows the EO variables (innovativeness, proactiveness, autonomy, risk-taking, competitive aggressiveness) effect on ROE. Model 2 shows the impact of governance variables (ownership, duality, independent board and leverage) on ROE. Model 3 shows the effect of both EO variables and governance variables on ROE.

	Model (1) EO	Model (2) Governance	Model (3) EO + Governance
Intercept	1.28*	2.53**	0.15
Ownership		0.22	0.24
Duality[1]sep		.10**	0.11**
Independent board		.18***	0.06
Leverage		.12**	0.01*
Innovativeness	.23***		0.15***
Proactiveness	− 0.08**		− 0.07**
Risk-Taking	− 0.01**		− 0.03***
Competitive[1]sepAggressiveness	0.10 **		0.09*
Autonomy	0.19 **		0.13*
Industry	0.05	.22***	0.49
Firm size	0.09	.16**	1.02***
Firm age	0.10	.02	− 0.19**
F value	12.10**	11.23**	12.27***
R2	0.46	.73	.93
Adjusted R2	0.42	.69	.91

While, * p<.10, ** p<.05, *** p<.01.

5.2.3. Explaining Survival: Governance factors vs. EO factors

Table 7 gives an overview of all the relationships between all constructs used in the research. Using LOGIT models with the survival of the startup as the dependent variables, results show that; in the model (1) of the EO factors regressed on the survival, it shows that innovativeness and proactiveness have a significant positive impact on survival, while both risk-taking and competitiveness affect survival in a significantly negative way. The size and age of the firm have significantly positive effects on its survival. The model variables explain 53% of the startups' survival.

In model (2), the governance factors are regressed on the survival. Duality, independent board, and leverage have a significantly positive impact on survival. The firm size and firm age have positive effects on survival. Model (2) explains 66% of startup survival. On the combined model (3) we regress both governance variables and EO factors on firm survival, the results show that all the variables are positively significant affect startup survival, with the model explanation of 93% of the survival.

Table 17: Hierarchical regression analyses results: Effect of Governance and EO on Survival

Table 7 presents in 3 models the LOGIT regression of the factors that affect startup survival. Model 1 shows the EO variables (innovativeness, proactiveness, autonomy, risk-taking, competitive aggressiveness) effect on survival. Model 2 show the impact of governance variables (ownership, duality, independent board and leverage) on survival. Model 3 shows the effect of both EO variables and governance variables on survival.

	Model (1) EO	Model (2) Governance	Model (3) EO + Governance
Intercept	1.01*	1.04*	0.79
Ownership		0.88	0.93*
Duality		0.30*	0.31**
Independent board		0.34**	0.35***
Leverage		0.55**	0.56***
Innovativeness	0.58**		0.43***
Proactiveness	0.43**		0.28**
Risk-Taking	- 0.26*		- 0.29**
Competitive Aggressiveness	- 0.33**		- 0.35***
Autonomy	0.36		0.25*
Industry	0.37	0.38	0.33
Firm size	0.44**	0.46**	0.47***
Firm age	0.28*	0.29**	0.30**
F value	8.17*	9.23**	11.27***

R^2	.53	.66	.93

While, * p<.10, ** p<.05, *** p<.01

5.3. Robustness Check

For robustness check on the direct and indirect impact of governance factors on firm performance, we used three other proxies for the performance: ROA (table 8); Sales growth (table 19); and employment growth (table 20). The results reported in table 8,9,10 supports the following conclusions; All the EO factors have significant effects on performance; 2) Duality, leverage and independent director as governance variables have significant effect on performance; 3) Firm size and firm age have significant effect on performance; 4) adding EO to model 2 (table 8 model 3) the estimated effects of the five independent variables (EO) on performance are reduced (Model 3); 5) the significance of the estimated effects of the Governance factors increased. These empirical results with ROA - as a proxy for performance - show that partial mediations are supported by the data. Which supports the result that EO partially mediated the relationship between Governance and performance.

Table 18: Hierarchical regression analyses results: Effect of EO and Governance on Performance (performance measured by ROA)

Table 8 presents in 3 models the factors that affect performance measured by ROA. Model 1 shows the EO variables (innovativeness, proactiveness, autonomy, risk-taking, competitive aggressiveness) effect on ROA. Model 2 shows the impact of governance variables (ownership, duality, independent board and leverage) on ROA. Model 3 shows the effect of both EO variables and governance variables on ROA.

	Model (1) EO	Model (2) Governance	Model (3) EO + Governance
Intercept	2.13*	3.27*	0.83
Ownership		0.46	0.97
Duality[1]		0.25*	0.19**
Independent board		0.33*	0.21**
Leverage		0.12**	0.08**
Innovativeness	0.17***		0.19**
Proactiveness	0.12**		- 0.11**
Risk-Taking	− 0.09**		− 0.01***
Competitive[1] Aggressiveness	0.15**		- 0.05

Autonomy	0.16 **		0.10**
Industry	0.12	0.14**	0.32***
Firm size	0.16*	0.18**	1.02***
Firm age	0.11*	0.09*	0.06*
F value	9.22**	8.24**	10.11**
R^2	0.40	0.56	0.89

While, * p<.10, ** p<.05, *** p<.01

Table 19: Hierarchical regression analyses results: Effect of EO and Governance on Performance (performance measured by Sales Growth)

Table 9 presents in 3 models the factors that affect performance measured by Sales Growth. Model 1 shows the EO variables (innovativeness, proactiveness, autonomy, risk-taking, competitive aggressiveness) effect on Sales Growth. Model 2 shows the impact of governance variables (ownership, duality, independent board and leverage) on Sales Growth. Model 3 shows the effect of both EO variables and governance variables on Sales Growth.

	Model (1) EO	Model (2) Governance	Model (3) EO + Governance
Intercept	2.27	2.39	0.98
Ownership		− 0.22	0.24
Duality[1]		.10**	0.11*
Independent board		.18***	− 0.06
Leverage		.12**	0.01*
Innovativeness	0.13		0.14*
Proactiveness	0.24*		0.30**
Risk-Taking	− 0.02**		− 0.03***
Competitive[1]Aggressiveness	0.10 *		0.32*
Autonomy	0.12 *		0.17*
Industry	- 0.08	- .21**	- 0.27**
Firm size	0.05*	.22*	.92**
Firm age	- 0.11	.09	- 0.14
F value	7.22*	11.23**	8.51**
R^2	0.32	.43	.75

While, * p<.10, ** p<.05, *** p<.01

Table 20: Hierarchical regression analyses results: Effect of EO and Governance on Performance (performance measured by Employment growth)

Table 10 presents in 3 models the factors that affect performance measured by Employment Growth. Model 1 shows the EO variables (innovativeness, proactiveness, autonomy, risk-taking, competitive aggressiveness) effect on Employment Growth. Model 2 shows the impact of governance variables

(ownership, duality, independent board and leverage) on Employment Growth. Model 3 shows the effect of both EO variables and governance variables on Employment Growth.

	Model (1) EO	Model (2) Governance	Model (3) EO + Governance
Intercept	1.93	1.22	0.73
Ownership		− 0.17	0.24
Duality[1] SEP		.18**	0.11*
Independent board		.18***	− 0.06
Leverage		.23**	0.01*
Innovativeness	.14***		0.15***
Proactiveness	0.09**		0.12**
Risk-Taking	− 0.16**		− 0.18***
Competitive[1] SEP Aggressiveness	0.14**		0.20
Autonomy	0.14 **		0.19**
Industry	0.35	.36***	0.44
Firm size	0.63	.33**	.91***
Firm age	0..22	.39*	− 0.15**
F value	8.10**	7.44*	9.32***
R^2	0.31	.65	.85

While, * $p<.10$, ** $p<.05$, *** $p<.01$

6. Discussion

The key objective of this study is to examine the mediating role of EO variables in the relationship between Governance and performance; and survival. Our empirical results provide support for the five hypotheses presented in the study. As predicted, including the EO factors leads to superior performance. In addition, autonomy, innovativeness and competitive aggressiveness are found to increase performance as predicted. While risk-taking and proactiveness show a negative effect on performance.

In contrast to some of the current literature, our empirical results suggest that duality and leverage has a significantly negative impact on EO factors. From results in Table 5, we find that duality has the significant negative effect on innovation, proactiveness, risk-taking, autonomy and competitive aggressiveness. The effect of duality seems to diminish when included in the model of the indirect effect of it on performance through EO factors (model 3 table 6). Higher leverage is associated with lower level of taking initiatives in innovation, autonomy and lower

level of ability in identifying opportunities (proactiveness). On the other hand, surprisingly, our results find that leverage is positively related to risk-taking, our main explanation for this relationship is that the monitoring on most of the government loans and small business loans is less restricted, allowing for the entrepreneurs to take the advantage of increasing the risk in a hope to get higher returns and growth in return.

The empirical results also reveal some surprising results. Proactiveness is found to negatively, not positively, affect performance. We offered some plausible explanation for the surprising results. Although proactiveness leads to higher exposure for the firm products in the market, it might lead to negative results if the firm takes it to more risky edges leading to product failure thus lower performance. This finding implies that, in spite of product proactiveness bringing a lot of positive benefits to the firms, it holds a lot of uncertainty and resource consumption. Entrepreneurs should be cautioned on not emphasizing too much on proactiveness because too much proactiveness will result in spending too much time in identifying opportunities and taking unnecessary initiatives which increase the cost of the product and may reduce its performance opportunities.

It is also surprising to find that risk-taking negatively, not positively, affects both performance and survival. We posited that risk-taking might facilitate positive performance and survival because resource commitment form top management allows product and process designers to be less concerned with conserving resources needed to perform extra analyses and redesigns (Chen et al., 2010). However, this perspective is not supported by our results. Risk-taking seems to have a complex relationship with performance and survival. Although resource commitment may facilitate performance temporarily, there may be negative results in the long run when there is a strong proclivity for high-risk projects and aggressive postures to maximize the probability of exploiting potential opportunities that may prompt firms venturing into the unknown or borrowing heavily (Baird & Thomas, 1985).

7. Conclusion

This study makes several contributions to the EO/governance literature, including the following three. First, this research advances the entrepreneurial orientation literature by examining the mediating role of EO in the relationship between governance and performance. We find that EO significantly enhance the link between governance and performance. Although the important role of innovative and entrepreneurial activities in the relationship of governance and performance have been emphasized, insights regarding how EO dimensions intervene the relationship between governance and performance are rare. Second, the mediating relationship of EO between governance and survival is important because this finding challenges the general idea that the relationship between governance structure and survival is simply direct. Although governance might affect survival, mediating EO makes this effect more significant. Third, it solves the debate of the subjectivisms of EO dimensions measured by questionnaires through mediating them in the objective data of governance and performance opportunities and taking unnecessary initiatives.

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Appendix 1

A. EO Variables measurement in the KFS

Table 21: EO variables measurement

Table 11 presents the questions from the KFS used to measure each of the EO variables; innovativeness, autonomy, risk taking, proactiveness and competitive aggressiveness.

VARIABLE	QUESTION
Innovativeness	• How many employees or owners, if any, were primarily responsible for research and development. • Did your business introduce any products or services that were new or significantly improved? • Was your business founded around a new or customized product or service that was created by you or one of the founders of the business?
Autonomy	• How many owners actively helped to run the business? By helped to run the business we mean that they provided regular assistance or advice with day-to-day operations of the business, rather than providing only money or occasional operating assistance.
Risk-taking	• Financial (External Debt/Internal Debt)
Proactiveness	• How many employees or owners, if any, were primarily responsible for executive administration (strategic planning). • were any of the products or services new to any market or markets your business competes in? • Did your business introduce any new or significantly improved processes in the production of goods or providing services? Please include any new or improved processes, even if your business was not the first to introduce it.
Competitive aggressiveness	• Were any of the new or significantly improved products or services introduced in YYYY new to [ITEM]? b) A national-wide market. • Does the company have a competitive advantage over its competitors? Yes 1, no 0

B. Hierarchal regression models used in table (5):

$INNOVATION_{ij} = b0j + b1j\ OWN_i + b2j\ DUAL_i + b3j\ LEV_i + b4j\ BOARD_i + b9j\ Size_i + b10j\ Industry_i + e_{ij}$,

$AUTONOMY_{ij} = b0j + b1j\ OWN_i + b2j\ DUAL_i + b3j\ LEV_i + b4j\ BOARD_i + b9j\ Size_i + b10j\ Industry_i + e_{ij}$,

$RISKTAKING_{ij} = b0j + b1j\ OWN_i + b2j\ DUAL_i + b3j\ LEV_i + b4j\ BOARD_i + b9j\ Size_i + b10j\ Industry_i + e_{ij}$,

$PROACTIVE_{ij} = b0j + b1j\ OWN_i + b2j\ DUAL_i + b3j\ LEV_i + b4j\ BOARD_i + b9j\ Size_i + b10j\ Industry_i + e_{ij}$,

$COMPETE_{ij} = b0j + b1j\ OWN_i + b2j\ DUAL_i + b3j\ LEV_i + b4j\ BOARD_i + b9j\ Size_i + b10j\ Industry_i + e_{ij}$,

$EO\ Index_{ij} = b0j + b1j\ OWN_i + b2j\ DUAL_i + b3j\ LEV_i + b4j\ BOARD_i + b9j\ Size_i + b10j\ Industry_i + e_{ij}$,

VITA

Noura Metawa was born in Mansoura, Egypt in 1988. She received her B.A. in Business Administration from Mansoura University in 2009. She obtained an M.Sc. in Finance from Mansoura University in 2012. She joined the University of New Orleans in August, 2014 and obtained her M.S. in Financial Economics in August, 2016 and her PhD in Financial Economics in May, 2018 from the Department of Economics and Finance. Her research interest includes entrepreneurial finance, financial institutions, and corporate finance.