

Equity Compensation and Organizational Survival: A Conceptual Framework

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The determinants of firm performance have long been of central interest to firm dynamics, human resource and strategic management researchers. While much of the existing literature dealing with productivity and profitability, the purpose of this review is to examine the most basic measure of performance: firm survival. In this research, we provide a conceptual framework detailing the mechanisms underlying the positive impact that equity compensation has on organization survival. Our model suggests that employee ownership constitutes a firm's competitive edge by operating through organization capital. It provides support on distributing equity awards to non-managerial employees.

INTRODUCTION

The determinants of firm performance have long been of central interest to firm dynamics and strategic management researchers. According to Short, Palmer, and Ketchen (2003), those determinants can be categorized to three primary levels: (1) firm; (2) strategic group; (3) industry. At the firm level, it is argued that some within-organization features help to shape firm performance. Consider, for instance, the resource-based view of a firm argues that a firm's bundle of assets and capabilities drives its performance (Zott, 2003). In the strategic group, researchers postulate that firms coalesce around a limited array of competitive approaches, and that some approaches offer better outcomes (Fiegenbaum and Thomas, 1990). Finally, at the industry level, researchers suggest that it is the industries where companies compete shape their performance (Rumelt, 1991). While productivity and profitability are commonly employed as the measurement of firm performance, the major interest of this research is on the most basic measure of performance: firm survival.

Most empirical evidence points to the fact that a high proportion of firms fails within a short period of time. The aforementioned three primary levels of determinants of firm performance also coincide with the three groups of factors that affect the survival chances of new enterprises extracting from prior research: (1) individual characteristics of the founder; (2) attributes, structural characteristics, and strategies of the business itself; (3) conditions characterizing the environment. Yet, employee compensation receives much less attention in the analysis of organizational survival. According to Beer, Spector, Lawrence, Mills, and Walton (1985), reward system is one of the four major policy areas of human resources about which all general managers must become knowledgeable. We believe that a firm's compensation arrangement plays a prominent role in recruiting, motivating, and retaining employees, and thus is central to building a durable advantage. It gives a competitive advantage to one corporation over its rivals and hence leads to an improvement in its surviving chance. In this study, we first briefly review the theories of firm survival and the research outcomes on the effects of equity compensation. This is followed by a

conceptual framework relating ownership awards to the likelihood of surviving. Particularly, we put much attention on equity compensation to non-managerial employees believing that such a compensating component relates significantly to the mortality of an organization and the underlying mechanisms are in need of further understanding.

There remain many unanswered questions within some areas of research. Our purpose is not to resolve those controversies but instead we try to highlight areas that worth future research effort. We do not claim to provide an exhaustive review of this literature and we admit that our views and interests influence our emphasis and inference. In the next section, we provide an institutional background on a typical compensation design and the prevalence of employee ownership. Section 3 briefly reviews the theories on firm survival and summarizes the existing research outcomes on the effects of equity compensation. Section 4 details the association and the mechanisms underlying employee ownership and organizational survival. Section 5 concludes and suggests avenues for future research.

INSTITUTIONAL BACKGROUND

There are several general elements in a typical compensation design: Salary, Bonus, Equity compensation, Debt compensation. Salary and bonus are typically the annual cash awards. Equity compensation is a non-cash compensation that represents a form of ownership interest in a company. Employees can obtain company stocks through various means, including Employee Stock Ownership Plan (hereafter: ESOP), stock awards, defined contribution pension plans such as deferred profit-sharing and 401(k) plans, and stock purchase plans and stock options programs. Although debt compensation is a relatively new concept, it has been in practice for a long time and can take the forms of, for instance, defined-benefit pension plans and deferred compensation.

In most organizations, compensation system is designed quite differently in structures as well as in levels for managers and for non-management employees. For example, while company stocks are granted to managers through stock awards or stock options, non-management employees typically obtain shares of the firm through pension plans (e.g. ESOP) or broad-based stock options programs. According to Kruse (2002), about one-fifth of American private sector employees hold equity in the company in which they work for if we combined all the various methods of owning employer stock. It is also suggested that granting company stock acts to supplement rather than substitute for other compensations.

THEORIES OF FIRM SURVIVAL AND THE EFFECTS OF EQUITY COMPENSATION

Theories of Firm Survival

According to Hopenhayn (1992), over forty percent of firms in manufacturing disappear over five year periods and are replaced by new ones. There is a long tradition of research investigating the factors determining the survival chance of a new business. Several theories and factors had been proposed and extensively researched, but the results are largely inconclusive (e.g. Cochran, 1981). First, organizational ecology emphasizes the relations between organizational characteristics, environmental conditions, and firm mortality. According to organizational ecologists, young and new organizations have a higher risk of failure than older organizations due to the “liability of newness”. That survival is positively related to age is a well-known observation (Freeman, Carroll, and Hannan, 1983; Bruderl and Schussler, 1990) and Jovanovic’s (1982) selection model was the first to predict such a positive relationship. But this age-dependent surviving profile is likely to follow an inverted U-shaped pattern instead of continuously declining mortality rate with increasing age (Freeman, Carroll, and Hannan, 1983; Bruderl and Schussler, 1990). Further, while relating to the “liability of smallness”, larger new businesses have better survival prospects than smaller new firms. This could be due to several factors such as the advantage in raising more capital or in a better position to recruit qualified labor (Dunne, Roberts, and Samuelson, 1989a, 1989b). Hence, the likelihood of surviving seems positively relate to the size of the firm (Dunne, Roberts, and Samuelson, 1989a, 1989b). Organizational ecologists also attribute firm survival to organizational strategies (e.g. Hannan and Freeman, 1977). Lastly, in connection with the markets where firms compete,

organizational ecologists argue that organizational selection processes are driven by environmental forces such as environment variability and environmental grain (Freeman and Hannan, 1983).

Second, the Human capital theory offers a comprehensive set of factors that influence the morality of newly formed businesses or organizations (Bruderl, Preisendorfer, and Ziegler 1992). The theory identifies individual characteristics of the founder as important prerequisites for survival. Among those, human capital endowment of the founder improves the surviving chances of her/his firm. Preisendorfer and Voss (1990) explored the effects of founders' human capital on the survival chance for a large set of German business and found that the likelihood of surviving is positively dependent on the founder's age (proxies the founder's human capital endowment). While it is plausible to assume that higher human capital endowment increases the productivity of the founder which in turn leads to a better surviving chance, it is equally probable that some selection effects may be responsible for the observed association between the human capital endowment of the founder and organizational survival. Consider, for instance, the prior experience of the founder in an industry may be an important determinant of the creation of her/his firm. Therefore, the relationship between the founder's personal characteristics and the firm's survival may be largely due to the pre-entry selection.

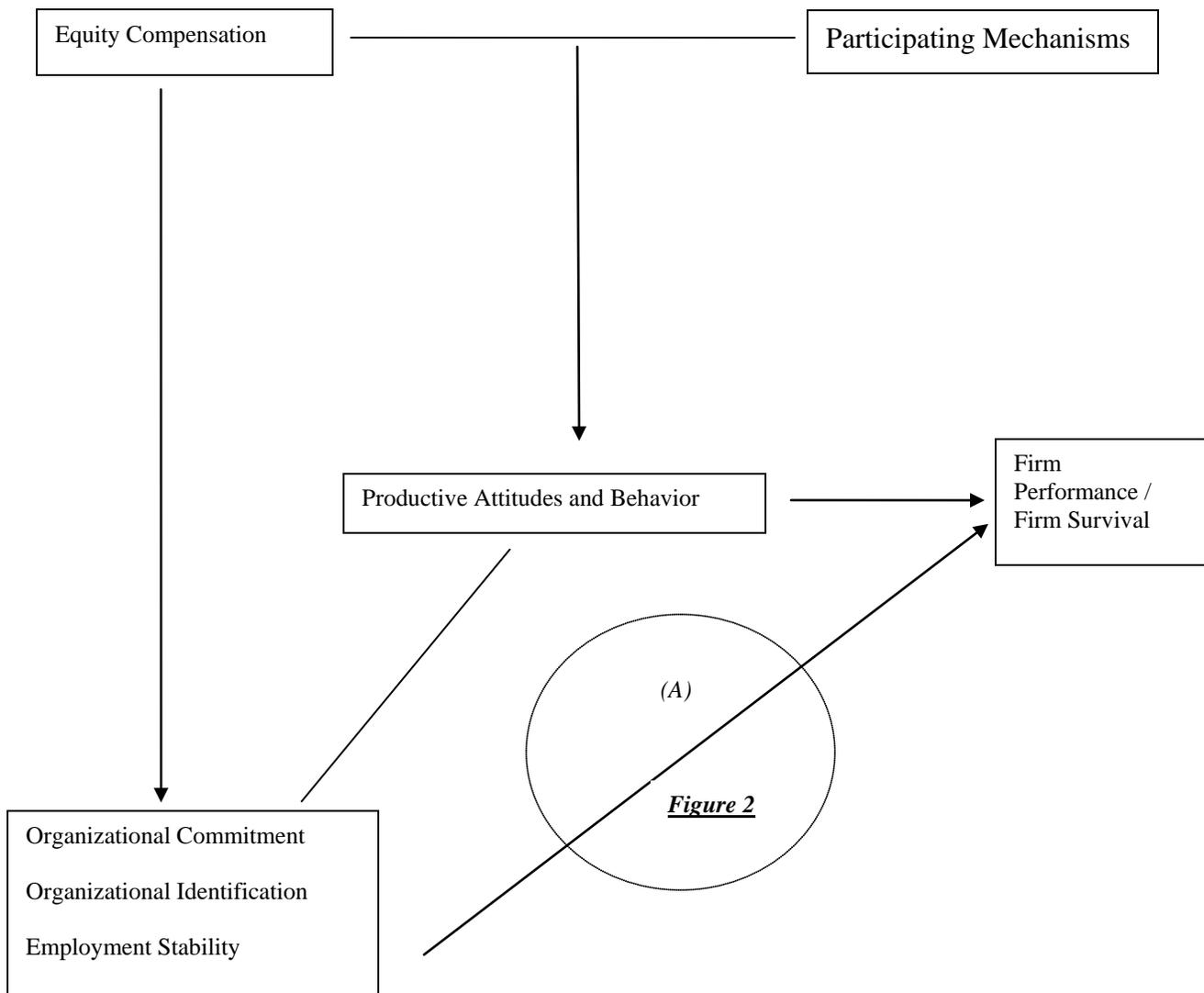
Third, the Contingency theory postulates that the organizations whose internal features best match the demands of their environment will achieve the best adaptation. The organizational survival then depends on the alignments of various internal and external factors such as leadership, environmental circumstances, and operating strategies. Lastly, the Resource-based view argues that a firm's bundle of assets and capabilities drives its performance (Zott, 2003). It also attempts to explain organizational outcomes from environment uncertainty and disturbances.

The Effects of Equity Compensation

The studies of equity compensation (or employee ownership) tend to focus on the effects of this remuneration component on employee attitudes/behavior, employment stability, employee wages/wealth and firm performance. Those effects can be illustrated in Figure 1. All arrows suggest a positive influence.

Most studies find higher organizational commitment and identification under employee ownership. Equity reward may lead to a bonding or integration of non-managerial employees with the organization. Through this process, employee ownership exercises an influence upon individual and hence group outcomes (Pierce, Rubinfeld, and Morgan, 1991). Yet, it is also suggested that there is no automatic improvement of attitudes and behavior associated with simply owning employer stock. Equity compensation has to be accompanied with some employee participating mechanisms to achieve the positive impact. Further, employee ownership is associated with greater employment stability without sacrificing efficiency. Company stock appears to come on top of rather than in place of other compensation. For the relationship between equity compensation and firm performance, studies are split between positive and neutral associations. Only very limited studies reveal negative findings. However, the meta-analysis of the ESOP studies conducted by Kruse and Blasi (1997) suggests that we could reject the null hypothesis of no significant relationship between employee ownership and firm performance based on the disproportionate number of positive and significant estimates. Finally, there was very limited number of studies available examining the effects of equity compensation on firm survival. Among those, Blair, Kruse, and Blasi (2000) tracked U.S. public firms from 1983 to 1995 and found that the firms with substantial employee ownership stakes were 20% more likely than their counterparts to survive through the periods. Similar findings can be found in Estrin and Jones (1992) and Park, Kruse, and Sesil (2004).

**FIGURE 1
EFFECTS OF EQUITY COMPENSATION**



EQUITY COMPENSATION AND FIRM SURVIVAL

While running through the literature, one can immediately identify the comparatively less attention received in one of the key aspects of human resource management – employee compensation arrangement and its role in firm survival. The structure of compensation is ultimately a lot more important than its level, because it gets to the heart of how employees behave and create value for firms/shareholders (Edmans, 2012). Compensation is considered an important part of the strategic thrust of human resource management. While there is a long history of studying the effects of compensation design on productivity, profitability, and employee behavior (Kruse and Blasi, 1997; Sesil et al, 2002), there is surprisingly little research on their impact on firm survival (Kruse, 2002). While it sounds intuitive to assume that better productivity or profitability improves the surviving chance, such an intuition is in fact not clear since the surviving chance of old firms may not entirely depend on its productivity. Indeed, according to Levinthal (1991), the connection between profitability and survival chance is directly connected for young firms but

not necessary hold for older firms. Hence, it seems probable that after a newly established organization survives the initial periods of its life cycle, the importance of other survival-determining factors outweigh profitability. This leads to the aforementioned inverted U-shaped survival-age profile. We believe studying employee compensation arrangement provides much useful insights.

An organization's employees provide an important basis for a sustainable competitive advantage – people-based resources or human capital. Such a capital is considered more durable and less susceptible to limitation than other types of assets and hence, may contribute to a firm's likelihood of surviving. Compensation system may give a competitive advantage to one corporation over its rivals (Schuler and MacMillan, 1984). We believe that this key aspect of human resource management is linked to firm survival and most importantly, there are crucial underlying mechanisms that worth understanding. In what follows, our primary interest is on the specific component – equity compensation and the mechanisms relating it to organizational survival.

Using data on all U.S. public companies as of 1988, Park, Kruse, and Sesil (2004) show that companies with employee ownership stakes of 5% or more were only 76% as likely as firms without employee ownership to disappear. The estimation results in Blair et al. (2000) also suggest a higher survival rate in public firms with substantial equity compensation. Yes, with regard to the reasons of non-surviving, their sample suggests only one firm with substantial employee ownership stakes disappeared due to reasons such as bankruptcy, liquidation, or private buyouts while other non-surviving corporations exit because of mergers or acquisitions. Hence, although those firms “nominally” disappeared, they were not “non-surviving”. Instead they were merged or acquired by other companies. This implies that the disappearing firms may in fact have some valuable assets (intangible, we believe) that attracts the interests from other firms (Jovanovic and Braguinsky, 2004) which results in the mergers or acquisitions. Therefore, the association between survival and equity compensation suggested by Park et al. and Blair et al. may be greatly under-estimated. We speculate that employee ownership closely relates to the valuable assets, which, in turn, improves a firm's likelihood of surviving. Thus, we propose that:

Proposition (A): Equity compensation increases the likelihood of firm survival.

The *Proposition (A)* is shown as the dashed circle in Figure 1. A detailed conceptual framework/mechanism relating equity compensation to firm survival is provided in the following section and is depicted in Figure 2.

As introduced earlier, a typical non-managerial employee can obtain her/his company stocks via various channels such as pension plans (e.g. ESOP), stock awards, and broad-based stock option plans. These granted shares constitute the employee's equity compensation. By theory, equity compensation is intended to have the following effects: motivation, retention, and selection. Not surprisingly, Agency theory is the theoretical perspective largely used to evaluate the potential performance consequence of granting equity compensation. The theory postulates that rational self-interest, risk-aversion, and effort-aversion drive agent behavior and create agency costs for a firm's owners (Fama and Jensen, 1983; Jensen and Meckling, 1976). If the parties to the principal-agent relationship had complete information about each other, self-interested behaviors could be eliminated by developing a contract that reward productive behaviors and discourage unproductive ones (Alchian and Demsetz, 1972). On the other hand, while incomplete information holds, incentive contracts are developed in an attempt to align the interests of shareholders and employees. In turn, equity compensation is largely viewed as an incentive plan. However, due to the line of sight issue and the potential free rider problem, the granting of equity to non-management employees is predicted to have an unclear incentive effect (Oyer and Schaefer, 2005). According to Alchian and Demsetz (1972), within the framework of single-period game theory, when there is a group reward to be shared and individual effort is difficult to observe, employees are expected to shirk and free-ride on the effort of others. In turn, the larger the group, the more severe the free-rider problem because the rewards are to be shared with many others (Weitzman and Kruse, 1990) resulting in a dilution of the incentive effect.

On the contrary, equity compensation may increase efficiency by giving employees incentives to cooperate with the management and with each other. It also may promote mutual monitoring. Therefore, the free rider problem may be mitigated by peer pressure not to shirk and lowering monitoring cost (Blair et al., 2000). This is particularly critical in a company where centralized monitoring of employees is costly and worker cooperation is indispensable to success. By utilizing the data on Continental Airlines, Knez and Dimester (2001) show that group incentive programs have positive impact on firm performance if the firm's operating units are more interdependent. They indicate that the positive effect derives from the incentives on employees to mutually monitor. Kandel and Lazear (1992) argue that orientation and indoctrination about workplace norms when employees are hired improves the effectiveness of group-based pay by creating a work environment with mutual monitoring and peer pressure. The studies on ESOP also indicate that for closely held companies, the combination of ownership and participative management is a powerful competitive tool. Neither ownership nor participation mechanisms alone, however, accomplishes very much. Several intra-industry studies (e.g. Arthur, 1994; Ichniowski, Shaw and Prennushi, 1997) suggest that the adoption of a coherent system of new human resource management practices along with extensive reliance on group-based incentive pay results in substantially higher levels of productivity.

In addition to the potential incentive effects, due to the vesting requirement associated with a typical equity reward, its use may promote employee retention. Further, since the value of equity compensation is dependent on firm performance, less risk-averse employees who believe the firm has positive growth prospects may be attracted to the firm which leads to a selection effect. Better retention and selection in turn help to reduce employee turnover and promote firm-specific human capital (Lin and Sesil, 2011).

While the founder's human capital endowment is a critical determinant of a firm's survival according to the Human capital theory, we believe that non-managerial employees' human capital has an equally non-neglectable impact on organizational survival. Becker (1993) distinguishes between general and specific human capital. The general human capital is acquired mainly through education while the specific human capital is obtained via in-job experience and training. Since the firm-specific human capital is mostly only valuable to the current employer and is thus non-transferrable, an investment in firm-specific human capital is fairly risky from the point of view of individual employees. The firm (ex post) may threaten not to use the services rendered by the investment as a way to extract a greater share of the surplus value that has resulted from this investment (Robinson and Zhang, 2005). Similarly, the employees may act much the same way to extract greater returns for themselves. Equilibrium exists when both firms and employees refrain from paying for any investments in this specialized human capital (Lin, 2013). This action will seriously dilute a firm's competitive advantage and hence damages a firm's surviving chance. Yet, it is important to note that the vast majority of human capital exists somewhere between firm-specific and general (Stevens 1996; Becker 1993). The combination of the two boundaries suggests, therefore, that equity compensation may be used to encourage and safeguard investments in firm-specific human capital (Lin, 2013). Indeed, according to Blair (1995) and Inderst and Mueller (2007), employee-owned companies are the ultimate examples of governance structures that empower employees and protect investments in firm-specific human capital.

Thus, we propose that:

Proposition (B): While equity compensation is employed in an attempt to encourage and safeguard investments in firm-specific human capital, there is a positive relationship between equity compensation and investment/participating in training.

Further, in virtually every industry, some firms systematically outperform others such as Intel in semiconductor. Such outstanding performance cannot be entirely attributed to highly advanced physical capital investments or competition-constraining regulations, but rather as the consequence of a special asset of the firms (Lin and Sesil, 2011). According to Prescott and Visscher (1980), this special asset is organizational capital. It is defined as a type of unmeasured capital that is distinct from the concepts of

physical or human capital in a standard growth model. Organization capital is the knowledge used to combine human skills and physical capital into systems for producing and delivering want-satisfying products. It relates but is not limited to the following: (a) operating capabilities; (b) investment capabilities; and (c) innovation capabilities (Evenson and Westphal, 1995). Organization capital can be embodied in employees (e.g. Jovanovic, 1979) or can be a firm-specific capital good jointly produced with output and embodied in the organization itself (e.g. Rosen, 1972). Regardless of embodying in employees or organizations, it is important to recognize the close association of firm-specific human capital and organization capital.

According to Hambrick and D'Aveni (1988), a firm's failure in a given year is not due solely to poor performance but is likely to be associated with an erosion of its competitive position over a period of time. Hence, the relationship between organizational age and mortality in fact reflects a dynamic accumulation process of a firm's organization capital. This suggests that it is indeed necessary to incorporate human resource theories and practices in the studies of organizational survival.

Since organization capital is recognized as a special and key asset that helps a firm to maintain and improve its competitive edge, its accumulation process becomes a critical issue within corporate management. Further, since firm-specific human capital is closely related to organizational capital, turnover is important since costs are imposed on firms. Such costs may take various forms, such as the costs associated with specific training (Becker, 1993) and hence the loss of organization capital (Lin and Sesil, 2011).

Within a firm, turnover is composed of two flows, quits (voluntarily turnover) and layoffs (involuntarily turnover); yet both can be harmful to a firm. While quits occur, the firm loses all the investments in the firm-specific human capital (such as the costs of training) and the contributions toward organizational capital. On the other hand, layoffs lead to an unstable working environment which may discourage employees (firms also) from investing in firm-specific human capital. In both instances, the accumulation of organization capital will be greatly limited and hence the surviving chance of a firm may be hampered. Therefore, in the context of firm-specific human capital and organization capital, both parties (employees and firms) will have incentives to reduce turnover since exit declines returns on the investment. The findings that (as depicted in Figure 1) employee ownership promotes employment stability seem to agree to this argument. Thus, we propose that:

Proposition (C): Equity compensation operates on organization capital by operating through employment stability and the investments in firm-specific human capital. In turn, employee ownership is positively and causally related to organization capital.

However, the investment in firm-specific human capital is not necessary the only mechanism leads to the accumulation of organization capital. The capital-skill complementarity needs to be considered also. Starting from Griliches (1969), researchers have been intrigued by the idea that physical capital and skilled labor are relatively more complementary than physical capital and unskilled labor. Several researchers (e.g. Duffy, Papageorgiou, and Perez-Sebastian, 2002; Flug and Hercowitz, 2000) provide evidence supporting the capital-skill complementarity hypothesis. Throughout the twentieth century significant shifts in labor demand have favored more skilled and educated labor (e.g. Goldin and Katz, 1999). The shift toward more skilled workers appears to have accelerated especially over the period from 1980 until the mid-1990s. Quantitative research has already made it clear that there is a correlation – if not necessarily causation – between information technology (IT) use and skill at the worker, firm, and industry level (e.g. Autor, Katz, and Krueger., 1998). Bresnahan, Brynjolfsson, and Hitt (2002) find evidence of strong complementarity between several indicators of IT use and the demand for skilled labor. The work by Juhn, Murphy, and Pierce (1993) suggests a sharp rise in skill premium in the 1980s. The primary explanation for the general rise in returns to skill as offered by the authors is that the demand for skill rose in the United States over this period. The skill premium may appear in the form of equity compensation which is generally on top of rather than replacing current compensations. Further, besides the compensation purposes, the skill premium in the form of equity ownership attempts to attract and

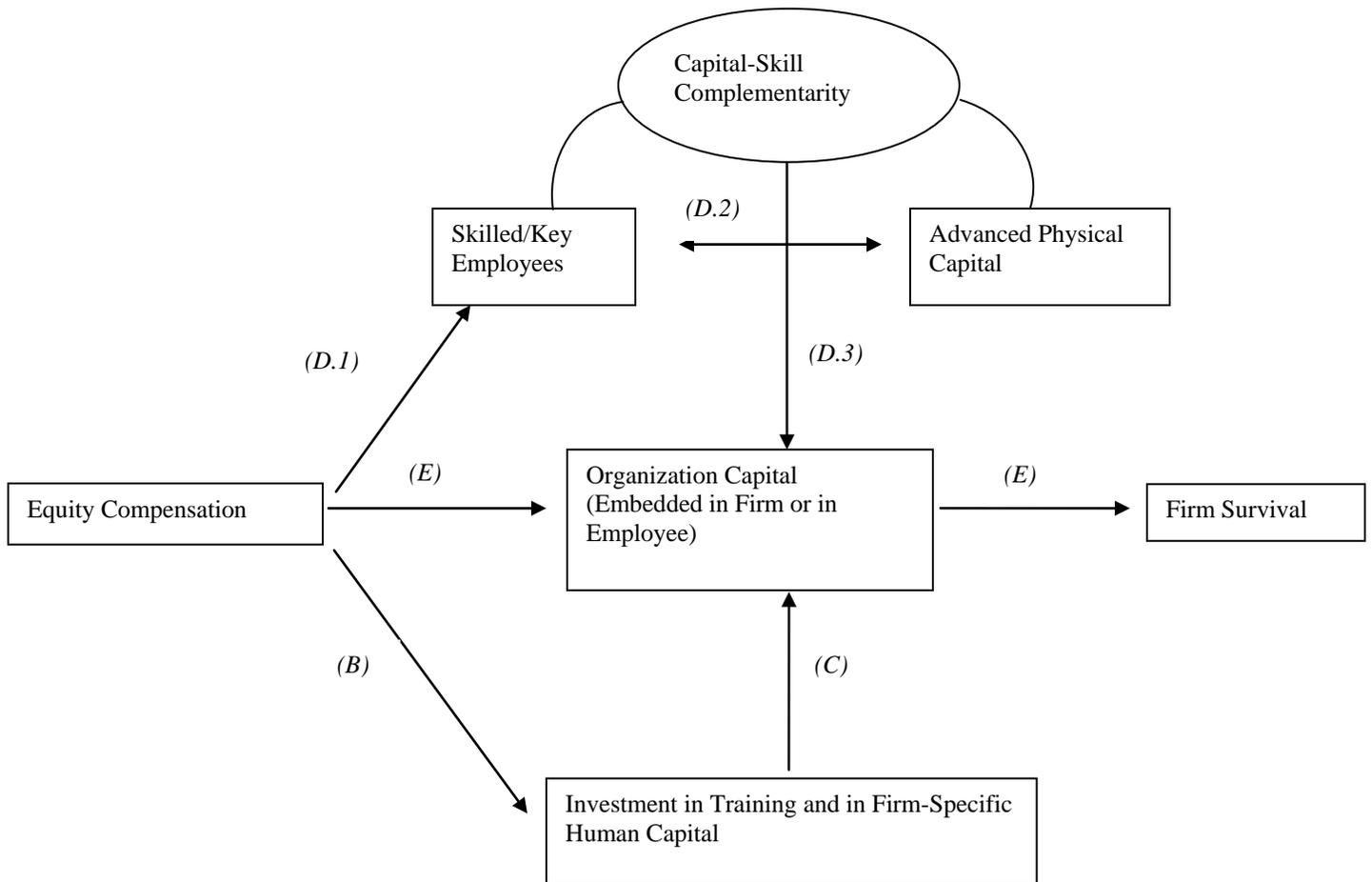
retain skilled employees. Consider, for instance, Kedia and Mozumdar (2002) find that firms grant stock options to retain key employees and that firms' use of options to retain key employees creates value and is associated with positive abnormal return by using a sample of 200 large NASDAQ firms. The uneven distribution of equity compensation among employees also seems to agree to this attempt. Therefore, we believe that the capital-skill complementary in a production process not only improves efficiency but also leads to the joint production of organization capital. Thus, we propose that:

Proposition (D): (1) Highly skilled employees will be more likely to obtain ownership shares; (2) Equity compensation is more common in the industries that tend to employ more advanced physical capital;(3) Capital-skill complementary contributes positively to organization capital.

Lastly, while equity compensation is employed to encourage investments in firm-specific human capital and to attract and retain skilled labor, through capital-skill complementarity, it contributes positively to organization capital. Given that organization capital constitutes a firm's competitive edge, we believe equity compensation improves the likelihood of a firm survival through this important asset. Hence, organization capital serves as the variable mediating the positive association of equity compensation and organization survival in *Proposition (A)*. Thus, our last proposition reads:

Proposition (E): The positive impact of equity compensation on firm survival is mediated by organization capital.

FIGURE 2
THE MECHANISMS RELATING EQUITY COMPENSATION TO FIRM SURVIVAL



CONCLUSION

As noted above, there is a very limited literature on studying the relationship between equity compensation - a key area of human resource management, and organizational survival. Unlike much of the prior research on employee equity compensation where the focus is on employee behavior, employment stability, productivity, and profitability, we shed some light on the association between ownership awards and the most fundamental business goal – firm survival. We propose a conceptual framework relating equity compensation and the likelihood of surviving. While company shares are granted in an attempt to retain and attract key employees, the capital-skill complementary contributes to the accumulation of organization capital. Moreover, employee ownership also holds value on encouraging and safeguarding investments in firm-specific human capital which leads to an improvement in organization capital. Overall, our model suggests organization capital the variable mediating the positive impact of employee ownership on firm survival.

The mechanisms underlying the association are of great interest to the fields of firm dynamics, corporate management, and human resource management. This study also holds significant value and actionable implications to HR professionals, particularly those responsible for designing and evaluating compensation arrangements in several ways. First, as a totality, it suggests that in addition to business strategies, the founder’s characteristics, and competing environments, employee compensation arrangement, of which firms have relatively more control, is as well a critical area that helps improving

organizational survival. Second, the arguments of the effects of equity compensation on firm survival can serve as a support for distributing ownership shares to non-management employees. Third, it helps to understand the channels and mechanisms underlying the impact of non-managerial employee shareholdings on organizational mortality. The underlying mechanisms offer a different perspective in examining and understanding of firm dynamics. We believe our arguments yield several testable hypotheses that could be examined with appropriate data.

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