

**Benefits and Strategic Outcomes: Are Supplemental Retirement Plans and Safer Driving
Related in the U.S. Trucking Industry?**

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ABSTRACT

We suggest that a firm's benefits can relate to important organizational outcomes that have strategic implications. We propose a number of mechanisms which could relate benefits to strategic outcomes including the notion that benefits can help attract and retain the type of employees who are most likely to perform in ways consistent with the firms' strategies. We illustrate this with the case of supplemental retirement benefits in an actual setting, the long-haul trucking industry. We report positive organization-level relationships associated with the management choice of offering these benefits. Our results show that firms offering supplemental retirement plans engage in significantly safer driving practices, as measured by the proxy of driver insurance costs, as hypothesized. These findings show that benefits can be related to outcomes that have strategic implications for the firm. By showing that retirement plans may be of value to organizations, we help to bridge the academic-practitioner divide and provide motivation and guidance for additional work on this important, but under-researched topic.

Keywords: Benefits, HR Strategy, Retirement Plans, Risk, Safety

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Compensation practices have been shown to have substantial effects on firm outcomes (Gomez-Mejia, Berrone, & Franco-Santos, 2010; Werner & Ward, 2004; Gerhart & Rynes, 2003; Gomez-Mejia & Balkin, 1992). Compensation practices have been related to a firm's business, division, and corporate strategies, and their level of success (Yanadori & Marler, 2006, Boyd & Salamin, 2001, Gomez-Mejia, 1992; Balkin & Gomez-Mejia, 1987). They have also been shown to affect financial performance (Gerhart & Milkovich, 1990), organizational learning (Jerez-Gomez, Cespedes-Lorente, and Valle-Cabrera, 2005), and workforce performance (Shaw, Gupta, & Delery, 2002). The amount and type of benefits that employees receive is an important component of a firm's compensation strategy (Martocchio, 2014).

The use of non-monetary rewards, which include benefits such as insurance and paid time off as well as the design of the job and social atmosphere at work, has consistently been acknowledged as an important factor in employee perceptions, feelings, and behaviors (Kwon and Hein, 2013; Martocchio, 2011). Although important, the strategic use of the benefits component of compensation strategy has received little research attention. One reason may be that benefits tend to be common, widely disseminated, and easy to imitate. According to the Resource Based View of the firm, because benefits are not unique or difficult to imitate they do not meet the requirements needed to relate to sustainable competitive advantage for firms (Barney, 1999). Although it may be difficult to use benefits to directly help create a sustainable competitive advantage, the benefits firms offer may be related to important organizational outcomes that have strategic implications (Jackson, Schuler, and Werner, 2012).

How can firm benefits be related to strategic outcomes? One answer may be related to their role in the attraction and retention of strategically important human capital. The literature

on person-organization fit as well as the literature on attracting and retaining employees suggests that various different types of benefits will be more attractive to different types of employees (Boon, Den Hartog, Boselie, and Paauwe, 2011; Wingreen and Blanton, 2007; Cable and Judge, 1994). Because different employees bring with them varying levels of competence, risk-propensity, and attitudes, their resulting behaviors will also differ. However, this is just one possible mechanism that would explain a relationship between benefits and important outcomes, others include that certain benefits may be a standard part of certain compensation and HR strategies, or better benefits may lead to greater retention of better employees (Schiller and Weiss, 1979).

We test for a relationship between benefits and outcomes using firms in the U.S. trucking industry. We suggest that trucking firms that offer supplemental retirement plans (defined contribution or defined benefit plans), will have lower property and liability insurance premiums, a proxy for the safer driving behaviors of employees. We propose a number of mechanisms that would suggest such a relationship. This includes the notion that companies with retirement plans are more likely to attract employees that are less-risk seeking and therefore will also be less risk-seeking in their actual driving behaviors, resulting in lower accident rates and fewer incidents of illegal driving behaviors (Tetric, Weathington, Da Silva, and Hutcheson, 2010; Dencker, Joshi, and Martocchio, 2007). Other mechanisms include offering supplemental retirement plans as part of a paying above the market compensation strategy or as part of a high performance work system (HPWS). We believe that finding a firm level relationship between retirement plan offerings and safe driving practices has important implications for how firms can use benefits to affect important strategic outcomes. One such implication is that firms may be able to determine the type of employees that are attracted to various different benefits and provide the benefits that attract and retain the employees most likely to behave in a manner consistent with the firms' desired outcomes.

USING BENEFITS STRATEGICALLY

Benefits are a critical part of a total reward program (Kwon and Hein, 2013). Employee benefits have a substantial impact on society as a whole, the employees themselves, and the organization (Rappaport, 2013). Employee benefits impact society by providing a greater safety net for those employed, reducing the need for government spending, and allowing recipients to benefit the economy by buying more consumer goods (Rappaport, 2013). Employee benefits impact employees by providing them with insurance and services that they might otherwise not have. Finally, benefits impact organizations through their costs, shaping of employee behaviors, and role in attracting and retaining human resources (Dulebohn, Molloy, Pichler, and Murray, 2009; Lucero and Allen, 1994; Mueller, 1996).

Because benefits are easy to imitate, it may be difficult to directly help create a sustainable competitive advantage through the use of benefits; however, they may have strategic implications through a number of mechanisms (Jackson, Schuler, and Werner, 2012). First, because of their substantial and increasing cost, benefits have a direct effect on financial performance measures (Martocchio, 2014; Dulebohn, Molloy, Pichler, and Murray, 2009). In 2012, the average cost of benefits was about 31% of total compensation, or about \$19,700 a year for each employee (Bureau of Labor Statistics, 2012). Costs are an important factor that should be considered in any HR strategy (Klaas, 1999).

Second, benefits can support business strategies. For example, a company may establish a corporate-giving matching fund to help meet their strategic objective of becoming a recognized leader in corporate social responsibility. Employers can indirectly support business strategies by providing benefits and services that help shape a company's culture that is supportive of the business strategy (cf. Martocchio, 2014; Mueller, 1996).

Third, benefits can be instrumental in attracting and retaining human capital. Benefit satisfaction has been shown to be a distinct construct from other aspects of compensation (Williams, Malos, and Palmer, 2002; Williams, 1995). Benefits, particularly health care and retirement plans, play a significant role in the attraction and retention of employees (Dulebohn, Molloy, Pichler, and Murray, 2009; Lucero and Allen, 1994). For example, Garcia, Posthuma and Quinones (2010), found when applicants viewed company ads that included detailed benefit information their intentions to pursue the job increased. This effect was significantly stronger for married applicants. Practitioner surveys consistently show that the majority of employees state that benefits are important factors in their loyalty to their employer (Miller, 2006). Academic research is consistent with this view. For example, Yamamoto (2011) found that family friendly benefits were significantly related to employee retention and Schiller and Weiss (1979) concluded that supplemental retirement benefits reduce turnover by as much 20%.

The literature on using benefits to attract and retain talent tends to focus on how benefits can be used to get workers to apply for employment and how benefits can keep employees from joining competitors. Presumably, valid selection devices are then used to select the best of the applicants, and performance management systems are used to assure continued high performance. However, we believe that there is another mechanism of how the use of benefits to attract and retain human capital can support a firm's strategies. Specifically, we suggest that different benefits will attract applicants and retain employees with different attributes that can have strategic implications. We believe this notion (and its empirical support) makes an important contribution regarding the strategic implications of benefits.

Although this notion has not yet been explicitly introduced or tested in the academic literature, the practitioner literature has long discussed benefits in terms of using them to attract and retain targeted groups. Examples include child care and other family friendly benefits to target women; long-term care and grandparent leave to target older workers; and tuition

reimbursement, flextime, and concierge services to target younger workers (Brenner, 2010; 2007; Clark, 2007).

The strategic use of benefits and its consequences for the firm is a macro-level phenomenon; however, the attraction and retention of individual employees is a micro-level phenomenon. Thus, we use a meso-theoretical approach in this paper. Meso approaches link micro and macro concepts across levels through cross-level theory, methods, or analyses (Mathieu and Taylor, 2007). Meso approaches have been used for a broad range of organizational research (Klein and Kozlowski, 2000), ranging from OB topics (Mathieu, Maynard, Taylor, Gilson, and Ruddy, 2007) to International Business topics (Fu, et al., 2002). The hypothesized relationships we specify are between macro level variables; however, we believe that the mechanisms that drive these relationships occur at the micro level. Therefore, we use meso-theorizing, but our methods and analysis are at the macro level. Meso-theorizing is an increasingly popular way to provide insights beyond uni-level theorizing (Dasborough, Ashkanasy, Tee, and Tse, 2009; Yammarino, Dionne, Schriesheim, and Dansereau, 2008)

Using Benefits to Target Human Capital

There is considerable evidence that benefit preferences, usage, and satisfaction vary considerably among individuals and demographic groups. For example, older workers have stronger preferences for retirement plans than younger workers; younger workers prefer time off more than older workers; and those with children prefer flexible schedules, child care, family leaves and health and medical benefits more than those without dependents (Milkovich, Newman, and Gerhart, 2011; Jackson, Schuler, and Werner, 2012). However, preferences are not necessarily always identifiable through demographic information (Dulebohn, Murray, and Sun, 2000).

Why do employees have differing preferences for benefits? We suggest two possible explanations. First, the literature on person-organization fit suggests that various different types of benefits will be more attractive to different types of employees. Person-organization (P-O) fit is the compatibility between commensurate individual and organizational characteristics (Kristof-Brown, Zimmerman, and Johnson, 2005). P-O fit has been shown to be significantly related to applicants' attraction to an organization, and whether they accept a job offer (Kristof-Brown, Zimmerman, and Johnson, 2005; Dineen, Ash, and Noe, 2002). HR practices in general, and compensation practices, specifically, have been found to be significantly related to P-O fit (Boon, Den Hartog, Boselie, and Paauwe, 2011; Wingreen and Blanton, 2007; Cable and Judge, 1994). No studies have looked at the effect of various benefits on P-O fit, although Cable and Judge (1994) did find that job seekers with a high internal locus of control (a belief that they rather than the environment control their fate) were more attracted to organizations that offered flexible benefits. (Flexible benefits allow employees to choose the benefits they find the most desirable.)

Second, the utility of each benefit will vary among employees. Benefits will have differing economic and non-economic value to different employees. The greater the utility of the benefit to the employee, the more they will be interested in working for an employer, other things being equal, who provides that benefit. For example, employees who are more likely to go to graduate school while working would be more attracted to an organization that offers tuition reimbursement benefits than those who have no interest in graduate school (Martocchio, 2011).

Given that different benefits attract different people, if firms could identify important character traits that correspond to specific benefit preferences, firms could help shape the characteristics of their workforce through their benefit offerings. Assuming that these employee characteristics translate into worker behaviors and subsequent strategically important behavioral

outcomes, firms could use benefits to help support their strategies. The specific research question posed here is: Are there benefits firms can offer that will ultimately result in different employee behaviors that have strategic implications? We look at retirement income benefits in the U.S. long-haul trucking industry to illustrate and empirically test this research question.

Retirement Income Benefits

Retirement income benefits provide a stream of income to employees after they are no longer working. In the United States, the government mandates a minimal level of retiree income through the Social Security Agency. Thus, the discretionary benefits provided by employers are known as supplemental retirement income benefits. As with benefits in general, we would expect individual differences in employee preferences for supplemental retirement income benefits: But which employee characteristics are associated with greater preferences for supplemental retirement benefits? A number of studies have looked at which individual characteristics are related to supplemental retirement plan participation and investment decisions. These studies should be consistent with those looking at the differences in the utility of supplemental retirement benefits, given that it is logical to deduce that those who participate and invest more in retirement plans attach more value to a supplemental retirement plan. Supplemental retirement plan participation and investment decisions appear to be largely influenced by plan features (e.g., portability), demographic characteristics, and individual dispositions.

Retirement income benefits, demographic characteristics, and safer driving. Demographic characteristics that have been found to be significantly related to participation and investment decisions include age, income, education, gender, and marital status (Gough, 2004; Dulebohn, 2002; Dulebohn, Murray, and Sun, 2000). The findings of studies looking at the employee preferences for firms with supplemental retirement benefits have found results consistent with

studies of plan participation and investment decisions. Demographics such as age and marital status have been identified as variables related to stronger preferences for retirement plans (Tetric, Weathington, Da Silva, and Hutcheson, 2010; Dencker, Joshi, and Martocchio, 2007). These findings are consistent with both the person-organization fit view and utility view of benefit attraction. For example, it is reasonable to surmise that older workers would feel they are more compatible with an organization that provides a supplemental retirement plan, and that such a plan would have greater economic utility to older employees.

Continuing to use the trucking industry as an example, we believe that these demographic characteristics are related to employee behaviors, specifically, in this case, to safe driving behaviors. For example, there is a large volume of research that shows that there is a strong positive relationship between age and safe driving behaviors. Younger drivers are more likely to engage in driving violations (speeding, tailgating, driving through red lights, etc.), have accidents, drink and drive, and not use seat belts (Harrington and McBride, 1970; Parker, Reason, Manstead, and Stradling, 1995; Boyle, Dienstfrey, and Sothoron, 1998; Lourens, Vissers, and Jessurun, 1999; Shinar, Schechtman, and Compton, 2001; Boyce and Geller, 2002). Similar results have been shown with respect to gender. Men are more likely to engage in driving violations (speeding, tailgating, driving through red lights, etc.), have accidents, drink and drive, and not use seat belts than women (Harrington and McBride, 1970; Parker, Reason, Manstead, and Stradling, 1995; Boyle, Dienstfrey, and Sothoron, 1998; Shinar, Schechtman, and Compton, 2001). Thus, the literature strongly suggests that retirement plans are more likely to attract and retain older workers who generally are safer drivers than younger workers and females who generally are safer drivers than males. Further, although the evidence is not as strong, the literature also suggests the possibility that retirement plans are more likely to attract and retain married workers who are generally safer drivers than single workers (Harrington and

McBride, 1970) and more educated workers who are somewhat safer drivers than less-educated workers (Shinar, Schechtman, and Compton, 2001).

Retirement income benefits, dispositional and attitudinal variables, and safer driving.

Dispositional and attitudinal variables also suggest a relationship between offering a retirement plan and safer driving. Dispositional and attitudinal variables that have been found to be significantly related to supplemental retirement plan participation and investment decisions are largely related to the notion of risk. In this context, we define risk in the classic tradition as a function of the variation in the distribution of possible outcomes, their associated likelihoods, and their values (Stewart and Roth, 2001), where greater variation, less certainty of positive events, greater certainty of negative events, and higher values are all indicators of greater risk. Supplemental retirement insurance provides employees with additional stable income when they retire, lowering the probability that employees' will encounter financial difficulties when retired. Like all insurance plans, they are a form of reducing risk because they provide greater certainty of income and less variance in its distribution. Thus, applicants with a greater general propensity against risk are more attracted to firms that offer a supplemental retirement insurance plan (Tetric, Weathington, Da Silva, and Hutcheson, 2010), and are more likely to continue working for them (Vardaman, Allen, Renn, and Moffitt, 2008; McCarthy, 2006).

What behaviors could be expected from employees with a greater general propensity towards risk? Risk propensity is related to a wide range of behaviors and (subsequent) outcomes. The behaviors most relevant to the workplace related to risk propensity include more entrepreneurial versus managerial behaviors (Stewart and Roth, 2001), more risky decision-making behavior (Sitkin and Weingart, 1995), more gambling behaviors (Warneryd, 1996), having lower demands in self-reported facets of job acceptance (Pannenberg, 2010), and being more likely to choose pay for performance pay plans (Cadsby, Song, and Tapon, 2007). The

behaviors most relevant to drivers in trucking companies related to risk propensity are various unsafe driving practices. Unsafe driving practices increase risk because they increase the probability of highly negative outcomes and increase the distribution of possible outcomes (for example, drunk driving increases the probability and distribution of getting into an accident, injuring yourself or others, and getting arrested). Numerous studies have found that general risk propensity and risk aversion are significantly related to a number of different unsafe driving practices (Swartz and Douglas, 2008; Preusser, Williams, and Lund, 1991; Hatfield and Fernandes, 2009; Iverson, 2004; Knipling et al., 2004). Thus, another mechanism through which offering a supplemental retirement plan may relate to safer driving is that risk averse employees are more likely to be attracted and retained by firms with a supplemental retirement plan and risk averse employees are more likely to engage in safer driving practices.

Other Mechanisms That Relate Retirement Plans to Safe Driving.

Although we believe that a relationship between offering a retirement plan and safer employee driving is reasonably explained through the attraction and retention of employees with specific characteristics, other mechanisms could also suggest such a relationship. These explanations include the notions that retirement plans may be part of a compensation strategy or an HR practices bundle that allows the firm to attract and retain better employees, or that the supplemental retirement benefit generally fosters greater retention which leads to more experienced and senior employees.

Retirement income benefits, other HR practices, and safer driving. It is possible that providing supplemental retirement insurance is associated with certain compensation or HR strategies, which in turn, increase the ability of the organization to attract, retain, and motivate high quality workers. Although the role of benefits is seen to be important in compensation strategies (Martocchio, 2014), few studies have looked at how benefits directly relate to different

compensation strategies. Nevertheless, theoretically benefit strategies should be consistent with pay strategies, thus high benefit levels would be expected to be offered by firms that follow a paying above the market compensation strategy (Martocchio, 2011). Consistent with both efficiency wage theory and equity theory, paying above the market compensation strategies lead to positive employee responses including higher motivation, greater retention, and greater attraction of prospective employees (Milkovich, Newman, and Gerhart, 2011; Williams, McDaniel, and Nguyen, 2006; Brown, Sturman, and Simmering, 2003). Thus, assuming that organizations with a paying above the market compensation strategy are more likely to offer supplemental retirement plan benefits and that such firms get a better applicant pool allowing them to select safer drivers, we would expect a correlation between offering a retirement plan and safer driving.

This same line of reasoning could be applied to a broader set of HR practices. For example, firms with strong investments in HR may offer more benefits as well as more training, higher pay, extensive safety programs, etc., which could lead to improvements in safe driving. Possible evidence of this can be found in the High Performance Work Systems (HPWS) literature, where comprehensive benefits is generally seen as a component of HPWS (Posthuma, Campion, Masimova, and Campion, 2013). Given the generally stable positive outcomes of HPWS (Jiang, Lepak, Hu, and Baer, 2012; Werner, 2011; Guthrie, Flood, Liu, and MacCurtain, 2009), if organizations using HPWS are more likely to offer supplemental retirement plan benefits and HPWS firms can attract safer drivers, we would expect a correlation between offering a retirement plan and safer driving. Although the relationship between HPWS and retention has not been clearly established (Messersmith and Guthrie, 2010; Patel and Conklin, 2010), a direct relationship between retirement plans and retention provides other mechanisms relating retirement plans to safer driving.

Retirement income benefits, their effect on retention, and safer driving.

Because the actual and perceived economic value of supplemental retirement benefits increase with value as employee tenure increases (due to vesting requirements, possible non-portability, increased saliency, and tenure driven pay-out formulae), supplemental retirement plans are related to greater retention of employees (Schiller and Weiss, 1979). This provides a number of additional justifications for the retirement plan – safer driving relationship. First, because less turnover (greater tenure) is negatively related to age (Griffeth, Hom, and Gaertner, 2000) and age is related to safer driving (Shinar, Schechtman, and Compton, 2001; Boyce and Geller, 2002), we would expect firms with longer tenured employees to have safer driving. Second, because turnover is positively related to experience (Griffeth, Hom, and Gaertner, 2000), and experience is related to safer driving, we would expect firms with longer tenured employees to have safer driving. Finally, because firms with longer tenured employees experienced less involuntary turnover making them more likely to retain their best drivers (while still being able to separate from their worst drivers through involuntary turnover), we would expect firms with longer tenured employees to have safer driving. Formally, based on the justifications of demographic characteristics, dispositional and attitudinal variables, relationship to other HR practices and implications for retention, we hypothesize the following:

HYPOTHESIS 1: Offering a supplemental retirement plan will be positively related to safer employee driving practices in trucking companies.

Firm Size as a Moderator

Further, based on the dispositional justification of hypothesis 1, we suggest that the relationship between offering supplemental retirement benefits and safer driving practices will be greater for smaller firms. We believe that firm size will moderate the relationship between offering a retirement plan and safer driving practices because the attraction and retention effect

of a retirement plan to risk averse workers will be greater in smaller firms. Larger firms offer greater security and less risk in numerous ways, including greater employment stability (i.e., less employment risk and variability), lower failure rates, greater insurance offerings, and more diverse career opportunities (Winter-Ember, 2001; 1995; Jackson, Schuler, & Werner, 2012;). This is similar to the features of public firms, which have been shown to attract and retain risk averse employees more than private sector firms (Bellante and Link, 1981). Given that large firms are substantially more attractive to risk averse workers, large firms can not gain much from the addition of a supplemental retirement benefit. This is, however, not true of smaller firms, who may become substantially more attractive to risk averse employees with the addition of a supplemental retirement benefit. That is, the addition of a supplemental retirement benefit can compensate for the greater perceived riskiness of employment in a smaller firm. Additionally, by offering a supplemental retirement benefit, smaller firms may be signaling to risk adverse workers that the firm offers the stability of a larger firm, further increasing the attraction and retention effect of the benefit compared to a larger firm. Thus, other things being equal, the introduction of a retirement plan will make a greater impact on the safe driving practices of employees in smaller firms than in larger ones. Formally:

HYPOTHESIS 2: Firm size will moderate the relationship between offering a supplemental retirement plan and safe driving practices such that the effect will be greater for smaller firms.

We have suggested that benefit offerings can have strategic implications beyond their cost effects. We illustrate this with the case of supplemental retirement benefits, and hypothesize that firms that offer supplemental retirement benefits will have employees who engage in safer driving practices. We propose a number of mechanisms through which benefits can affect

important organizational outcomes. We test this assertion at the firm level with data from the U.S. trucking industry, and look at the relationship between supplemental retirement benefits and safe driving practices, as measured by the proxy of insurance costs. We also hypothesize and test the notion that the effect of offering a supplemental retirement plan on safe driving practices will be stronger for smaller firms.

METHODS

The trucking industry has been used in a number of human resource management and compensation and benefits studies (e.g.; Shaw, Dineen, Fang, and Vellella, 2009; Logan and Ganster, 2005; Shaw, Gupta, and Delery, 2000; Hodgetts, Lawrence, and Schlesinger, 1985). The trucking industry is particularly suited for this research because truck drivers are key employees that comprise a large percentage of the total organization's staff, and thus their behaviors can have substantial strategic implications (Shaw, Gupta, and Delery, 2002). We use the U.S. trucking industry because of data availability and its variability in the offering of retirement plans.

Sample

We obtained our data from the U.S. Federal Motor Carrier Safety Administration (FMCSA) through its Motor Carrier Financial and Operating Statistics Program. Common carriers with gross annual revenues between \$3 and \$10 million (Class II carriers), and those with gross revenues of \$10 million or more (Class I carriers) are required to file their annual reports with the FMCSA using the FMCSA's Form M. The authority for this filing requirement was transferred to the Bureau of Transportation Statistics, the Surface Transportation Board of the Department of Transportation after the termination of the Interstate Commerce Commission in 1995. These filing requirements are found under Regulation 49 CFR part 1420. Retirement plan expense was separately reported on Form M through 1997. From 1998 to 2003, all fringe

benefit expenses were netted in a single line item. Data after 2003 have not yet been released. Our data consists of firm-year observations from 1989 (the earliest year available electronically) through 1997 (the last year in which retirement plan expense is available).

There are 21 revenue commodity groups that characterize trucking companies which report to the Department of Transportation using Form M. We limited our analysis to long haul/full truckload dry van trucking firms with complete data for any reporting year. This generates an initial sample of 1835 firm-year observations. We also impose constraints on average miles per driver and revenue per mile to assure that we are examining a homogeneous set of firms. Our results hold for the full sample of 1835 firms, although the model R-squares are lower. We constrain the sample to only those companies in which the drivers average between 50,000 to 150,000 miles per year. The relevant pay range to the driver and legal compliance in the full truckload segment of the trucking industry fall within those bounds. We have also constrained the sample to those firms that have loaded revenue per mile of \$0.75 to \$4.00. The lower limit represents a reasonable minimum (for the time period) for firms in the long haul full truckload segment of the industry. The upper limit excludes firms that may generate a material amount of revenue from other sources (e.g. installation of products hauled). The remaining sample consists of 1078 firm-year observations.

Measures

Our dependent construct, *Safe Driving Practices* is measured with the proxy variable “*Insurance costs*”. Insurance costs is defined as property and liability insurance per highway mile and is stated in cents per mile driven. Typically, liability insurance represents the majority of the expense. We believe that insurance costs is a reasonable, and in some ways ideal, proxy for the construct of firm level employee safe driving practices for several reasons. Insurance costs are largely based on underwriters’ holistic estimate of the risk claims that will be filed

against the policy. Because these claims are usually tied to accidents or crashes, which are almost entirely due to driver behaviors (Kilcarr, 2009), the safe driving practices of the firm's drivers are the dominant focus of these estimates. That is, employees' driving records, which include past accidents and driving violations, are the most important factor in the estimate of risk (Kilcarr, 2010; 2009; 2004; McClellan, 2009; Kahaner, 2007; Mitchell, 2001a; Forkenbrock, 1999). However, because driving records do not completely predict firm level safe driving practices (e.g., unsafe drivers do not always receive violations, safe drivers can have unavoidable accidents) underwriters also consider other predictors of firm level safe driving practices such as driver experience, drivers' personal driving records, driver training, and driver selection practices, in their risk assessment (Kilcarr, 2010; McClellan, 2009; Cullen, 2000).

Differential rates per mile across firms can result from the underwriter's assessment of the payout risk. This measure incorporates the number of accidents with several other factors, such as the severity of the accidents, fault, extenuating circumstances and several other actuarial and subjective factors. For example, insurance companies assess the severity distribution for a particular trucking firm by considering both the frequency distribution of accidents, and the severity of these accidents (Anderson and Brown, 2005). Many items the underwriter considers, as well as the actuarial model used to determine the individual insurance rate, are not observable outside the insurance industry. Thus, insurance costs are largely determined by the underwriter's best estimation of the safe driving practices of the firm's employees (specifically, expectations of safer driving practices are directly related to lower insurance costs), making it a reasonable proxy.

Another reason that insurance costs are a good proxy for safe driving practices is that most of the other factors that may have some influence on insurance costs can be controlled for. Other factors that can influence insurance costs over time include industry fundamentals such as number of competitors, demand and supply, (Kilcarr, 2009; Mitchell, 2001b; Cullen, 2000),

fluctuations in medical, legal, and repair costs (Kilcarr, 2009), fluctuations in damage awards, and performance of insurance company investments (FHWA, 2003). We control for these factors by controlling for year in all our models. Fleet maintenance may also have some effect on insurance costs (McClellan, 2009), thus, we control for this possible effect by including maintenance costs (per mile) in all our models. Insurance rates may also be affected by the states in which the firm operates, because of differences in liability laws (Kahaner, 2007), thus we also control for state in all our models. Detailed descriptions of these control variables are provided below.

Our independent variable of interest, Retirement Plan, is a (1,0) dummy variable to indicate whether the firm offered a supplemental retirement plan to its employees. A value of 1 indicates the presence of a retirement plan. The retirement plans offered in this segment of the trucking industry normally take the form of a 401(k) plan or a similar easy-to-understand plan that is not fully funded by the employer.

Firm Size is measured by the natural log of total highway miles driven at the firm level. Alternatively, we could have used revenues or the number of drivers as proxies for company size. However, since we focus on a very homogenous segment of the trucking industry (long-haul, dry van), there is a very strong positive correlation among these three variables (specifically, natural logarithm of total miles correlates with natural log of total revenue, $r=0.98$ and with natural log of number of drivers, $r=0.98$), indicating that any one of these three variables could be used as a proxy for company size. We verified this by repeating our analyses using the natural logarithm of revenues and number of drivers as a proxy for firm size and it did not materially affect our inferences in any way.

We test the moderating effects of firm size with an interaction term created by multiplying the mean-centered independent variables firm size and retirement plan. Finally, we also included *Retirement Plan Cost*, defined as cost per employee, as an independent variable.

Including retirement plan costs allows us to observe whether actual costs matter or whether just the offering of the retirement plan (regardless of cost) is enough to affect insurance costs.

We controlled for a number of factors in the model, including maintenance cost per mile, length of average haul, annual wage per mile, miles per driver, and whether or not the company was publicly traded. We control for the age and condition of the equipment by including *Maintenance Cost per Mile* in the regression. Maintenance cost is calculated as the sum of the costs incurred for parts, supplies, tires, and maintenance performed by outside facilities. Newer equipment requires less maintenance and is often covered by manufacturer's warranties. The age and condition of the equipment could be related to the cost of property and liability insurance in a number of ways. Newer equipment means that a greater dollar amount of property is at risk. On the other hand, older and less reliable equipment may contribute to the probability of accidents occurring, despite conformance to safety regulations. In addition, newer equipment may attract better drivers and act as an implicit benefit.

We use *Length of Average Haul* to differentiate firms based on the type of market they serve. Trucking firms that have short hauls on average typically would have more accidents, but of a less serious nature, because they are going through more constrained areas versus open highways. We include the average *Annual Wage Per Mile* paid to drivers and helpers to control for attempts to attract and retain quality drivers by offering higher wages. Annual wage per mile is computed as the total annual wages of drivers and helpers divided by the total number of highway miles. We also include the *Miles Per Driver* as a control variable. Property and liability insurance can be underwritten on a per unit basis or on a revenue basis. Miles driven will determine revenues because the hauling rates are based on geographical location and miles related to the specific load. Accident rates could be positively correlated to the average miles per driver if the drivers are near the federal limit, or accident rates could be negatively related to the average miles per driver if the firm can successfully retain high quality, highly productive drivers

over time. Because national firms will have longer average hauls than regional firms, we expect this control variable to be highly correlated with the average haul in miles. Finally, we include a (1,0) dummy variable to indicate whether a firm is *Publicly Traded*. Publicly-traded firms tend to be larger and are more likely to offer retirement plans.

Analysis

Because our sample consists of an unbalanced panel, we tested our hypotheses using panel data analysis. We estimate pooled cross-sectional models with time and state fixed effects. In addition, in order to mitigate concerns about potential cross-sectional and time-series dependence, we follow the approach of Petersen (2009). We cluster our standard errors by both firms and time. We report the results for a total of six models. For each analysis, controls were included for fiscal year and the state in which the firm is located. For brevity, statistics for year and location are not reported in the tables. The first model contains the control variables, only. The second model adds a dummy variable for the existence of a retirement plan. The third model adds the interaction component between the retirement plan dummy and firm size. Models 4 through 6 repeat the analysis for the subset of 619 firms that offered retirement plans, substituting retirement plan expense per driver (*Retirement plan cost*) for the retirement plan variable.

RESULTS

Table 1 reports descriptive statistics for our sample. The dependent variable, insurance cost per mile, is significantly correlated with all independent variables. The strongest correlations, in descending order, are with the natural log of total miles driven, the length of the average haul in miles, the dummy variable indicating the existence of a retirement plan, average miles driven per driver, the dummy variable for public firms, annual wage per mile, and maintenance cost per mile. All except maintenance cost per mile and annual wage per mile are negatively correlated with the insurance cost per mile. The retirement plan dummy variable was

significantly correlated with, in order of strength, the natural log of total miles (positive), the dummy variable for publicly-traded firms (positive), the annual wage per mile (positive), and the average length of the haul (positive). The correlation structure for the second variable of interest, retirement plan cost is similar to that of the retirement plan dummy.

Table 2 reports the regression results. In a regression of the control variables (model 1), firm size, length of average haul, and average miles per driver significantly reduce insurance cost per mile as they increase. When the retirement plan dummy variable is added to the regression (model 2), we see that offering a retirement plan significantly reduces insurance cost per mile. Model 3 includes the interaction term between firm size and offering a retirement plan. The significant positive coefficient indicates that, while retirement plans appear to reduce insurance costs, the association is greater for small firms than for large firms. Figure 1 shows the nature of the interaction by plotting the mean insurance costs by size (top third, middle third, and bottom third). As we hypothesized, the insurance cost reducing effect of offering a retirement plan is significantly stronger for smaller firms. Thus, small and medium sized firms can narrow the gap between themselves and large firms in insurance costs by offering a retirement plan.

Models 4 through 6 repeat the regressions for the 619 observations that had retirement plans. Retirement plan expense per driver is substituted for the retirement plan dummy. We find no evidence that the expense per driver is related to insurance costs. While our findings are consistent with the notion that offering a retirement plan appears to attract safer drivers or those with other demographic characteristics that relate to safe driving, our findings do not support the notion that drivers differentiate across plans.

DISCUSSION

Our results show that firms offering a retirement plan have significantly lower driver insurance costs, supporting hypothesis one. This finding definitively shows that benefits are

related to important organizational outcomes. This finding is consistent with a number of different mechanisms that we speculated will relate the offering of a supplemental retirement plan with safe driving including. These include that retirement plans attract safer drivers that result in lower insurance costs; that retirement plans may be related to the use of other HR practices that lead to safer driving, and that retirement plans foster greater retention of employees, which leads to safer driving. Further, we find that there is an interaction between firm size and offering a retirement plan on insurance costs and our figure shows that the effect of retirement plan on insurance costs is stronger for smaller firms, supporting hypothesis two. Finally, we find no significant effect of retirement plan cost or its interaction with firm size on insurance costs. This supports the notion that retirement plans attract and retain employees who are safer drivers, but that the actual cost and thus level of retirement plan coverage are not differentiated by employees.

We speculate that the actual cost may not matter for a number of reasons. First, job applicants may not have sufficient information about the specific benefits they will receive, thus whether or not they will receive supplemental retirement benefits (rather than the plan's dollar value) is the most salient aspect of this benefit in their employment decision. Second, because employees do not actually receive this benefit until they retire, the actual utility of the benefit is unknown until they are no longer employees. Finally, from an equity theory perspective, the value of the benefit would particularly matter when compared to the value of the benefit that comparison others received, and such comparison information is not likely to be readily available. In any of these cases, the availability of the benefit is much more salient than the actual cost, which would explain why availability rather than cost leads to the hypothesized outcome.

Limitations

As with all studies, this research has a number of limitations. First, we hypothesized that offering a retirement plan will lead to safer driving practices based on a number of different possible mechanisms. However, without data on driver risk aversion, employee demographic characteristics, other compensation and HR practices, and employee experience and turnover we cannot be certain which mechanism actually leads to safer driving practices as measured by lower insurance costs. Thus, future research is needed to help identify the actual mechanism that drives the relationship between retirement plans and safer driving. Second, although we have controlled for numerous more obvious factors, eliminating them as possible explanatory variables, other factors that we could not control for may be influencing our findings. For example, we could not control for the level of coverage or deductible, a factor that can influence insurance rates (Cullen, 2000). However we do not see this as a serious limitation because federal laws set substantial minimum coverage levels, and variances in coverage and deductibles have only a minor influence on the overall insurance cost (Duncan, 2005) and the majority of companies with low deductibles are publicly traded (Hays, 1999), which we do control for.

Another limitation is the age of the data. However, we do not see this as a serious limitation because the underlying logic of our hypotheses is not likely to be affected by any environmental factors that have changed over time. Still, future research looking at recent data would provide more definitive results regarding the generalizability of our findings over time. Finally, as with most field studies, our results indicate relations among variables and do not indicate causality. For example, safer driving could somehow lead to firms being more likely to offer supplemental retirement plans. However, as mentioned above, we believe the most likely mechanism is through attraction and retention as suggested by well-supported theories. Thus, the effects of other variables (as specified above) or reverse causality remains possible, although in our opinion unlikely.

Implications for Theory and Practice

Our findings have a number of implications for theory and practice and raise a number of additional questions that would be viable for future research to consider. Relevant to theory, our findings are consistent with the notion that supplemental retirement benefits should be considered within the organizational domain of person-organization fit. This raises a number of questions related to person-organization fit. First, what other benefits have implications for person-organization fit. Second, are some benefits more important than others in achieving fit? Third, what other aspects of compensation or other human resource practices should be considered as part of the person-organization fit framework? Are there bundles of HR practices that attract and retain particular employees? We have provided evidence that firm size affects the relationship between offering a benefit and resulting behaviors. Does size affect other factors (e.g., culture) of the person-organization fit relationship? Which other firm characteristics moderate this relationship? Does industry matter? Identifying boundary conditions of the person-organization fit perspective will help further refine the theory and improve its predictive capacity. Finally, our meso-theorizing and our results are consistent with the perspective that person-organization fit has implications for firm level outcomes (in our case, insurance costs). What other organization level outcomes, (including aspects of firm performance) can person-organization fit relate to?

Relevant to practice, our findings show that offering benefits can be associated with valued organizational level outcomes. Considering that in our sample the average annual cost of a pension plan is \$145,000 we compare this cost to the average savings in insurance premium. The average firm in our sample records 10,000,000 miles per year. From Model 3 in Table 2, such a firm will be saving $-10,000,000 \text{ miles} * (-3.77 + (0.33 * \ln(10,000,000 \text{ miles}))) / 100 = \$159,892.82$ in insurance cost per year. These savings outweigh the average annual cost of maintaining the pension plan, thus providing an economic justification for their usage.

Our findings are consistent with the notion that the introduction of certain benefits relate to employee behaviors that can have strategic and performance implications for the firm. This may be through the mechanism of attracting and retaining employees with certain characteristics, as proposed by person-organization fit theory. Identifying which benefits correspond to the attraction of specific employee characteristics and resulting behaviors would help organizations tailor their benefit offerings to target those employees that would be most supportive of the organization's strategy. That is, which benefits have the strongest effect in attracting and retaining employees with certain characteristics? Are there bundles of benefits which are particularly effective at attracting and retaining employees with certain characteristics? Which characteristics lead to specific behaviors that help support certain strategies? Identifying which characteristics and resulting behaviors align best with various strategies would help organizations better tailor their benefit offerings to their specific strategic goals.

Another implication of our study relevant to practice is that the cost of the benefit does not appear to be as important as just having it available. This implies that firms may get more value from offering lower levels of more benefits than higher levels of fewer benefits. Whether this is true from all types of benefits is an interesting question that would be a viable area for future research.

Our findings regarding the effect of firm size on the strength of the relationship suggest that using benefits for strategic purposes may be particularly important for smaller and medium sized firms. Consistent with our results, smaller and medium sized firms may be able to benefit from person-organization fit far more than larger firms, and could use this to help overcome any attraction and retention advantages held by larger firms. Finally, we suggest that offering supplemental retirement benefits help attract and retain different types of employees. It would be useful for theory and practice to know how providing supplemental retirement benefits (and other benefits) relates to attraction relative to retention. If attraction is the primary mechanism,

other issues arise which would benefit from additional research. For example, would certain benefits deter some employees, while attracting others? That is, does offering a supplemental retirement plan have a negative effect on the recruitment of risk-seeking individuals? This could have important implications for firms that are trying to attract employees for jobs where risk propensity is a positive. Practically, if these effects are largely through attraction rather than retention, then organizations would benefit greatly from heavily communicating these benefits to prospective employees in the recruitment process. If the effects are largely through retention, then organizations would benefit more from heavily communicating these benefits to current employees.

Conclusion

We hypothesized that trucking firms that offer supplemental retirement plans would, through a number of different possible mechanisms, attract and retain drivers who engage in safer driving practices. We also hypothesized that this effect would be stronger for smaller companies and found support for both hypotheses. We believe that finding a relationship between retirement plan offerings and insurance costs at the firm level has important implications for how firms can use benefits to help achieve strategic goals. These findings provide empirical evidence that benefits can relate to important firm level outcomes. Further, the findings are consistent with the notion that firms can determine the type of employees that are attracted to various different benefits and provide benefits that attract and retain employees most likely to behave in a manner consistent with the firms' goals and strategies.

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Table 1. Correlation Matrix

	Mean	Std. Dev.	1	2	3	4	5	6	7	8
<i>Control Variables</i>										
1 Natural log of total miles	9.20	1.44								
2 Maintenance cost per mile	0.11	0.10	-0.12 **							
3 Length of average haul	558.12	462.68	0.40 **	-0.09 **						
4 Annual wage per mile	0.28	0.12	-0.11 **	0.17 **	-0.25 **					
5 Miles per driver (000)	97.97	24.20	0.28 **	-0.11 **	0.32 **	-0.58 **				
6 Publicly-traded firm	0.05	0.22	0.41 **	-0.04	0.13 **	0.03	0.04			
<i>Variables of interest</i>										
7 Retirement plan dummy variable	0.57	0.49	0.35 **	0.06	0.13 **	0.18 **	0.00	0.18 **		
8 Retirement plan costs (000)	144.51	947.46	0.25 **	-0.01	0.06 *	0.07 **	-0.01	0.14 **		
<i>Dependent variables</i>										
9 Insurance cost per mile	4.78	2.69	-0.40 **	0.09 **	-0.27 **	0.12 **	-0.22 **	-0.12 **	-0.23 **	-0.07 *

NOTE: ** p<.01, * p<.05, †p<.1;

N=1078 for all r that do not include plan cost;

N=619 for all r that include plan cost.

Table 2. Regression Results of Insurance Cost

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
<i>Control Variables</i>												
Firm Size	-0.70	***	-0.61	***	-0.83	***	-0.50	***	-0.50	***	-0.51	***
Maintenance cost per mile	0.97		1.26		1.30		0.35		0.34		0.33	
Length of average haul	0.00	*	0.00	*	0.00	*	0.00	**	0.00	**	0.00	*
Annual wage per mile	-0.53		0.07		0.23		0.43		0.37		0.65	
Miles per driver (000)	-0.01	**	-0.01	***	-0.01	**	-0.01	*	-0.01	*	-0.01	*
Publicly-traded firm	0.28		0.29		0.10							
<i>Variables of Interest</i>												
Pension plan			-0.81	***	-3.77	***						
Pension plan * Firm Size					0.33	**						
Pension cost per driver									0.02		0.26	
Pension cost * Firm Size											-0.03	
R ²	0.28	***	0.30	***	0.31	***	0.32	***	0.32	***	0.32	***
Adj. R ²	0.26		0.28		0.28		0.28		0.27		0.27	
ΔR ² _{variable}			0.02	***	0.01	**			0.00		0.00	

***p<.01; **p<.05; *p<.1; all p-values for two-tailed test.

N=1078 for models 1-3; N=619 for models 4-6.

Note: All models include control variables for fiscal year and state.

Standard errors are clustered at the firm and year levels

Figure 1
The Interaction of Firm Size and Providing a Retirement Plan on Insurance Costs

