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Md Ruhul Amin
The University of Texas Rio Grande Valley

Incheol Kim
The University of Texas Rio Grande Valley

Suin Lee
The University of Texas Rio Grande Valley

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Local Religiosity, Workplace Safety, and Firm Value

Md Ruhul Amin*, Incheol Kim**, and Suin Lee***†

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Abstract

This paper examines the effect of local religiosity on employee treatment, proxied by workplace safety incidents. Using the establishment-level data compiling on the incidents of work-related injuries, we find that employees of the establishments in more religious counties get less injured than those in less religious counties. We further find that a reduction in occupational accidents is more evident for establishments in counties dominated by one religious denomination, strengthening our argument on community solidarity and homophily stemming from religious networks. Firms whose establishments are located in high religiosity counties are less likely to violate workplace conduct and more likely to take workplace safety measures. Moreover, firms with more work-related injuries exhibit poorer firm performance. Overall, our findings suggest that local religiosity has a value implication through human capital protection.

JEL Classification: J28; N03; Z12

Keywords: Workplace safety, religiosity, injury and illness, community solidarity, homophily, investment, violation, firm performance, human capital

†Corresponding author

* Department of Economics, Finance, and Healthcare Administration, Langdale College of Business Administration, Valdosta State University, Valdosta, GA 31698, Tel: 1-229-245-3820, E-mail: mdamin@valdosta.edu

**Department of Economics and Finance, The University of Texas Rio Grande Valley, Edinburg, TX 78539, Tel: 956-665-3354, E-mail: incheol.kim@utrgv.edu

***Department of Economics and Finance, The University of Texas Rio Grande Valley, Edinburg, TX 78539, Tel: 956-882-5802, E-mail: suin.lee@utrgv.edu

1. Introduction

Given the importance of human capital, employee treatment encompasses employees' knowledge, skills, and other features that can be converted into productivity. Especially, Zingales (2000) highlights the greater importance of human capital in "new" firms[1] which are distinct from capital-centered "traditional" firms. Although numerous papers have documented the effects of employee treatment (e.g., Edmans (2011), Chen et al. (2011), and Au et al. (2019)), the determinant of employee treatment has not been clearly uncovered yet. Hence, the purpose of this study is to address this knowledge breach. Notably, by focusing on the cultural trait of an establishment's local area, we empirically explore if local religiosity is associated with employee treatment as measured by cross-regional variations in degrees of workplace safety in the U.S.

Departing from prior research on employee treatment using intangible measures such as employee satisfaction (e.g., Edmans (2011)), we choose to exploit more tangible events, occupational accidents, which present an advantage over other measures such as employee satisfaction because easily traceable records allow us to gauge employee treatment more objectively and unambiguously. According to the U.S. Bureau of Labor Statistics, 5,250 American workers died from work-related injuries in 2018[2]. The National Safety Council also estimates that income loss due to preventable work-related injuries is close to $161.5 billion in 2017[3]. Moreover, in addition to substantial economic and societal loss, workplace safety issues have a nontrivial negative impact on firm value (see Cohn and Wardlaw (2016)) through a reduction in productivity, an increase in compensation claims (e.g., medical expenses), and workplace morale. Therefore,

[1] He further argues that employee skills become less specialized fitting to specific firms, and employees have better outside opportunities than before as the global market becomes integrated.

[2] See at https://www.bls.gov/news.release/pdf/cfoi.pdf

[3] See at https://injuryfacts.nsc.org/work/costs/work-injury-costs/

understanding key factors in occupational safety is one of the uppermost issues for typical business owners.

We posit that religiosity could influence workplace safety, either positively or negatively. On the one hand, several papers have shown that religiosity is positively associated with individual and corporate risk-taking behavior and thus has substantial economic implications. For example, Kumar (2009) and Kumar et al. (2011) find that religions, especially Catholics, have implications regarding peoples' gambling tolerance and their propensity to choose lottery-type investments. Additionally, Adhikari and Agrawal (2016) show that local culture as shown by religion is related to firms' innovative endeavors, which tend to have risky and positively-skewed payoff distributions. If this risk-based aspect of religiosity affects workplace safety, we would expect more workplace accidents in areas with high religiosity, especially where Catholics are dominant.

On the other hand, numerous studies present the basis for the impact of social interaction and trust on diverse aspects of a firm, such as product innovation and workplace performance (e.g., Guiso et al. (2015); Lins et al. (2017)). Concurrently, several studies have also documented that religiosity significantly affects how people behave and interact in society. In particular, studies (e.g., McPherson et al. (2001)) have shown religion as one of the most outstanding personal traits to form homophily, the tendency for similar people to be connected at a higher rate than dissimilar ones, with robust implications for how people form their societal attitudes and experience interactions. Also, religious people are more trusting of other people and more authentic (e.g., Guiso et al. (2003)). Focusing on these aspects of religiosity, we use local religiosity to identify community members' propensity for social networking, interaction, trust, and solidarity. If this aspect of religiosity in terms of homophily, social network, and trust is an influential factor in the workplace, we anticipate that higher religiosity will be associated with better workplace safety,

attributable to social network solidarity and stronger trust among community members in more religious areas. To carry out our empirical tests, we obtain work-related injury and illness data from the Occupational Safety and Health Administration (OSHA) and construct (unbalanced) panel data of occupational injuries and illnesses at the establishment level. More specifically, throughout the paper, our primary measure of workplace safety is the sum of deaths and all injuries and illnesses that result in days away from work or with job restrictions or transfers, and other recordable cases at the establishment in a given year. In this study, we find strong evidence that employees of the establishments in more religious counties get less injured than those in less religious counties. Moreover, the size of the relation between religiosity and workplace safety is economically substantial as well. In our regression analysis, one standard deviation increase in the level of local religiosity corresponds to a 1.5% drop in the number of work-related injury cases, even after controlling for corporate and demographic characteristics.

The common weakness of studies examining the effect of local religiosity on economic outcomes is the confounding effect, which refers to local religiosity being highly correlated with observable (e.g., age, gender, and education) and/or unobservable characteristics (e.g., personal mentality and family tradition) of local communities. To address this endogeneity issue, we present that our evidence is robust to a battery of sensitivity tests, including the alternative definition of religiosity, a two-stage model with an instrumental variable, a difference-in-differences approach exploiting migration shock, and other various approaches to deal with endogeneity.

We further demonstrate that the positive effect of religiosity on workplace safety[4] is little explained by the risk-based aspect of religion for three reasons: 1) we find similar evidence with the baseline result after controlling for known proxy variables related to risk-taking such as the

[4] The negative relation between religiosity and work-related injuries and illnesses symbolizes the positive relation between local religiosity and workplace safety.

state-level lottery consumption, 2) our baseline result holds when we employ a residual religion variable orthogonal to several relevant characteristics including local risk attitudes, and 3) the effect of religiosity on workplace safety is indifferent between high and low Catholic areas. We rather find that workplace safety is better in areas dominated by one religious denomination, regardless of whether it is Protestant or Catholic[5]. Therefore, the correlation between workplace safety and local religiosity is less likely driven by the manner of risk-taking behavior documented in prior studies (e.g., Chen et al. (2014)), but rather, it is more likely determined by the degree of unity among community members sharing the same religious identity. The effect of this unity among community members sharing the same religious identity survives even after controlling for other social networks, such as social capital (network through non-religious social institutions), risk-related traits, local ethnicity, and other minority groups within the local religiosity. This finding is consistent with the empirical evidence that employee behaviors and performance in the workplace are positively affected by cooperative relationships and mutual trust within organizations (e.g., Kim et al. (2018)). Mencl and May (2009) also show that employees refrain from workplace misbehavior when they are socially and psychologically close to colleagues at work. Such tendencies could be more evident when community solidarity is built-in secure social networks and trust formed through sharing the same religious beliefs.

We provide two additional tests within the context of the mechanisms through which local religiosity affects workplace safety. We find that establishments in more religious counties are remarkably linked with better workplace safety when the parent firm has lower discretionary

[5] In the U.S., Protestants and Catholics are two major religions: about 43% and 20% of Americans identify themselves as Protestants and Catholics in 2019, respectively. About 26% of Americans are not affiliated with any religion. Other religions, such as Mormons, account for no more than 2% of the total population independently (https://www.pewforum.org/2019/10/17/in-u-s-decline-of-christianity-continues-at-rapid-pace/). Therefore, a high local religiosity is likely driven by either Protestants or Catholics.

expenses and higher work pressure. This suggests that local religiosity affects managers' attitudes toward workplace safety, especially when they have lower discretionary resources for safety and higher performance pressure to increase firms' productivity. We claim that such managers' positive attitudes toward workplace safety could result from religiosity-induced informal interpersonal interactions within the community and workplace. In other words, a more robust regional community and workplace solidarity aroused by local religiosity may secure efficient allocation of limited resources (such as proper rewards, training, management commitment, effective communication, and employee participation) for safety and align the work assignments with the employees' abilities and skills in a better way, which eventually drives the positive relationship between local religiosity and workplace safety.

Furthermore, we provide several tests to unveil cross-sectional differences in the relation between religiosity and workplace safety issues. We find that the positive linkage between local religiosity and workplace safety is more pronounced in establishments of industries with lower union membership, establishments of firms with higher analyst coverage, and establishments located in counties with higher social capital. Based on these findings, we argue that religiosity has a substitutionary effect concerning industry union membership and a complementary effect concerning analyst coverage of a firm and regional social capital on advancing workplace safety.

Our firm-level analysis finds that firms with higher establishment-level employee weighted religiosity are less likely to violate workplace conduct (work-related labor laws) and pay workplace violation penalties to different federal regulatory agencies. These firms are also more likely to undertake workplace safety measures and reduce employment uncertainty.

Lastly, we examine the influence of workplace safety on firm performance measured by firm-level market-to-book ratio and Tobin's Q. We find that workplace accidents are negatively

associated with firm performance, suggesting a value implication of local religiosity through human capital protection. This finding corresponds with human relations theories arguing that employee satisfaction and responsible employee treatment may ultimately benefit shareholders (see Akerlof (1982) and Lee and Mas (2012), among many others).

Our study contributes to the growing literature on employee relations and finance by presenting compelling evidence that there is a substantial improvement in employee treatment and workplace safety in areas with high religiosity, which affects employee welfare to a great extent and potentially firm value as well. Extant finance literature shows that better employee treatment or satisfaction increases employee morale at the workplace, resulting in higher productivity and lower turnover (Harter et al. (2002)), better innovation productivity (Chen et al. (2016a); Chen et al. (2016b)), and higher stock returns (Edmans (2011); Edmans et al. (2014)), which all could eventually lead to stockholder wealth maximization. Building on this line of literature, our study proposes a value implication of local religiosity through human capital protection, demonstrating that corporate culture highlighted as managerial integrity could increase firm value through better employee relations.

Our study also sheds light on how local religiosity is an influential factor shaping a relation between corporate culture and employee welfare. Since Hilary and Hui's seminal work (2009), a voluminous amount of research has focused on the linkage between religiosity and risk-taking behavior and shown that local religiosity is associated with the level of corporate risk-taking behavior: cost of debt, earnings management, voluntary disclosure, corporate misbehavior, corporate financial reporting, innovation, venture capital investment decision, debt financing, and so on (e.g., Kanagaretnam et al. (2015); Dyreng et al. (2012); El Ghoul et al. (2012); Cai and Shi (2017); Chircop et al. (2020a); among many others). Instead, we turn our attention to another

critical aspect of religiosity as a gauge for the community members' propensity for social networking, homophilous interactions, and trust, and then we demonstrate its positive association with workplace safety. Hence, our findings add to a growing body of literature about the impact of social interaction and employee trust on different aspects of firms (e.g., Shi and Tang (2015); Lins et al. (2017)).

Our findings have practical implications specifically for business owners, as running a business in a more religious area could play a role in enhancing firm value, if all other things are equal. They invest in their employees upon contract signing and bear a significant amount of risk since those investments often take a long time to see what comes up as a return. If workers get injured on the job before the talent of the workforce creates value, the business owners will assume the entire cost arising from the human capital loss. While governments may share the costs by implementing relevant regulations or offering a government subsidy if workplace accidents and injuries happen, our findings suggest a significant role of religiosity in workplace safety. That is, business owners in highly religious areas can internalize the costs related to workplace safety and would likely make additional investments in employee welfare. Rendering safe working practices to employees is initially costly, but could ultimately enhance shareholder wealth.

This paper is organized as follows. Section 2 discusses the related literature and prior findings. Section 3 describes the data and sample selection procedure. Section 4 describes the empirical results. Finally, the last section presents our conclusion.

2. Literature Review

2.1. The importance of employee treatment

The World Bank Council for Sustainable Development (1999) asserts that making good business includes both behaving ethically and contributing to "economic development and improving the quality of life of the workforce and their families as well as of the local community and society at large." As this definition implies, the workforce represents one of the critical stakeholders of a firm. At the same time, the importance of human capital has been increasingly emphasized in the literature. Pfeffer (1996) mentioned human capital as one of the main driving forces for a firm's competitive success. Furthermore, human capital, as a crucial asset and the source of value creation, can be lost easily when employees leave a firm (Hall and Lerner (2010)). Thus, the importance of employee treatment has received burgeoning attention.

Markedly, a large body of literature has demonstrated that a firm's treatment of its employees can yield a significant impact on the firm in numerous ways. For instance, Bae et al. (2011) find that firms treating their employees fairly maintain low debt ratios, implying that such firms have strong incentives to reduce the probability of financial distress. In addition, employee conditions are important determinants of firms' cost of debt (Chen et al. (2012)) and the cost of equity (Chen et al. (2011)). Numerous papers also find that a firm's investment in employee welfare can yield a favorable impact, such as more innovation success (e.g., Liu et al. (2020); Mao and Weathers (2019)). Moreover, Edmans et al. (2014) and Lee and Mas (2012) find that good employee treatment is positively associated with stock returns and market value, increasing shareholders' wealth. Then, while the consequences of corporate irresponsibility toward employees are well understood, studies on the underlying internal or external mechanisms improving employee treatment are relatively scant. Hence, our focus is to extend this area of study by examining a relatively underexplored part, the determinant of employee treatment, measured as workplace safety events.

2.2. Determinants of workplace safety

Prior literature has discussed numerous elements affecting workplace safety. For example, Gillen et al. (2002) find that union workers are less likely to perceive risk-taking as a part of their job, and Morantz (2013) claims that unionization leads to fewer workplace injuries. Using a unique dataset based on factory audits of working conditions in Nike's suppliers, Locke et al. (2007) find that monitoring efforts combined with interventions focused on halting the root causes of poor working conditions enhance working environments effectively, although monitoring alone does not produce substantial improvement in the suppliers' working conditions. Additionally, Caskey and Ozel (2017) argue that firms that meet or just beat analyst forecasts are associated with decreases in discretionary expenses related to worker welfare, which is also related to an increase in workplace injuries or illnesses.

At the same time, extant literature finds that workplace injuries occur when a workplace lacks proper rewards, training, management commitment, effective communication, and employee participation (e.g., Ali et al. (2009)). The relational coordination theory, developed in operational management literature, states that workplace coordination can increase through a shared goal, shared knowledge, mutual respect, and enhanced relationships among colleagues that facilitate effective communication, resulting in a safe working environment (Gittell (2002) and Pagell et al. (2015)). In this context, to what extent workplace culture plays a role in mitigating occupational injuries and illnesses would be a well-grounded topic to discuss.

2.3. Religiosity and economic behavior

In this study, our focus is on the relationship between workplace safety and religiosity, which is a type of cultural factor that has been documented from different dimensions. For instance, Rupasingha (2009) shows that more religious U.S. counties exhibit better economic growth. Notably, several papers have shown that religiosity, as a part of corporate culture, affects different aspects of corporate behavior and has economic implications. Examining how religiosity affects corporate decision-making, Hilary and Hui (2009) document that firms in regions with higher levels of religiosity exhibit lower degrees of risk exposure, lower investment rate, and less growth. Besides, numerous studies explore how religiosity affects different aspects of corporate behavior, including accounting conservatism, corporate social responsibility, cost of debt, tax avoidance, earnings management, voluntary disclosure, corporate misbehavior, corporate financial reporting, innovation, venture capital investment decision, and debt financing (e.g., Bjornsen et al. (2018); McGuire et al. (2012); Boone et al. (2012); Kanagaretnam et al. (2015); Grullon et al. (2009); Dyreng et al. (2012); El Ghoul et al. (2012); Boahen and Mamatzakis (2015); Adhikari and Agrawal (2016); Cai and Shi (2017); Chircop et al. (2020a)). Primarily, much of finance papers have focused on one particular aspect of religiosity and coupled it with corporate risk-taking behaviors.

Alternatively, there is another side of religiosity, concerning societal attitude, homophily, and social connection. There are specific attributes, especially regarding social attitude and network, found to be associated with more religious people. For instance, Guiso et al. (2003) claim that religious people are more trusting of other people, public institutions, and market outcomes. At the same time, such people are also more trustworthy as they are less willing to break the law or cheat. Hence, there could be an enhanced level of mutual trust and stronger bonding among religious people.

Moreover, another critical feature linked with religiosity is homophily, which refers to people's well-known tendency to connect more with others sharing similar traits such as race, ethnicity, and education. Homophily has been shown to affect many different areas to a substantial degree. As an instance, Kleinbaum et al. (2013) show that there is a higher proportion of homophilous interactions among members within business units, job functions, offices, and quasi-formal structures than across their boundaries. Furthermore, among numerous social distinctions that can divide people's social worlds, McPherson et al. (2001) find religion as one of the solid traits for inbreeding homophily. Therefore, considering these different aspects of religiosity, primarily the risk-related feature and the one associated with social networks, we investigate which side of religiosity predominates to identify its relationship with workplace safety.

Meanwhile, one may argue that the exclusiveness of religion could cause disputes among people with dissimilar religions and thereby deteriorate workplace interactions and safety. When an area, for instance, is highly religious but comprised of diverse religious denominations, establishments located in that area may not necessarily exhibit better workplace safety due to conflicts and unfavorable interactions among different religious adherents within the workplace. Thus, we later examine not only how local religiosity is related to workplace safety, but also whether the dominance of one religion in an area matters for workplace safety.

3. Data and Sampling

In this section, we describe the sample selection process, variables construction, and summary statistics. Our data mainly come from three different sources: the Occupational Safety and Health Administration (OSHA), the Association of Religion Data Archive (ARDA), and the Compustat database.

Our data on workplace injuries are collected from the OSHA. The Bureau of Labor Statistics (BLS) compiles the OSHA data initiative (ODI) that shows work-related injuries and illnesses from 2002 to 2011[6] through surveys with employers in manufacturing industries selected by a stratified sampling method under the Occupational Safety and Health Act, which involves approximately 80,000 establishments each year.[7] For each establishment, the OSHA records injuries and illnesses data, along with searchable establishment name, address, industry identification, the average number of employees, mean number of working hours, and indicator variables that specify whether an establishment experiences unusual events such as strikes or lockouts, facility shutdowns or layoffs, seasonal work, or natural disasters or adverse weather conditions. Several studies (e.g., Cohn and Wardlaw (2016), McManus and Schaur (2016), Caskey and Ozel (2017), Bradley et al. (2019), Cohn et al. (2020)) have used the OSHA data as a primary source of workplace safety research.

We use this data to construct annual measures of injuries and illnesses at the establishment level. Our primary measure of injury is the natural logarithm of the sum of deaths and all injuries and illnesses that result in days away from work or with job restrictions or transfers, and other recordable cases at the establishment in a given year (Column G + Column H + Column I + Column J of OSHA Form 300). In our robustness tests, we use an alternative measure of establishment-level injury: Total Case Rate (TCR) and Injury Rates with Days Away, Restricted,

[6] While the OSHA compiled data since 1996, our sample period begins in 2002 because the OSHA changed its recording criteria for injuries and illnesses and the coverage of industries in 2002. The pre-2002 years' injuries and illnesses data are not comparable to those after the change made in 2002. Although the OSHA discontinued the ODI collection initiative in 2011 due to funding cuts, we end up our sample year in 2010 because our religion data from ARDA decennial survey data are available up to 2010.

[7] With a broad mandate to reduce injuries and illnesses in America's workplaces, the OSHA requires all establishments with 11 or more employees to maintain log recording injuries and illnesses. Using this log record, the OSHA can spot establishments with serious workplace safety issues and take initiatives to ensure that "an America whose workplaces, as far as possible, are free from hazards that are causing or likely to cause death or physical harm." See the OSHA's justification at https://www.osha.gov/Reduction_Act/SS2091999.html

or Transferred (DART)[8]. TCR and DART represent the establishment-level incident rate per 100 full-time employees in a given year. We also use a different measure of establishment-level injury, which is the natural logarithm of the number of days away from work (Column K) due to work-related injuries and illnesses[9].

Our data on county-level religiosity come from the Churches and Church Membership files of the Association of Religion Data Archive (ARDA). The Glenmary Research Center collects data from decennial surveys on religious affiliation in the U.S. (1971, 1980, 1990, 2000, and 2010). In the 2010 decennial survey year, it compiles data on the number of congregations and adherents for 236 religious groups. As per the ARDA[10] definition, total adherents include "all members, including full members, their children, and the estimated number of other participants who are not considered members; for example, the "baptized," "those not confirmed," "those not eligible for Communion," "those regularly attending services," and the like." The decennial survey data on religious adherents are available on the ARDA website[11] under the title "Religious Congregations and Membership File."

For our analyses, we use the datasets for 1990, 2000, and 2010 to construct our measure of county-level religiosity. The main variable of interest is the degree of religiosity in the counties in which a firm's establishments are located. We compute county-level religiosity as the number of religious adherents in the establishment county divided by the total population in the county as

[8] Following the OSHA's definition, Total Case Rate (TCR) is the number of cases in a given establishment-year divided by the number of hours worked by all employees at the establishment in a given year and then multiplied by 200,000. The resulting value of TCR indicates the incident rate of injuries and illnesses per 100 full-time establishment-level employees in a given year. Injury Rates with Days Away, Restricted, or Transferred (DART) is measured as the sum of the number of injuries and illnesses that result in days away from work or with job restrictions or transfer, divided by the number of hours worked by all employees in a given establishment-year, and then multiplied by 200,000.

[9] While the other measures are about the number of injuries and illnesses, this measure captures the number of days in total that are unproductive due to injury incidence.

[10] See the ARDA website at http://www.thearda.com/Archive/Files/Descriptions/RCMSCY10.asp

[11] Religious data available at http://www.thearda.com/Archive/ChCounty.asp

reported by ARDA. Thus, the higher value of religiosity represents more religious adherents in the county. Following previous literature (Alesina and La Ferrara (2000); Hillary and Hui (2009); and Adhikari and Agrawal (2016)) on religiosity, we linearly interpolate the data to estimate the values for missing years (e.g., 1991-1999 and 2001-2009).

In addition, we collect establishment-county level demographic variables from the U.S. Census Bureau. We use the establishment county population's median age, level of education, population, percentage of married people, and social capital[12] as county-level control variables that might affect workplace safety issues. As in the estimation of missing years' county-level religiosity, we linearly interpolate missing years' county-level demographic variables.

Our accounting data come from Compustat annual files. We calculate several firm-level control variables following the work of Cohn and Wardlaw (2016). Firm-specific control variables include leverage, cash flow, dividends, firm size (*Ln(Assets)*), asset turnover (*Turnover*), tangibility, capital expenditure (*Capex*), and market to book ratio (*MB*). The detailed variable constructions are available in Appendix A. We also control for establishment-level variables such as establishment size (*Ln(EstbEmp)*) measured as the natural logarithm of the number of employees and working hours per employee (*Ln(WorkHour)*). To address the effect of the possible influence of outliers, we winsorize all of these variables at the top and bottom 1% level. Following Cohn and Wardlaw (2016) and Caskey and Ozel (2017), we delete financial institutions [Standard Industrial Classification (SIC) Codes 6000-6999] and utility suppliers [Standard Industrial Classification (SIC) Codes 4900-4999]. We also exclude the observations with missing values.

[12] We collect social capital data from https://aese.psu.edu/nercrd/community/social-capital-resources

We use the Compustat-OSHA injury and illness link table[13] of Caskey and Ozel (2017)[14] to match each establishment with its Compustat firm. To merge OSHA data with ARDA data, we match them by Federal Information Processing Standards (FIPS) code and calendar year. After merging OSHA establishment-level injuries and illnesses and ARDA county-level religion data with Compustat data, our final sample consists of 72,287 establishment-year observations with 5,268 unique establishments and 1,615 unique firms.

Table 1 provides summary statistics for establishment-level, county-level, and firm-level variables. The average establishment in our sample has 250 employees, and employees work for an average of 1,941 hours per year. In terms of our measure of workplace safety, the mean and median values of the number of cases that result in days away from work or in transfers and other recordable cases are 16.30 and 7 per establishment, respectively, in a given year. Our alternative measures of workplace safety issues are TCR and DART, the establishment-level incident rate per 100 full-time employees in a given year. The mean and median values of TCR are 7.76 and 6.14, while the mean and median values of DART are 5.09 and 3.63, respectively. The mean DART implies that, in an average establishment year, an employee has a 5.1% probability of sustaining a work-related injury and illness that result in days away from work or with job restriction or transfer, in an average establishment year.

The county-level religiosity, measured as the percentage of people who belong to a church in each county, exhibits the mean and median values of 50.70% and 50.50%, respectively. The standard deviation of religiosity is 11.20%, indicating a fair amount of variation in our religiosity

[13] See the Compustat-OSHA injury and illness link table at https://sites.google.com/view/bugraozel/data

[14] Caskey and Ozel (2017) manually match establishments from the ODI to firms in Compustat based on names. If any search does not produce any matches, they conduct additional searches through Hoovers, company/establishment websites, and other online resources to identify whether the establishment matches with a subsidiary of a Compustat firm.

variable[15]. The establishment-county population age has a mean and median of 36.69 and 36.60 years, respectively. The mean and median percentages of the establishment county age 25+ population with at least one year of high education are 83.01% and 84.16%, respectively. On average, 19.20% of establishment-county people are married. Each establishment county has a population of 890,552 (308,760) in terms of its mean (median) value.

The mean and median values of the total assets are $31.58 billion and $10.50 billion, respectively, which indicates that the firms used in our sample are relatively large. On average, a firm has 27.30% total debt in its capital structure. The average cash flow is about 9.80% of total assets. The average dividend paid to common stock is 1.80% of total assets. Asset turnover averages $1.45 of sales per dollar of beginning assets, and capital expenditure averages 5.60% of beginning assets. On average, property, plant, and equipment (PP&E) or tangible assets are about 38.00% of our sample firm's total assets. The mean firm in our sample has an asset market-to-book ratio of 1.35.

[Table 1, about here]

Sampling distribution and cross-tabulation of injuries and illnesses analysis over the years are depicted in Figures 1 and 2. Figure 1 shows the distribution of the sample over the years. Observations in our sample are almost evenly distributed over the sample period, with few exceptions. In the years 2009 and 2010, the number of observations is relatively lower than in previous years. Figure 2 shows the distribution of the average number of cases, Total Case Rate (TCR), and Injury Rates with Days Away, Restricted, or Transferred (DART) over the sample years. Both the number and rate of cases have decreased over the years.

[Figures 1&2, about here]

[15] The statistics of county-level religiosity are comparable to those in Hilary and Hui (2009).

4. Empirical Results

4.1 The effect of religiosity on establishment-level work-related injury and illness

We examine the relation between local religiosity and establishment-level workplace injuries in an Ordinary Least Square (OLS) regression framework. We employ the following baseline empirical model that links the measures of establishment-level workplace injuries of firm *j* in year *t* to the county-level religiosity and a vector of the firm and establishment-specific control variables in year t.

$$Ln(Num\_Cases)_{i,j,t} = a_0 + \beta_1 * Religisotiy_{i,j,t} + \sum_2^p \beta_{2\ to\ p} * E_{i,j,t} + \sum_{p+1}^q \beta_{p+1\ to\ q} * X_{j,t} + FEs + \varepsilon_{i,j,t} \quad (1),$$

where *p* and *q* are numbers, and *i*, *j*, and *t* index establishments, firms, and years respectively. $Ln(Num\_Cases)_{i,j,t}$ is the key dependent variable, computed as the natural logarithm of the sum of deaths and all injuries and illnesses that result in days away from work or with job restriction or transfers, and other recordable cases at the establishment in a given year. The main variable of interest is *Religiosity*, computed as the percentage of religious adherents of the total county population in a given establishment-county year. The higher values of the coefficient estimate on *Religiosity* in a negative direction indicate that the employees of the establishments resided in more religious counties get less injured than those in less religious counties, and vice-versa. *E* captures the establishment-level controls that include county-level demographic variables, establishment size *(Ln(EstbEmp)),* and working hours per employee *(Ln(WorkHour)).* Following Hilary and Hui (2009) and Adhikari and Agrawal (2016), we consider the county population *(Ln(Pop))*, median age *(Ln(MedAge))*, percentage of people having at least one year of high school education *(Educ)*, and percentage of married people *(Married)* as our county-level demographic variables. We also

control for social capital *(SocialCap)* to capture non-religious community solidarity. These county-level demographic variables are correlated with county-level religious participation; we want to disentangle the pure religious participation effect per se from simply being correlated with the other demographic characteristics. *X* represents a set of firm-specific variables that have been shown to affect changes in workplace safety investment; they are leverage, cash flow, dividends, firm size (*Ln(Assets)*), asset turnover (*Turnover*), tangibility, capital expenditure (*Capex*), and market to book ratio (*MB*). Our regression model includes firm or establishment and year fixed effects to capture the time-invariant and firm-level unobservable shock. All standard errors are robust to heteroskedasticity and corrected for the clustering of observations by establishment county.

Table 2 reports the estimates from the empirical model (1). The first column reports the univariate results, while Columns (2) and (3) include controls and the firm/establishment and year fixed effects, respectively. The coefficient on *Religiosity* in Column (1) is negative and statistically significant, which shows that employees of establishments located in counties with a higher level of religiosity experience better workplace safety performance. When we add firm and year fixed effects in Column (2), the coefficient on *Religiosity* remains negative and statistically significant at the 5 percent level. In this column, speaking of economic magnitude, an increase by a standard deviation of local religiosity leads to a decrease in cases of work-related injuries by 1.50% ($=\exp^{(-0.130*0.112}$)-1). With establishment fixed effects used in place of firm fixed effects in the last column, the same relation remains qualitatively. The magnitude of the coefficient estimates on *Religiosity* varies from -0.130 to -0.247 across these specifications.

When we turn our attention to the firm and establishment-specific control variables that literature has shown to affect changes in workplace safety investment, we find the expected results.

For example, Cohn and Wardlaw (2016) show that firm-level leverage, tangibility, and log of employees are positively related to injury rate, while capital expenditure and firm size are negatively associated with establishment injury. The coefficients of our control variables are in line with those results in the workplace safety literature.

This table shows that, in all our specifications, workplace injury is negatively related to establishment-county level religiosity. In other words, the results from our baseline regression indicate that county-level religiosity positively affects employee welfare, and these results are consistent with our conjecture that local religious culture has a positive association with employee treatment, enhancing the working environment and employee welfare. However, one may be concerned with our finding as establishment-level safety-related activities could be driven by firm-level budgetary and policy initiative decisions. Regardless of the establishments' location, the parent firm equally sets the safety budget and policy initiatives for all of its establishments. Then, how could establishments of the same firm exhibit different levels of workplace safety? We respond to this concern by claiming that, while safety-related budgetary and policy initiative decisions are made at the firm level, safety-related activities are implemented at the establishment level. For instance, Cohn and Wardlaw (2016) contend that establishment managers may cut safety expenditure in order to meet short-run budgeted cost targets. When the implementation of safety programs is at the divisional managers' discretion, the local community members' homophilous social networks and mutual trust solidified through religious belief could significantly influence the local establishments' responsible treatment of their employees.

[Table 2, about here]

4.2 Types of religious adherents and workplace safety

In this section, to further investigate the nature of the relation between local religiosity and workplace safety, we examine whether our baseline results are sensitive to a risk-based explanation of religious effects on employee treatment or depend on religious denominations considering differences between religious groups. Our argument is based on community solidarity and interpersonal interaction induced by the religious network, while a number of studies (e.g., Kumar et al. (2011); Gao et al. (2017); and Chircop et al. (2020a)) investigate the effect of local religiosity on several corporate policies based on organizational risk-taking behavior. Regarding this distinction, some may be skeptical about whether workplace injuries and illnesses in this research are simply proxy for risk-taking. To address this concern, we re-estimate our main analysis controlling for the level of risk.

Specifically, we include several risk-based control variables in our baseline model and re-estimate the results. In this analysis, risk-based control variables include state-level revenue from selling lottery tickets as a percentage of gross domestic product, standard deviation of firm's stock return, standard deviation of operating performance, and research & development expense. Besides, we also draw on risk-taking traits often linked with Catholics in previous literature. Several studies (Hilary and Hui (2009), for example) have highlighted how religious groups are different from one another. For instance, Protestant denominations are more likely to be involved in religious activities (e.g., higher church attendance and financial contributions to churches) and frequently interact with one another. In addition, numerous studies on local religiosity show that Catholics are more prone to risk-taking compared to Protestants in diverse areas of decision making, such as gambling, innovation, stock investment, and corporate investment (e.g., Kumar (2009); Kumar et al. (2011); Schneider and Spalt (2016); among many others). There are also studies on the differences and similarities between Protestants and Catholics, focusing on their

workplace and social ethics (e.g., Arrunada (2010)). Considering distinctions between different religious denominations, we divide our sample based on the dominance of Catholic adherents in counties and run our baseline regressions separately for those subsamples.

Table 3 Panel A provides results after adding risk-based controls to our baseline model. If our main findings are relevant to a risk-based explanation or if our key dependent variable (workplace injury and illness) is a proxy for organizational risk-taking, the significant coefficient on religiosity would fade away. Nevertheless, in Columns (1) and (2), the coefficient estimates on religiosity are negative and statistically significant even after controlling for state-level lottery, return volatility, ROA volatility, and R&D. In addition, we divide our sample into two groups based on the dominance of Catholic adherents in each county, since Catholics are more prone to risk-taking compared to Protestants in diverse areas of decision making (e.g., Kumar (2009); Kumar et al. (2011); and Schneider and Spalt (2016)). If the risk-based explanation drives our key findings, we would observe a stronger effect of religiosity in the high Catholic group and also a substantial difference between the high and low Catholic groups. Columns (3) through (6) show that both groups' coefficient estimates are negative and statistically significant, and their differences are insignificant. Therefore, we conclude that our findings are likely driven by homophilous characteristics embedded in religiosity, and this analysis bolsters our argument based on community solidarity and homophily for our main findings.

We also employ an alternate approach to alleviate the concern about the risk-based explanation for our finding. Considering the differences between religious denominations, we examine if our baseline results change for different religious orientations. Since Protestant and Catholic are the two most popular religions in the U.S., we first measure local religious ideology (*Rel_Ideo*) as the ratio of Protestant adherents minus the ratio of Catholic adherents divided by

their sum. *Rel_Ideo* has a value that ranges from -1 to 1. A value of 1 (-1) for *Rel_Ideo* indicates that the local community's religious identity is dominated by Protestant (Catholic) ideology. Then, to capture the dominance of one religion in a given county, we use the absolute value of *Rel_Ideo* (i.e., *Abs(Rel_Ideo)*) in the regression. As such, the *Abs(Rel_Ideo*) represents whether the county is religiously dominated by one religious group (either Protestant or Catholic). Secondly, we construct the Herfindahl index (i.e., *Rel_HHI)* based on religious adherents by incorporating all minor religions (e.g., Orthodox), although other minority religious groups only account for less than 2% in any county.

Panel B reports the results. In Columns (1) and (2), the results show a negative relation between *Abs(Rel_Ideo)* and the number of workplace accidents, indicating that dominance by Protestant or Catholic religious groups in a given county results in lower workplace injury for that county's establishment. In Columns (3) and (4), we also find that *Rel_HHI* is negatively associated with the number of workplace accidents. It confirms that workplace safety is affected by whether local community members are solidified through sharing identical religious ideologies. When one particular religious denomination is more prevalent in an area, the community would be more likely to get solidified and closer through shared common beliefs, ideologies, and homophily. Hence, this finding is consistent with the relational coordination theory (e.g., Gittell (2002)), which claims that workplace safety environment could be enhanced by the relationship among workers and the resulting workplace coordination.

Recall from our postulation that local community members' homophilous social networks and mutual trust solidified through religious belief significantly influence firms' responsible treatment of their local employees. We acknowledge that the effect of local religiosity on an economic outcome could be jointly influenced by social ties of local communities other than

religion. For example, local community members' homophilous social networks and mutual trust could be solidified through informal networking (e.g., bowling clubs), which can be captured by social capital. Alternatively, local community members' homophilous social networks and mutual trust could overlap with those nested in an ethnic group. To address this concern, we add *Ethnicity-HHI,* based on the ethnic origin of people (e.g., White, Black, Asian, or Hispanic[16]) in a given county, to our estimations, in addition to social capital included in all our regressions. The results reported in Columns (5) and (6) show that the effect of local religiosity is not subsumed by ethnicity homophilous interactions in the county.

[Table 3, about here]

4.3 Potential mechanisms through which religiosity affects workplace safety

To test our hypothesis considering the plausible mechanisms through which local religiosity affects workplace safety, we rely on recent research on workplace safety (e.g., Caskey and Ozel (2017); Bradley et al. (2019); and Bai et al. (2020)). These studies suggest that workplace injuries result from reducing investment in workplace safety and increasing managerial pressure for short-term performance. Thus, we investigate how local religiosity affects workplace safety through those two mechanisms.

First, we expect that managers present with community solidarity and trust through religious networks in the establishment county will use safety investment funds efficiently, especially when they are limited. Safety investments include the cost of maintenance, plant improvements, setting up and enforcing safety policies, training, and oversight programs. However, the limitation is that there are no traceable records of these items and that no company

[16] We collect data on county-level demography and ethnicity from https://www.census.gov/library/publications/2011/compendia/usa-counties-2011.html

reports them separately in the Compustat database. Since we do not have the luxury to extract employee safety expenses from the Compustat database, we estimate discretionary safety expenditure following Caskey and Ozel (2017). Sales, general, and administrative (SG&A) expenses include some product promotional and managerial costs. And, we adopt the following model to measure the residual as a proxy for discretionary employee safety expense.

$$\frac{SG\&A_{i,t}}{EMP_{i,t-1}} = a_0 + \beta_1 * \frac{1}{EMP_{i,t-1}} + \beta_2 * \frac{Sales_{i,t-1}}{EMP_{i,t-1}} + \varepsilon_{i,t} \qquad (2)$$

where SG&A is selling, general, and administrative expenses, and EMP indicates the number of employees reported in the Compustat database. As in Caskey and Ozel (2017), we scale SG&A and EMP by beginning employees rather than beginning assets. We then take the residual from the model (2) within each two-digit SIC coded industry-year to measure our discretionary safety expenditure. Then, we assume that any abnormal discretionary expense per employee, measured by the residual from the model, can be particularly set for employee safety expenses. We then create subsamples based on the median value of the absolute discretionary safety expense.

Panel A of Table 4 reports the regression results for the subsamples. The coefficient estimates on religiosity are negative and statistically significant when discretionary safety expenses are lower (below median value), while they are insignificant for the group with higher discretionary safety expenses. The differences between the two groups are statistically significant at the 1 percent level as well. This result suggests that when managers have limited discretionary safety funds, community solidarity and homophily formed through the local religious network have a more substantial effect on inducing those managers to be more efficient in allocating those resources for workplace safety.

Considering another channel, we investigate whether local religiosity encourages managers to pay attention to workplace safety when they are under productivity pressure. When religiosity

solidifies mutual trust and homophilous interaction within the local community, the local community members would be less likely to abuse one another by dint of their power and authority. For example, establishment managers may not assign extra work to their file and rank employees or force them to work beyond their capacity or in an unsafe working condition. So, we expect that managers with stronger community solidarity will adequately align the job assignments with employees' skills and abilities, even when they are under pressure to increase productivity by increasing working hours, new job assignments, and so on. Following Caskey and Ozel (2017)[17], we define work pressure as the sum of the cost of goods sold and changes in inventory divided by the total number of employees. Then, we divide our sample into two groups based on work pressure. A firm is in the high (low) work pressure group if its productivity is higher (lower) than or equal to its median during the sample period.

The results are presented in Panel B of Table 4. The coefficient estimates on religiosity are negative and statistically significant when managers face performance pressure that results in work pressure for file-and-rank employees. In Columns (1) and (2), the coefficients on *Religiosity* are -0.206 and -0.218 with substantial statistical significance (*t*-statistics of -2.97 and -3.35), respectively. On the contrary, they are not significant for the group with lower work pressure. Hence, the effect of local religiosity is evident, particularly for the high work pressure group. The results support our conjecture that managers are less likely to exploit their file and rank employees by assigning extra work, wrong work orders, or poor working conditions when community solidarity, mutual trust, and homophilous interactions are induced by local religiosity. In sum, establishment county-level religiosity has a significant association with employee safety

[17] Caskey and Ozel (2017) suggest that work pressure increases in order to meet or beat the analysts' earnings targets, which results in workers' injury and illness.

investment and work pressure, and we argue that such effects could be potential channels through which local religiosity affects workplace safety.[18]

[Table 4, about here]

4.4 Subsample analyses: Heterogeneity in the effect of religiosity on workplace safety

In this section, we examine the cross-sectional differences in the effect of religiosity on workplace safety issues. We focus on three aspects of heterogeneity in the influence of religiosity: industry-level union membership, analyst coverage, and county-level social capital.

We first investigate whether industry-level union membership has an impact on the relation between religiosity and workplace safety, using data from the U.S. Bureau of Labor Statistics. In Panel A of Table 5, Columns (1) and (2) report the estimates from the baseline regression Model (1) with union membership added as a control variable. In both columns, *Religiosity* is negatively related to workplace safety outcomes. Hence, our baseline result survives even after controlling for union membership, and the results also show that union membership is positively related to work-related injury and illness. However, the relation could merely represent a correlation, rather than a causal relation, between union membership and workplace safety because jobs with higher

[18] There can also be some views that religious employees could be more risk-averse or take proactive actions for their safety, leading to less workplace injuries. Nevertheless, we are not able to carry out empirical tests about employees' behaviors since we do not possess measures for employees' behaviors regarding their safety in the workplace, to the best of our knowledge. Moreover, we would like to assert that employees' safety-related attitudes need to be encompassed by managers' actions caring for the safety of those employees, in order to actually result in better workplace safety measures. In other words, even if religious employees are risk-averse in the workplace, workplace injuries might not decrease substantially when managers are not ensuring safe working conditions, with the absence of mutual trust and homophilous interactions in the workplace. Thus, we believe the mechanisms based on managers' actions, induced by community solidarity and homophily, that we find for the relation between religiosity and workplace safety would be more influential.

risks related to injury and illness are more likely to be unionized (Hirsch and Berger (1984)). Also, in the literature, the influence of union membership on workplace safety is inconclusive[19].

Then, we treat an establishment as having labor union coverage if its firm operates in an industry with above-median union membership, and vice versa. When we divide our sample into groups based on industry union membership, we find that the coefficients on *Religiosity* are statistically significant only for the group of low union membership establishments. In Columns (5) and (6), the coefficients on *Religiosity* for firms operating in the industry having low union membership are -0.264 and -0.297 and statistically significant at the 1 percent level (*t*-statistics -3.71 and -4.06), respectively. Overall, the results from Panel A provide evidence that the negative effect of religiosity on workplace safety is more pronounced for firms whose industry has low union membership. Although the results initially may seem at odds with our explanation, we argue that local religiosity has a substitutionary effect on workplace safety with respect to industry union membership.

Next, we assess whether the relation between local religiosity and workplace safety varies with different levels of analyst coverage. Bradley et al. (2019) show that analysts investigate firms' safety policies due to the cash flow implications of workplace safety issues on shareholder wealth. For example, Cohn and Wardlaw (2016) provide empirical evidence of firm value deterioration due to workplace injury and illness. Thus, it would be interesting to investigate how analysts' efforts regarding firms' safety policies and investments work alongside the effect of religiosity. As local analysts can have frequent on-site visits and better access to management via information

[19] When union serves as a collective voice (Freeman and Medoff, 1984), unionized workers may be more willing to express their preferences for workplace safety without fear of retaliation (Li and Singleton, 2019). Then, firms with unionized employees may experience lower workplace injuries and illnesses than those of their peers that have no unionized employees. On the other hand, Li et al. (2020) show that at the mean level, the union has no detectable effect but in downward injury distribution.

connections (e.g., social gatherings and religious networks) (O'Brien and Tan (2015)), we expect that local religiosity will enhance analysts' personal connections (through informal meetings) with establishment employees and managers to get first-hand information about workplace safety. To see if there exists a cross-sectional difference in religiosity effect on workplace safety concerning analyst coverage, we create subsamples based on the median value of analysts' coverage.

The results are reported in Panel B of Table 5. We find that the coefficients on *Religiosity* are statistically significant only for the group of high analyst coverage. The coefficients on *Religiosity* are -0.263 and -0.276 (whose t-statistics are -4.04 and -4.58) in Columns (1) and (2), respectively. These coefficient estimates are significantly different from their counterparts. This finding supports our conjecture that the religious network solidifies community relations, mutual trust, and easy access to soft information, which complements the investigation of analysts about workplace safety issues.

Lastly, we investigate how the influence of local religiosity interacts with that of other social networks (e.g., social capital), inducing community solidarity and mutual trust. People can interact with one another through non-religious networks, such as attending labor organizations, business associations, golf courses, physical fitness programs, or sports clubs, which are the components of social capital. Further, social capital has been discovered to enhance mutual cooperation, facilitate transactions, and help firms get corporate contracts or access to external capital (Hasan et al. (2020)). We expect that mutual cooperation and community solidarity aroused by social capital will augment the effect of the religious network we show in this study. We create subsamples based on the median value of county-level social capital and report the results in Panel C of Table 5. We see the coefficient estimates on religiosity are statistically significant only for

the group with high social capital, suggesting a complementary effect between religiosity and social capital for workplace safety.

In sum, our subsample analyses imply that religiosity has a substitutionary effect with respect to union coverage and a complementary effect with respect to a firm's analyst coverage and establishment county's social capital on advancing workplace safety.

[Table 5, about here]

4.5 Sensitivity analyses

4.5.1 Endogeneity issues

In this section, we perform a battery of robustness tests to show that our baseline findings are not driven by endogeneity issues. A major concern for our estimated effect could be a confounding effect since local religiosity is highly correlated with observable (e.g., age, gender, and education) and/or unobservable characteristics (e.g., personal mentality and family tradition) of local communities. We address this endogeneity issue in several ways.

First, we estimate residual local religiosity orthogonalized to several relevant characteristics (e.g., age and education) since these relevant characteristics could drive a person's religious participation. Particularly, we regress establishment county religiosity on income, population, education, married (%), the median age of the county population, political orientation, social capital, Chinese population, Mexican population, and the county population's risky attitude, which is proxied by state revenue from lottery sales as a percentage of Gross Domestic Product (GDP). Then, we take the residual from the estimation[20] as an exogenous definition of our religiosity measure. Panel A of Table 6 reports the results from our baseline Model (1) run on this

[20] The results are reported in Appendix B.

alternative measure of our key independent variable, *Religiosity*. Columns (1) and (2) show that our baseline results are not sensitive to the confounding effect due to *Religiosity* being highly correlated with observable and unobservable county characteristics or religiosity measurement errors. The magnitude of the coefficients is similar to that reported in Table 2.

Second, another primary concern regarding our findings could be that they might be driven by unspecified omitted variables that affect both a person's religious participation and workplace injury in a county. To overcome this endogeneity issue, we employ the instrumental variable approach. Numerous studies on the effect of local religiosity (e.g., Hilary and Hui (2009) and Adhikari and Agrawal (2016)) use a decade earlier religiosity as an IV for their estimations. Similarly, we select the previous decade's religiosity and 3 years lagged population as IV since they are highly correlated with contemporary local religiosity but less likely related to unobservable factors that influence workplace safety. In other words, religiosity a decade earlier and 3 years lagged county population will surely not affect workplace safety other than through contemporary religiosity. Hence, we employ the following two-stage model with an instrument variable (IV) of the lagged county-level religiosity and population.

First-stage:

$$Religiosity_{i,j,t} = a_0 + \beta_1 * Religiosity_{i,j,1990} + \beta_2 * Ln(Pop)_{i,j,t-3} + \sum_3^p \beta_{3\ to\ p} * E_{i,j,t} + \sum_{p+1}^q \beta_{p+1\ to\ q} * X_{j,t} + FEs + \varepsilon_{i,j,t} \qquad (3),$$

Second-stage:

$$Ln(Num\_Cases)_{i,j,t} = a_0 + \beta_1 * Pred\ Religisotiy_{i,j,t} + \sum_2^p \beta_{2\ to\ p} * E_{i,j,t} + \sum_{p+1}^q \beta_{p+1\ to\ q} * X_{j,t} + FEs + \varepsilon_{i,j,t} \qquad (4),$$

where p and q are numbers and *i, j,* and t index establishments-county, firm, and year, respectively. In the first stage, the key dependent variable is contemporary religiosity[21]. In the second stage, the key dependent variable is $Ln(Num\_Cases)_{i,j,t}$, computed as the natural logarithm of the sum of deaths and all injuries and illnesses that result in days away from work or with job restrictions or transfers, and other recordable cases at the establishment in a given year. The primary variable of interest is *Religiosity*, and we use the same control variables used in Model (1). Also, as in the baseline regression, standard errors are robust to heteroskedasticity and corrected for the clustering of observations by establishment county. Panel B of Table 6 reports the estimates from our IV regression Models (3) and (4). The results are consistent with those reported in Table 2 as the coefficient on the predicted *Religiosity* is negative with statistical significance.

Third, we further attempt to address the endogeneity issue using a difference-in-difference (DID) empirical approach. Since cultural values change slowly, it is difficult to find a genuinely exogenous shock that changes local religiosity. However, it is still valuable to see how workplace safety is affected by a certain event that drives changes in local religiosity. As such an event, we choose a migration shock, the inflow of people into a county. For this set of tests involving migration flows, we utilize "Statistics of Income (SOI) Tax Stats – County-to-County Migration Data"[22]. The data are based on year-to-year address changes reported on individual income tax returns filed with the IRS. Using this information, we identify county-level migration flows connecting the population's county of current residence and where the residents migrate from.

To form the treatment group, we first define high migration-in as the percentage of migration that comes from counties whose religiosity is greater than the yearly median of all

[21] The first-stage F-statistic is 380.47, which satisfies the minimum criteria of 10.
[22] Data are provided by the United States Internal Revenue Service (IRS) (http://www.irs.gov).

migration sending counties. Then, we consider firm-establishment as in a treatment group if its county's migration receiving is in the top decile of our sample migration-in, and control group otherwise. Treatment and control groups are one-to-one matched based on firm characteristics. We take the highest migration-in year for the treatment group as the event year and the following year as the post year, and the key variable of interest is the interaction between treatment and post dummy. Figure 3 shows the parallel trend of workplace injuries between treatment and benchmark groups for the pre-event years. After the migration shock, however, there is a greater decrease in workplace injuries for the treatment group than for the benchmark group (i.e., the slope of the line for the treatment group is steeper than that for the benchmark group after the intervention). When a county receives migration from other highly religious counties, the establishments in this county experience a noticeable drop in workplace injuries and illnesses. We interpret the difference between the blue dashed line and the blue dotted line of workplace injury for the treatment group as a result of the migration shock to the county because the migration shock increases the religious adherents in the receiving county.

The results from our DID regressions are presented in Panel C of Table 6. The marginal effect of the positive shock to the establishment-level religiosity is negative and highly statistically significant, implying that local religiosity does matter in establishment-level work-related safety issues. The coefficient on the interaction between treatment and post in Column (1) is -0.074, which is statistically significant at the 1 percent level. The result is qualitatively similar when we use establishment fixed effects instead of firm fixed effects in Column (2).

[Table 6 about here]

4.5.2 Additional robustness analyses

A potential concern could be that our results may be driven by sample selection bias since our tests are based on the locations of establishments and firms rarely locate their establishments in a random fashion. Thus, in order to alleviate the concern over the sample selection bias issue, we conduct a propensity score matching (PSM) analysis and report the results in Table 7.

We divide the sample into five groups based on religiosity (quintile by firm and year). We then create a dummy variable equal to 1 if the establishment county religiosity is in the top quintile by firm and year, and zero otherwise. In the first stage, we test whether firm, establishment, and county characteristics affect a firm's decision to locate one or more of its establishments in a highly religious county, and the results are reported in Panel A. Using the probit model, in Column (1), we see only three characteristics (establishment county-specific characteristics) have a small contribution to a firm's choice to locate its establishment in a highly religious county. In Column (2), we re-run the probit model using the matched sample only. We find those two characteristics are not significantly different between the test group and the matched group. In Panel B, where we estimate our baseline regressions using both test and matched groups only, we find the negative effect of establishment county-level religiosity remains statistically significant on work-related injuries. Hence, this result, at least partially, alleviates concerns about potential sample selection bias in the presentation of the relation between local religiosity and workplace safety.

[Table 7, about here]

We further conduct a set of other additional robustness tests and include the results in Appendix C. The first test in Panel A uses a restricted sample of firms with multiple establishments. Panel B shows results based on alternative measures of work-related injury. We exclude illness from our comprehensive injury and illness measure, keeping only the injury portion. We also use the natural logarithm of the number of days away from work. Alternative

injury measures include injury rates (TCR and DART). TCR is the total number of cases in a given establishment year divided by the number of hours worked by all employees at the establishment in a given year and then multiplied by 200,000. DART is the number of injuries and illnesses that result in days away from work or with job restriction or transfer, divided by the number of hours worked by all employees in a given establishment year, and then multiplied by 200,000. Panel C reports the results from our baseline Model (1) with different fixed effects and firm clustering. In Panel D, we address whether the results are driven by a few establishments in exceptionally high or low religious counties since our key variable of interest is the religiosity level of the counties where the establishments are located. Following Adhikari and Agrawal (2016) to find the most and/or least religious states, we address this concern by excluding establishment-year observations that are located in any counties within the five most religious states (MS, UT, AL, LA, and AR) and/or the five least religious ones (VT, NH, ME, MA, and RI). In all these tests, our main results continue to hold. A further concern might be that our key independent variable is linearly interpolated in the missing survey years, which could bias our results. To address this concern, in Panel E, we restrict our analysis to ARDA decennial survey years (2010 and 2002 for 2000 survey year) only. In Panels F and G, we control family firms and short interests[23], respectively. Finally, in Panel H, we test whether the effect of religiosity exists in the financial crisis period (2007-2009). Overall, the results survive from these different sets of robustness checks.

4.6 Firm-level evidence of religiosity and employee treatment

[23] According to Bai et al. (2020), the removal of short-selling constraints leads to a significant decrease in firms' investment in workplace safety as well as higher work-related injury rates. They suggest that short-sellers' pressure can have an impact on workplace safety.

In this section, we check the validity of our main findings. If religiosity influences managers' attitudes toward workplace safety, leading to fewer injuries and illnesses of workers, there would be some firm-level evidence of employee treatment concerning religiosity. We provide several firm-level evidence with respect to religiosity, including firm-level employee-related violations[24], health and safety measures, and employment uncertainty.

Firstly, we examine whether establishment-level employee-weighted religiosity affects employee-related violations, including non-compliance with labor laws, health and safety violations, and other violations related to labor exploitation. We also examine how religiosity affects a firm's likelihood of receiving federal penalties for violating labor laws. Following Chircop et al. (2020b) and Li and Raghunandan (2020), we define violation as the total number of employee-related violations per year and penalty as the natural logarithm of the total penalty amount per year. We then regress this employee-related violation and penalty on our establishment-level employee weighted religiosity and other related control variables. We include three-digit SIC coded industry fixed-effect in this estimation. The results are reported in Panel A of Table 8. The coefficient estimates on employee weighted religiosity are negative and statistically significant for both violations and penalty amount. This result suggests that firms are less likely to violate employee-related laws and more likely to reduce the incidence and severity of employee-related violations (such as penalties).

[24] We collect labor-related violation data from the Violation Tracker. We also thank Phil Mattera of Good Jobs First for providing us with access to workplace inspection data from the Violation Tracker database. This database contains workplace inspections by eight federal agencies: The Employee Benefits Security Administration (EBSA), Equal Employment Opportunity Commission (EEOC), Federal Motor Carrier Safety Administration (FMCSA), Federal Railroad Administration (FRA), Department of Health & Human Services Office of Inspector General (HHSOIG), Mine Safety & Health Administration (MSHA), Occupational Safety & Health Administration (OSHA), and Department of Labor Wage & Hour Division (WHD).

Secondly, we also investigate whether religiosity affects firms' ethically responsible behavior towards their employees. Since our argument relies on the religiosity-induced community solidarity and trust in the establishment county, managers and their rank-and-file employees may get to know each other more than what their formal relationship would imply, which may not (if not improve) aggravate their rank-and-file employees' employment uncertainty. As a result, we expect managers to take workers' health and safety measures more often and reduce their employment uncertainty. We collect workers' health and safety strength and workforce reduction indicator data from KLD and test our hypothesis on employee weighted religiosity. Panel B of Table 8 reports the results. The coefficient on employee weighted religiosity in Column (1) is positive and statistically significant, suggesting that firms take measures to ensure workers' health and safety in the workplace. The coefficient in Column (2) is negative and statistically significant, which implies that employees are more likely to be secured in their employment and that there is a proper alignment of job responsibility for employees.

[Table 8, about here]

4.7 Workplace accidents and firm performance

In this paper, we have shown that local religiosity has an effect of improving workplace safety, signified by a reduced number of injuries in local workplaces. This finding leads us to question whether that relation between religiosity and workplace safety has any implications for firm value and performance. Hence, lastly, we examine to what extent workplace safety influences firm performance. And then, based upon that relation between workplace safety and firm performance, if there is any, we would be able to draw the inference regarding how religiosity as an influential factor for workplace safety has an (indirect) implication for firm performance. Since

the establishment-level performance measure is not publicly available, we carry out this test at the firm level and therefore utilize the aggregate number of workplace injuries and deaths at the firm level as our variable of primary interest. To measure firm performance, we use market to book ratio (*MB*) and *Tobin's Q*. Then, to examine how aggregated workplace injuries are related to these firm performance measures, we use the system generalized method of moments (SGMM) technique, which considers the endogeneity of firm size, leverage, sales growth, and cash flow in the model. In particular, SGMM estimation instruments endogenous variables with suitable lags of their own and lagged differences.

Table 9 reports the results. We find that workplace accidents are negatively associated with firm performance regardless of its measurement as *MB* or *Tobin's Q*. Economically speaking, a one percent increase in *Ln(Num of Cases)* leads to a decrease in *MB* (*Tobin's Q*) by 0.025 (0.166). Thus, firms tend to exhibit better performance when they are associated with better workplace safety, which is significantly influenced by religiosity. To put it another way, from this negative impact of adverse workplace safety incidents on firm performance, we can infer that the effect of local religiosity promoting employee safety and welfare could go beyond and (indirectly) affect firm performance and, ultimately, shareholder wealth as well. This view broadly corroborates with prior studies on employee treatment, highlighting the importance of human capital protection. Like numerous studies, including Edmans (2011), documenting a positive effect of employee satisfaction on firm value, we show that workplace injuries as tangible events symbolizing employee welfare lead to a noteworthy consequence regarding firm performance. While we are not able to show a direct effect of local religiosity on firm value, our findings suggest a vital value implication of local religiosity, put into effect through its impact on human capital protection.

[Table 9, about here]

5. Conclusion

In this paper, we examine the effect of local religiosity on workplace safety. Using the establishment-level data compiling on the incidents of work-related injuries from the Occupational Safety and Health Administration, we provide evidence that employees of the establishments resided in more religious counties get less injured compared to those in less religious counties. Our multivariate empirical tests lend strong support for our hypotheses, and our main results survive through a set of robustness tests. The basis for our finding is that religiosity significantly influences employee treatment by enhancing community solidarity and trust through informal social networks among residents. The religiosity-induced community solidarity influences managers' attitude toward workplace safety, acting as a complement to workplace safety investment. Secondly, due to religious homophilous interaction between community members, establishment-level managers properly align the job responsibilities and allocate other necessary resources efficiently. Overall, our study shows that local religiosity is a critical element in determining employee treatment and workplace safety, which is linked with firm performance.

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Table 1: Descriptive statistics

This table reports summary statistics for measures of establishment-level employees' deaths, and all injuries and illnesses, establishment-country level religiosity and demographics, and other firm-specific control variables. Our sample consists of 72,287 establishment-year observations with 1,615 (5,268) unique firms (establishments) covering the period 2002-2010. All continuous variables are winsorized at the top and bottom 1% levels. Appendix A provides more details of all variables.

Variable	N	Mean	SD	P25	Median	P75
Num of Cases	72287	16.284	29.137	3.000	7.000	16.000
Ln(Num of Cases)	72287	2.129	1.170	1.386	2.079	2.833
EstbEmp	72287	249.661	432.418	75.000	127.000	226.000
Ln(WorkHour)	72287	1940.90	324.89	1760.00	1994.45	2103.95
Religiosity	72287	0.507	0.112	0.419	0.505	0.582
Leverage	72287	0.273	0.162	0.150	0.252	0.373
Cashflow	72287	0.098	0.079	0.065	0.102	0.146
Dividends	72287	0.018	0.021	0.000	0.012	0.029
Assets (bln)	72287	31.584	81.967	1.900	10.504	33.005
Ln(Assets)	72287	8.959	1.837	7.550	9.260	10.404
Turnover	72287	1.451	0.720	0.963	1.319	1.771
MB	72287	1.352	0.767	0.796	1.135	1.746
Tangibility	72287	0.380	0.186	0.228	0.363	0.550
Capex	72287	0.056	0.038	0.027	0.044	0.074
SocialCap	72287	-0.494	0.876	-1.113	-0.468	0.084
MedAge	72287	36.692	3.634	34.110	36.600	38.940
Married	72287	0.192	0.025	0.173	0.193	0.211
Pop	72287	890552.6	1695717.7	92067.2	308760.0	886217.4
Educ	72287	83.066	6.345	79.640	84.160	87.480
Injuryonly	72287	16.898	51.539	3.000	7.000	15.000
Daysawork	72287	276.66	1057.56	1.000	66.000	233.00
TCR	72287	7.761	6.790	2.627	6.139	11.063
DART	72287	5.094	5.162	1.137	3.630	7.461

Table 2: Baseline results

This table presents the results from the OLS regression Model (1), where the key dependent variable is the natural logarithm of the total number of cases of employees' death, and injuries and illnesses that result in days away from work or with job restriction or transfers, and other recordable cases at the establishment in a given year. The key independent variable is *Religiosity*, measured as the number of religious adherents in a county divided by the county population in a year. *Religiosity* in the non-census year is determined by linear interpolation. All other independent variables are defined in Appendix A. Columns (2) and (3) include firm and year, and the establishment and year fixed effects, respectively. *T*-statistics are computed using standard errors corrected for clustering at the establishment-county level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Variable	*Ln(Num of Cases)*		
Religiosity	-0.247**	-0.130**	-0.151***
	(-2.21)	(-2.45)	(-2.95)
Ln(WorkHour)		0.004***	0.004***
		(11.70)	(10.63)
Ln(EstbEmp)		0.836***	0.832***
		(117.73)	(108.78)
Leverage		0.156***	0.110***
		(3.99)	(3.03)
Cashflow		0.378***	0.262***
		(6.52)	(4.70)
Dividends		-0.426	-0.204
		(-1.39)	(-0.86)
Ln(Assets)		-0.007	0.009
		(-0.50)	(1.45)
Turnover		-0.013	-0.006
		(-1.00)	(-0.48)
Tangibility		0.321***	0.240***
		(5.02)	(4.43)
Capex		-0.636***	-0.700***
		(-4.54)	(-5.24)
MB		-0.021*	-0.001
		(-1.93)	(-0.16)
Ln(MedAge)		0.026	-0.037
		(0.27)	(-0.43)
Educ		-0.368	-0.399*
		(-1.49)	(-1.69)
Ln(Pop)		-0.000	0.010
		(-0.02)	(0.97)
Married		0.343	0.454

		(0.68)	(0.97)
SocialCap		0.010	0.012
		(0.81)	(1.02)
Constant	2.254***	-4.412***	-4.513***
	(42.22)	(-10.49)	(-10.87)
Year FE	Yes	Yes	Yes
Firm FE	No	Yes	No
Estab. FE	No	No	Yes
N	72,287	72,287	72,287
Adj. R2	0.001	0.664	0.711

Table 3: Riskiness perspective of religiosity and workplace safety

This table presents the results from the OLS regression Model (1), where the key dependent variable is the natural logarithm of the total number of cases of employees' death, and injuries and illnesses that result in days away from work or with job restriction or transfers, and other recordable cases at the establishment in a given year. In Columns (1) and (2) of Panel A, we add different risk-based control variables in our baseline model, including state-level revenue generated from lottery selling as a percentage of states Gross Domestic Product (GDP), return volatility, ROA volatility, and R&D expenditure. Panel B provides results controlling different religious denominations. The key independent variable considers two different types of Religious adherent groups: Protestant orientation and Catholic orientation. *Abs(Rel_Ideo)* is the absolute value of *Rel_Ideo,* which is measured as the ratio of protestant adherents minus the ratio of catholic adherents divided by their sum. *Rel_HHI* is the Herfindahl index of different religious groups' participation (Protestant, Catholic, Orthodox, and other) in churches, which is calculated as the sum of the squares of different religious adherents by county and year. In Columns (5) and (6), we add ethnicity as an additional control variable: *Ethnicity_HHI* is the Herfindahl index of different ethnicity origins (e.g., White, Black, Asian, and Hispanic) in the county. All other independent variables are defined in Appendix A. *T*-statistics are computed using standard errors corrected for clustering at the establishment-county level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: With additional risk-based controls

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Ln(Number of Cases)					
	Controlling riskiness		Catholic Group			
			High	Low	High	Low
Religiosity	-0.127**	-0.150***	-0.220***	-0.173***	-0.286***	-0.134**
	(-2.37)	(-2.94)	(-2.91)	(-2.66)	(-3.75)	(-2.10)
			B(3)=B(4) p-value= 0.631		B(5)=B(6) p-value= 0.108	
Lottery	-0.000	-0.002*	0.004	-0.002	0.001	-0.004***
	(-0.31)	(-1.81)	(1.53)	(-1.25)	(0.66)	(-2.70)
RETVOL	-2.741***	-2.989***	-0.712*	-1.908***	-0.748	-2.072***
	(-5.78)	(-6.40)	(-1.68)	(-3.92)	(-1.56)	(-4.12)
STD(ROA)	-0.086	-0.065	-0.041	-0.104	-0.019	-0.123
	(-1.11)	(-0.87)	(-0.48)	(-1.41)	(-0.22)	(-1.63)
R&D	0.761	-0.389	-0.481*	-0.154	-0.485*	-0.274
	(0.99)	(-0.58)	(-1.82)	(-0.32)	(-1.70)	(-0.58)
Ln(WorkHour)	0.004***	0.004***	0.004***	0.003***	0.004***	0.004***
	(11.05)	(10.10)	(8.12)	(8.24)	(7.36)	(7.07)
Ln(EstbEmp)	0.837***	0.833***	0.822***	0.842***	0.814***	0.842***

	(117.58)	(109.09)	(73.71)	(91.17)	(71.55)	(85.78)
Leverage	0.232***	0.176***	0.419***	0.097*	0.321***	0.082
	(5.34)	(4.30)	(5.97)	(1.77)	(5.05)	(1.54)
Cashflow	0.230***	0.154**	0.382***	0.060	0.294***	0.047
	(3.46)	(2.40)	(3.97)	(0.67)	(3.10)	(0.55)
Dividends	-0.672**	-0.319	-0.479	-0.550	-0.029	-0.550*
	(-2.21)	(-1.36)	(-0.88)	(-1.50)	(-0.07)	(-1.88)
Ln(Assets)	-0.004	0.004	-0.009	0.009	0.002	0.011
	(-0.26)	(0.67)	(-0.39)	(0.43)	(0.24)	(1.26)
Turnover	-0.014	-0.008	-0.027	0.002	-0.030	0.006
	(-0.95)	(-0.62)	(-1.24)	(0.10)	(-1.42)	(0.37)
Tangibility	0.387***	0.253***	0.292***	0.396***	0.116	0.302***
	(5.44)	(4.27)	(2.69)	(4.14)	(1.28)	(3.84)
Capex	-0.553***	-0.658***	-0.527**	-0.467***	-0.629***	-0.613***
	(-3.83)	(-4.83)	(-2.09)	(-2.64)	(-2.81)	(-3.57)
MB	-0.007	0.017*	-0.016	0.012	0.013	0.025**
	(-0.61)	(1.90)	(-1.01)	(0.75)	(0.91)	(2.05)
Ln(MedAge)	0.023	-0.043	-0.061	-0.091	-0.169	-0.102
	(0.24)	(-0.50)	(-0.44)	(-0.91)	(-1.30)	(-1.00)
Educ	-0.357	-0.398*	-0.534	-0.258	-0.621*	-0.178
	(-1.46)	(-1.70)	(-1.51)	(-1.29)	(-1.68)	(-0.91)
Ln(Pop)	0.000	0.010	-0.007	-0.019***	0.005	-0.009
	(0.00)	(1.03)	(-0.53)	(-2.69)	(0.35)	(-1.26)
Married	0.338	0.464	0.747	0.332	1.093	0.304
	(0.67)	(1.00)	(0.93)	(0.71)	(1.38)	(0.65)
SocialCap	0.008	0.011	-0.016	0.035***	-0.007	0.030**
	(0.64)	(0.97)	(-0.77)	(2.71)	(-0.35)	(2.24)
Constant	-4.332***	-4.319***	-3.950***	-3.759***	-3.619***	-4.048***
	(-10.10)	(-10.23)	(-6.18)	(-6.49)	(-5.79)	(-6.60)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	No	Yes	Yes	No	No
Estab. FE	No	Yes	No	No	Yes	Yes
N	68,844	68,844	28,344	40,500	28,344	40,500
Adj. R2	0.665	0.713	0.674	0.678	0.729	0.721

Panel B: Controlling religious types

	(1)	(2)	(3)	(4)	(5)	(6)
Variable	*Ln(Num of Cases)*					
Abs(Rel_Ideo)	-0.088***	-0.098***				
	(-3.24)	(-3.83)				
Rel_HHI			-0.253***	-0.270***	-0.236***	-0.258***
			(-4.96)	(-5.43)	(-4.80)	(-5.31)
Ethnicity_HHI					0.430***	0.326***
					(6.61)	(5.21)
Lottery	-0.000	-0.002*	-0.001	-0.002*	-0.000	-0.002*
	(-0.36)	(-1.93)	(-0.38)	(-1.95)	(-0.35)	(-1.89)
RETVOL	-1.254***	-1.361***	-1.258***	-1.357***	-1.280***	-1.363***
	(-3.18)	(-3.07)	(-3.20)	(-3.07)	(-3.21)	(-3.07)
STD(ROA)	-0.108**	-0.077	-0.109**	-0.077	-0.107**	-0.076
	(-1.98)	(-1.34)	(-1.99)	(-1.34)	(-1.97)	(-1.32)
R&D	-0.390	-0.505**	-0.392	-0.508**	-0.403	-0.509**
	(-1.52)	(-2.02)	(-1.53)	(-2.04)	(-1.59)	(-2.04)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-4.406***	-4.396***	-4.047***	-4.006***	-4.266***	-4.169***
	(-10.38)	(-10.61)	(-9.28)	(-9.45)	(-9.81)	(-9.79)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	No	Yes	No	Yes	No
Estab. FE	No	Yes	No	Yes	No	Yes
N	68,844	68,844	68,844	68,844	68,844	68,844
Adj. R2	0.665	0.713	0.665	0.713	0.667	0.714

Table 4: Potential mechanism through which religiosity affect workplace safety

This table reports the relation between establishment-county religiosity and establishment-level employee treatment, proxied by the discretionary safety investment and work pressure. Panel A reports the results from the relation between Religiosity and workplace injury with respect to discretionary safety investment (see Model (2)). Panel B reports the relation between establishment-county religiosity and establishment-level employee work-pressure, proxied by the firm-level productivity. The key dependent variable is the work pressure, measured as the sum of the cost of goods sold and inventory changes divided by the total number of employees. The key independent variable is *Religiosity*, measured as the number of religious adherents in a county divided by the county population in a year. *Religiosity* in the non-census year is determined by linear interpolation. All other independent variables are defined in Appendix A. *T*-statistics are computed using standard errors corrected for clustering at the establishment-county level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Religiosity and absolute discretionary expense

	(1)	(2)	(3)	(4)
Variable	*Ln(Num of Cases)*			
Abs Disc. Expense	High	Low	High	Low
Religiosity	-0.012	-0.247***	0.032	-0.305***
	(-0.17)	(-4.30)	(0.43)	(-5.52)
	β_1=β_2 p-value= 0.0098		β_3=β_4 p-value= 0.0003	
Controls	Yes	Yes	Yes	Yes
Constant	-4.205***	-4.190***	-4.357***	-4.254***
	(-7.78)	(-7.47)	(-8.50)	(-7.39)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	No	No
Estab. FE	No	No	Yes	Yes
N	35,654	35,981	35,654	35,981
Adj. R2	0.672	0.658	0.725	0.694

Panel B: Religiosity and work pressure

	(1)	(2)	(3)	(4)
Variable	*Ln(Num of Cases)*			
Work pressure	High	Low	High	Low
Religiosity	-0.206***	-0.052	-0.218***	-0.080
	(-2.97)	(-0.83)	(-3.35)	(-1.28)
	β_1=β_2 p-value= 0.099		β_3=β_4 p-value= 0.126	
Controls	Yes	Yes	Yes	Yes
Constant	-3.590***	-4.924***	-4.607***	-4.346***
	(-6.58)	(-8.58)	(-9.63)	(-7.73)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	No	No
Estab. FE	No	No	Yes	Yes
N	36,198	35,927	36,198	35,927
Adj. R2	0.679	0.643	0.728	0.687

Table 5: Subsample analysis: Heterogeneity in religious effect on workplace safety

This table reports the relation between establishment-county religiosity and workplace safety from the context of different subsamples, where the key dependent variable is the natural logarithm of the total number of cases of employees' death, and injuries and illnesses that result in days away from work or with job restriction or transfers, and other recordable cases at the establishment in a given year. The key independent variable is *Religiosity*, measured as the number of religious adherents in a county divided by the county population in a year. *Religiosity* in the non-census year is determined by linear interpolation. Panel A represents a subsample based on establishments of firms operating under industry with high vs. low levels of labor union membership. Panel B represents a subsample based on whether the parent company of establishments has a higher number of analysts following. Panel C provides a subsample based on the establishment-county social capital. The high group indicates firms above the median values of their respective categories. All other independent variables are defined in Appendix A. *T*-statistics are computed using standard errors corrected for clustering at the establishment-county level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Religious effect under industry labor union influence

Variable	*Ln (Number of Cases)*					
			High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
Religiosity	-0.168***	-0.196***	-0.055	-0.264***	-0.051	-0.297***
	(-2.77)	(-3.18)	(-0.61)	(-3.71)	(-0.56)	(-4.06)
			β_3=β_4 p-value= 0.069		β_5=β_6 p-value= 0.035	
Union	0.612***	0.448***	--	--		
	(5.14)	(3.82)	--	--	--	--
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	No	Yes	Yes	No	No
Estab. FE	No	Yes	No	No	Yes	Yes
N	47,768	47,768	23,524	24,244	23,524	24,244
Adj. R2	0.668	0.707	0.698	0.620	0.737	0.654

Panel B: Religious effect under analyst coverage

	Ln (Number of Cases)			
	High	Low	High	Low
Variable	(1)	(2)	(3)	(4)
Religiosity	-0.263***	-0.066	-0.276***	-0.048
	(-4.04)	(-0.89)	(-4.58)	(-0.64)
	β_1=β_2 p-value= 0.059		β_3=β_4 p-value= 0.018	
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	No	No
Estab. FE	No	No	Yes	Yes
N	25,036	25,953	25,036	25,953
Adj. R2	0.668	0.682	0.707	0.729

Panel C: Religious effect under high vs low social capital of the county

	Ln (Number of Cases)			
	High	Low	High	Low
Variable	(1)	(2)	(3)	(4)
Religiosity	-0.155**	-0.115	-0.204***	-0.104
	(-2.33)	(-1.39)	(-3.06)	(-1.40)
	β_1=β_2 p-value= 0.706		β_3=β_4 p-value= 0.287	
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	No	No
Estab. FE	No	No	Yes	Yes
N	36,145	36,142	36,145	36,142
Adj. R2	0.670	0.673	0.720	0.720

Table 6: Robustness checks

Panel A uses a residual of *Religiosity* regressed on age, income, education, total population, married people, political orientation, social capital, Chinese and Mexican population, and risky attitudes of a county population, proxied by state lottery revenue as a percentage of states Gross Domestic Product (GDP). Panel B reports the results from the Two-stage least squares (2SLS) regression analysis. The instruments are religiosity in 1990 and three years lagged county population. Panel C reports the result of estimates from difference-in-differences regressions exploiting migration shocks in a given county. The key independent variable is the interaction between treatment and post dummy. To form the treatment group, we first define high migration-in as the percentage of migration that comes from counties whose religiosity is greater than the yearly median of all migration sending counties. Then, we consider firm-establishment as treatment if its county's migration receiving is in the top decile of our sample migration-in, and control group otherwise. Treatment and control groups are one-to-one matched based on firm characteristics. We take the highest migration-in year for the treatment group as the event year and the following year as the post year. All other independent variables are defined in Appendix A. *T*-statistics are computed using standard errors corrected for clustering at the establishment-county level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Alternative definition of religiosity/residual

	Ln (Num of cases)	
Variable	(1)	(2)
Residual Religiosity	-0.128**	-0.141***
	(-2.49)	(-2.81)
Controls	Yes	Yes
Year FE	Yes	Yes
Firm FE	Yes	No
Estab. FE	No	Yes
N	72,287	72,287
Adj. R2	0.664	0.711

Panel B: IV regression results

	(1)	(2)
	First stage	Second stage
Variables	*Religiosity*	*Ln(Num of Cases)*
Religiosity		-0.326***
		(-4.73)
$Religiosity_{1990}$	0.601***	
	(80.42)	
$Ln(Pop)_{t-3}$	0.019***	
	(34.99)	
Ln(WorkHour)	-0.000*	0.004***
	(-1.95)	(11.84)
Ln(EstbEmp)	-0.000	0.837***
	(-0.11)	(114.03)
Leverage	-0.008**	0.150***
	(-2.49)	(3.88)
Cashflow	-0.007	0.373***
	(-1.46)	(6.49)
Dividends	-0.032	-0.449
	(-1.11)	(-1.47)
Ln(Assets)	-0.002	-0.008
	(-1.26)	(-0.54)
Turnover	0.001	-0.012
	(1.48)	(-0.89)
Tangibility	-0.002	0.311***
	(-0.45)	(4.95)
Capex	-0.011	-0.644***
	(-0.92)	(-4.64)
MB	0.001	-0.022**
	(1.58)	(-2.02)
Ln(MedAge)	-0.187***	-0.004
	(-21.82)	(-0.04)
Educ	-0.247***	-0.454***
	(-15.83)	(-2.78)
Married	1.166***	0.432
	(28.18)	(1.01)
SocialCap	0.023***	0.018*
	(21.49)	(1.75)
Constant	0.660***	-3.694***
	(14.25)	(-7.47)
Year FE	Yes	Yes
Firm FE	Yes	Yes
N	71,911	71,911
Adj R2	0.665	0.664

Panel C. Migration shock

	(1)	(2)
Variable	*Ln (Num of Cases)*	
*Treat*Post*	-0.074***	-0.070***
	(-3.16)	(-2.87)
Ln(WorkHour)	0.000***	0.000**
	(3.65)	(2.51)
Ln (EstbEmp)	0.840***	0.832***
	(56.27)	(47.96)
Leverage	-0.248**	-0.229*
	(-2.15)	(-1.93)
Cashflow	0.129	0.013
	(0.77)	(0.07)
Dividends	-1.026	-1.013
	(-1.13)	(-1.27)
Ln(Assets)	0.028	-0.001
	(0.69)	(-0.08)
Turnover	0.046	0.038
	(1.14)	(0.98)
Tangibility	0.538***	0.248
	(3.03)	(1.63)
Capex	-0.737	-0.396
	(-1.60)	(-0.80)
MB	0.037	0.029
	(1.10)	(1.07)
Ln (MedAge)	-0.130	-0.149
	(-0.81)	(-0.95)
Educ	-0.335	-0.459
	(-0.88)	(-1.31)
Married	0.065	0.556
	(0.07)	(0.66)
Ln (Pop)	-0.012	0.010
	(-0.88)	(0.77)
Socialcap	0.037*	0.040*
	(1.82)	(1.83)
Constant	-1.688**	-1.421**
	(-2.35)	(-2.19)
Firm FE	Yes	No
Year FE	Yes	Yes
Estab. FE	No	Yes
N	11,558	11,558
Adj. R2	0.655	0.714

Table 7: Propensity score matching analysis

This table presents the results from the propensity score matching analysis. Panel A reports results from the probit model, where the dependent variable is *High Religiosity*, measured as a dummy variable equal to one if the establishment county *Religiosity* is in the top quintile by firm and year. *Religiosity* is the number of religious adherents in a county divided by the county population in a year. Column (1) uses our full sample of establishments. Column (2) uses only a matched sample of establishments, establishments located in high religiosity counties, and their equivalent peers located in lower religiosity counties. Control variables include the same set of variables used in the previous analysis. Panel B reports result from the baseline Model (1) on the propensity score-matched sample of establishments, where the key dependent variable is the natural logarithm of the total number of cases of employees' death, and injuries and illnesses that result in days away from work or with job restriction or transfers, and other recordable cases at the establishment in a given year. All other independent variables are defined in Appendix A. *T*-statistics are computed using standard errors corrected for clustering at the establishment-county level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: PSM matching (quintile)

	Before Match	After Match
Variable	(1)	(2)
	Pr(High_Religiosity=1)	
Ln(WorkHour)	-0.001	-0.001
	(-1.10)	(-0.87)
Ln(EstbEmp)	0.012	0.001
	(0.80)	(0.05)
Leverage	-0.017	0.133
	(-0.20)	(1.05)
Cashflow	0.029	0.256
	(0.24)	(1.32)
Dividends	0.153	-0.781
	(0.22)	(-0.77)
Ln(Assets)	-0.006	0.006
	(-0.17)	(0.13)
Turnover	0.007	0.008
	(0.25)	(0.18)
Tangibility	-0.052	0.171
	(-0.31)	(0.71)
Capex	0.088	-0.358
	(0.25)	(-0.72)
MB	-0.011	0.022
	(-0.49)	(0.60)
Ln(MedAge)	-0.817	0.175
	(-1.08)	(0.21)
Educ	-4.419***	-0.188
	(-3.45)	(-0.14)

Married	0.066	-0.004
	(1.26)	(-0.06)
Ln(Pop)	8.863***	-0.518
	(2.89)	(-0.15)
SocalCap	0.380***	-0.016
	(5.06)	(-0.20)
Constant	3.357	0.004
	(1.13)	(0.00)
Year FE	Yes	Yes
Firm FE[25]	Yes	Yes
N	66,385	23,166
Pseudo R2	0.022	0.006

[25] Stata does not permit us to estimate PSM model with establishment fixed effects.

Panel B: The second stage regression

	(1)	(2)
Variable	*Ln(Num of Cases)*	
Religiosity	-0.105*	-0.128**
	(-1.75)	(-2.10)
Ln(WorkHour)	0.003***	0.003***
	(7.15)	(6.20)
Ln(EstbEmp)	0.851***	0.847***
	(91.51)	(85.31)
Leverage	0.176**	0.178***
	(2.43)	(2.81)
Cashflow	0.393***	0.178
	(3.32)	(1.55)
Dividends	-0.352	-0.701
	(-0.64)	(-1.43)
Ln(Assets)	0.018	0.027**
	(0.70)	(2.19)
Turnover	-0.021	-0.023
	(-0.81)	(-0.99)
Tangibility	0.288***	0.176*
	(2.67)	(1.81)
Capex	-0.886***	-0.996***
	(-3.31)	(-3.70)
MB	-0.005	0.017
	(-0.24)	(1.10)
Ln(MedAge)	-0.007	-0.086
	(-0.05)	(-0.78)
Educ	-0.081	-0.168
	(-0.31)	(-0.73)
Ln(Pop)	0.004	0.015
	(0.31)	(1.41)
Married	0.576	0.559
	(0.97)	(1.05)
SocialCap	-0.005	0.007
	(-0.32)	(0.44)
Constant	-4.625***	-4.452***
	(-7.63)	(-7.16)
Year FE	Yes	Yes
Firm FE	Yes	No
Estab. FE	No	Yes
N	23,186	23,186
Adj. R2	0.661	0.707

Table 8: Firm-level evidence on religiosity and employee treatment

This table reports the relation between establishment employee weighted religiosity and employee treatment at the firm level. Panel A provides results on the employee weighted religiosity and employee-related misconduct. Employee-related misconduct includes labor laws violations and penalties. Violation is measured as the total number of employee-related violations per year, and penalty is measured as the natural logarithm of the total penalty amount due to labor laws violations per year. Panel B provides results on the effect of employee weighted religiosity on the health and safety index and workforce reduction. These are indicator variables obtained from the KLD database. The key independent variable is *EmpWtRel*, establishment-level employee-weighted religiosity. All other independent variables are defined in Appendix A. These firm-level analyses include three digits SIC coded industry fixed-effects. *T*-statistics are computed using standard errors corrected for clustering at the establishment-county level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Employee weighted religiosity and employee-related misconduct

Variable	(1) Violation	(2) Ln(penalty)
EmpWtRel	-0.984**	-2.052**
	(-2.35)	(-2.37)
Leverage	-0.139	-0.407
	(-0.51)	(-1.02)
Cashflow	0.398	-0.432
	(0.96)	(-0.39)
Dividends	-1.048	-5.481
	(-0.60)	(-1.35)
Ln(Assets)	-0.180	0.488**
	(-1.55)	(2.24)
Turnover	0.065	0.070
	(0.65)	(0.46)
Tangibility	-0.057	1.172*
	(-0.11)	(1.74)
Capex	-1.751	-5.919***
	(-1.14)	(-2.71)
MB	0.041	0.045
	(0.41)	(0.33)
Ln(Emp)	0.516***	0.229
	(3.53)	(0.98)
LabIntensity	-0.018	0.049
	(-0.78)	(1.19)
Constant	1.112	7.398***
	(1.34)	(4.76)
Year FE	Yes	Yes
Industry FE	Yes	Yes

N	1,942	1,942
Adj. R2	0.396	0.435

Panel B: Employee weighted religiosity and safety index and workforce reduction

	(1)	(2)
Variable	*Health and Safety Strength*	*WorkforceReduction*
EmpWtRel	0.099**	-0.199***
	(1.97)	(-3.46)
ROA	0.057	-0.286***
	(1.61)	(-4.99)
R&D	0.189**	-0.070
	(2.14)	(-0.82)
Adv	0.129	0.088
	(0.66)	(0.54)
Ln(Emp)	0.030**	-0.031***
	(2.08)	(-2.75)
SalesGrowth	-0.004	-0.008**
	(-0.93)	(-2.07)
Debt/Equity	-0.030***	-0.001
	(-2.77)	(-0.05)
Ln(Assets)	-0.193***	0.078**
	(-4.90)	(2.49)
Ln(Assets)^2	0.016***	-0.002
	(6.69)	(-1.24)
Turnover	0.000	-0.001
	(0.02)	(-0.11)
RetVol	0.926*	2.061***
	(1.88)	(3.14)
Capex	-0.410***	-0.329**
	(-2.85)	(-2.39)
MB	0.012	0.008
	(1.26)	(1.04)
Tangibility	0.122*	-0.105**
	(1.79)	(-2.28)
Constant	0.484***	-0.176
	(2.83)	(-1.33)
Year FE	Yes	Yes
Industry FE	Yes	Yes
N	4,488	4,252
Adj. R2	0.321	0.157

Table 9: SGMM results: Workplace injuries and firm performance

This table presents the results from the System GMM analysis for the effect of workplace injuries has on firm performance at the firm level, where the key independent variable is the natural logarithm of the total number of cases of employees' death, and injuries and illnesses that result in days away from work or with job restriction or transfers, and other recordable cases at the firm in a given year. The dependent variable in Column (1) is *MB* measured as the market value of equities divided by the book value of equities. The dependent variable in Column (2) is *Tobin's Q*. All other independent variables are defined in Appendix A. *T*-statistics are computed using standard errors corrected for clustering at the firm level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Variable	*MB*	*Tobin's Q*
Ln (Num Cases)	-0.026***	-0.164***
	(-3.65)	(-2.77)
Leverage	-0.103	-0.049
	(-1.16)	(-0.31)
Cashflow	1.470***	0.464*
	(9.00)	(1.74)
Ln(Assets)	-0.025**	0.054*
	(-2.46)	(1.93)
Sale_grwth	0.039***	0.180***
	(8.14)	(11.98)
Dividends	7.808***	8.729***
	(7.71)	(6.98)
Tangibility	-0.935***	-0.820***
	(-10.60)	(-4.76)
Capex	3.477***	3.176***
	(9.08)	(6.22)
Turnover	-0.120***	0.040
	(-5.69)	(0.80)
Ln (Firm_age)	-0.097***	-0.061**
	(-4.85)	(-2.04)
Constant	1.801***	1.850***
	(20.68)	(14.70)
Year FE	Yes	Yes
N	7,148	7,148
No of Instruments	37	37
AB(1)	-8.12	-3.83
p-value	0.000	0.000
AB(2)	-1.36	-0.10
p-value	0.174	0.923
Hansen	6.06	10.12
p-value	0.417	0.122

Appendix A: Variable definition

Variables	Definitions
Number of cases	Sum of deaths and all injuries and illnesses that result in days away from work or with job restriction or transfers, and other recordable cases at the establishment in a given year (Column G + Column H + Column I + Column J of OSHA Form 300).
Total case rate (TCR)	The total number of cases in a given establishment year divided by the number of hours worked by all employees at the establishment in a given year and then multiplied by 200,000.
DART	The number of injuries and illnesses that result in days away from work or with job restriction or transfer, divided by the number of hours worked by all employees in a given establishment-year, and then multiplied by 200,000.
Daysawork	Number of days away from work (column K).
EstbEmp	The average number of employees working in a given establishment during the year
Ln(HoursEmp)	The natural logarithm of the total number of annual hours worked in a given establishment dividend the number of employees
Religiosity	The number of religious adherents in a county divided by the county population in a year. Religiosity in the non-census year is determined by linear interpolation. Protestant, Catholic, and Orthodox are particular religious followers.
MedAge	The median age of the establishment county population. Age in non-census year determined by linear interpolation.
Educ	The fraction of the age 25+ establishment county population with at least one year of high school education. Education in non-census year determined by linear interpolation.
Pop	The total population in an establishment county.
Married	The fraction of county people who are currently married. Married in non-census year determined by linear interpolation.
Chinese_Pop	A fraction of the county population consists of merely Chinese people.
Mexican_Pop	A fraction of the county population consists of merely Mexican people.
Pol_Orient	The ratio of votes for the Republic presidential candidate in a county to the sum of votes for both Republican and Democrat candidates.
Leverage	The sum of short-term and long-term debt scaled by the total asset. Compustat items: (dlc+ltt)/at
Cashflow	The sum of income before extraordinary items and depreciation and amortization scaled by the lagged asset. Compustat items: (ib+dp)/lagged at
Dividends	Common dividend scaled by the asset. Compustat items: dvc/at
Ln (Assets)	The natural logarithm of total assets. Compustat items: Ln(at)
Turnover	Total sales scaled by the total asset. Compustat items: sale/ lagged at
Tangibility	Net property, plant, and equipment scaled by the total asset. Compustat items: ppent/at
Capex	Capital expenditure scaled by lagged assets. Compustat items: Capx/lagged at

MB	The market value of equities divided by the book value of equities.
Tobin's Q	Tobin's Q is measured using Compustat variables:(AT + ME - BE) / AT
Sales growth	Changes in sales scaled by lagged sales
Social capital	Social capital is the first principal component based on a principal component analysis (PCA) using Pvote, Respn, Ncss, and Assn from NRCRD data.

Appendix B: The first stage model regressing religiosity on county characteristics

The table presents the results of estimates from an OLS regression to obtain a residual *Religiosity*. Definitions of variables are available in Appendix A.

Variable	*Religiosity*
Ln (MedAge)	-0.205***
	(-17.52)
Ln (Income)	0.014**
	(2.22)
Educ	-0.006***
	(-32.58)
Ln (Pop)	0.015***
	(15.18)
Married	0.192***
	(3.13)
Pol_Orient	0.230***
	(25.85)
Social Cap	0.074***
	(75.77)
Chinese_pop	0.157***
	(16.54)
Mexican_pop	-0.295*
	(-1.92)
Lottery	-0.012***
	(-31.01)
Constant	1.354***
	(19.00)
Year FE	Yes
N	26,290
Adj. R2	0.258

Appendix C: Additional robustness

This table presents the results from additional robustness check analyses. The key dependent variable is the natural logarithm of the total number of cases that caused employees' death, and injuries and illnesses that result in days away from work or with job restrictions or transfers, and other recordable cases at the establishment in a given year. In Panel A, we replicate our baseline analysis restricted to firms with multiple establishments only. The results reported in Columns (1) and (2) are from a restricted sample of firms having at least 3 establishments (which is equal to the median number of establishments). The results reported in Columns (3) and (4) are from a restricted sample of firms having at least 7 establishments (which is equal to the third quartile number of establishments). The results on alternative definitions of work-related injury and illness are reported in Panel B. Panel C reports results with respect to different fixed effects and clustering. Panel D represents the results from our baseline model after excluding the top five most and/or least religious states: MS, UT, AL, LA, and AR. Panels E, F, and G provide results on controlling only decennial survey years by ARDA for religiosity, family firm, and short-interest (as in Bai et al. (2020). ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Restricted to multiple establishments

	Ln (Num of cases)			
Variable	(1)	(2)	(3)	(4)
Religiosity	-0.133**	-0.157***	-0.140**	-0.154***
	(-2.49)	(-3.06)	(-2.57)	(-3.01)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	No	Yes	No
Estab. FE	No	Yes	No	Yes
N	67,536	67,536	60,498	60,498
Adj R2	0.657	0.705	0.655	0.702

Panel B: Alternative definition of injury

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variable	*Injury only*		*Ln (Daysawork)*		*TCR*		*DART*	
Religiosity	-0.124**	-0.144***	-0.808***	-0.800***	-0.769*	-0.776*	-0.944***	-0.770**
	(-2.39)	(-2.86)	(-4.89)	(-4.88)	(-1.77)	(-1.90)	(-2.86)	(-2.43)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-4.513***	-4.547***	-4.225***	-3.993***	42.404***	42.269***	19.602***	19.434***
	(-10.65)	(-10.79)	(-3.36)	(-3.10)	(11.82)	(12.30)	(6.76)	(7.44)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	No	Yes	No	Yes	No	Yes	No
Estab. FE	No	Yes	No	Yes	No	Yes	No	Yes
N	72,287	72,287	72,287	72,287	72,287	72,287	72,287	72,287
Adj. R2	0.657	0.706	0.423	0.478	0.354	0.440	0.341	0.421

Panel C: Different fixed effects

	Ln (Num of cases)					
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Religiosity	-0.134**	-0.155***	-0.123**	-0.147***	-0.130**	-0.151**
	(-2.44)	(-2.90)	(-2.35)	(-2.88)	(-2.34)	(-2.58)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	Yes	Yes
State*Year FE	Yes	Yes	No	No	No	No
Industry*Year FE	No	No	Yes	Yes	No	No
Firm FE	Yes	No	Yes	No	Yes	No
Establishment FE	No	Yes	No	Yes	No	Yes
Firm clustering	No	No	No	No	Yes	Yes
N	72,287	72,287	72,287	72,287	72,287	72,287
Adj. R2	0.662	0.710	0.670	0.716	0.664	0.711

Panel D: Drop the most/least 5 religious states

	Ln (Num of cases)					
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Religiosity	-0.117**	-0.137***	-0.119**	-0.142***	-0.105*	-0.127**
	(-2.15)	(-2.61)	(-2.22)	(-2.77)	(-1.91)	(-2.43)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	No	Yes	No	Yes	No
Establishment FE	No	Yes	No	Yes	No	Yes
Exclude Rel States	Top 5 Most		Top 5 Least		Both	
N	68,663	68,663	69,630	69,630	66,006	66,006
Adj. R2	0.654	0.703	0.667	0.713	0.657	0.704

Panel E: Restricted to ARDA survey year (2010 and 2002 for 2000 survey year)

	(1)	(2)
Variable	*Ln(Num of Cases)*	
Religiosity	-0.379***	-0.163*
	(-3.81)	(-1.89)
Controls	Yes	Yes
Year 2010=1		-0.567***
		(-23.81)
Constant	1.096*	-4.408***
	(1.73)	(-7.04)
Year FE	Yes	Yes
Firm FE	Yes	No
Estab. FE	No	Yes
N	14,688	14,688
Adj. R2	0.521	0.547

Panel F: Controlling family firm

	(1)	(2)
Variable	*Ln(Num of Cases)*	
Religiosity	-0.169**	-0.160**
	(-2.12)	(-2.21)
Controls	Yes	Yes
Family Firm	0.000[26]	0.174
		(1.46)
Constant	-6.641***	-7.040***
	(-8.07)	(-9.72)
Year FE	Yes	Yes
Firm FE	Yes	No
Estab. FE	No	Yes
N	17552	17552
Adj. R2	0.644	0.696

[26] Family firm coefficient drops because it correlates with firm fixed effects.

Panel G: Controlling short interest

	(1)	(2)
Variable	*Ln(Num of Cases)*	
Religiosity	-0.137***	-0.161***
	(-2.60)	(-3.17)
Controls	Yes	Yes
Ln(menshortint)	-0.005	-0.002
	(-1.06)	(-0.52)
Constant	-4.239***	-4.425***
	(-9.97)	(-10.65)
Year FE	Yes	Yes
Firm FE	Yes	No
Estab. FE	No	Yes
N	69,608	69,608
Adj. R2	0.665	0.713

Panel H: Only financial crisis period (2007-2009)

	(1)	(2)
Variable	*Ln(Num of Cases)*	
Religiosity	-0.125*	-0.203***
	(-1.92)	(-3.05)
Controls	Yes	Yes
Constant	-4.078***	-4.383***
	(-5.25)	(-7.30)
Year FE	Yes	Yes
Firm FE	Yes	No
Estab. FE	No	Yes
N	21,947	21,947
Adj. R2	0.662	0.713

Figure 1: Observations by year

This figure shows the number of observations over the sample year. Our sample period begins in 2002 and ends in 2010.

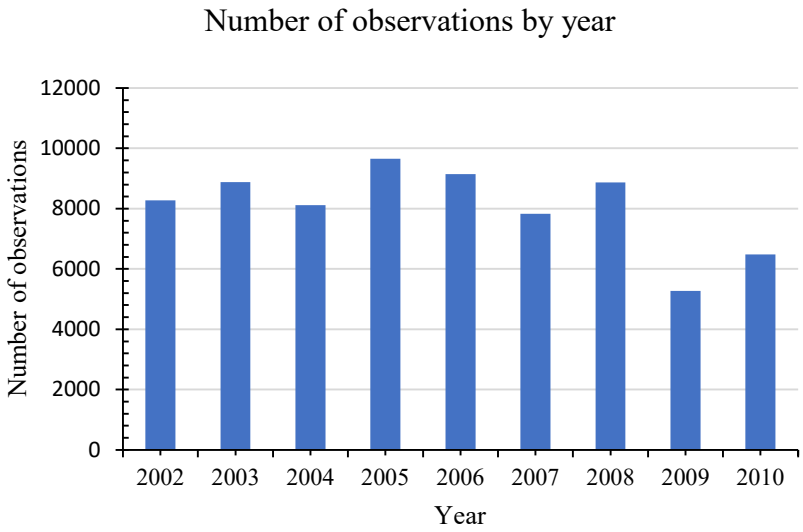

Figure 2: Injury by year

This figure shows the average number of cases and days away from work, TCR, or with job restriction or transfer (DART) over the sample year. Our sample period begins in 2002 and ends in 2010.

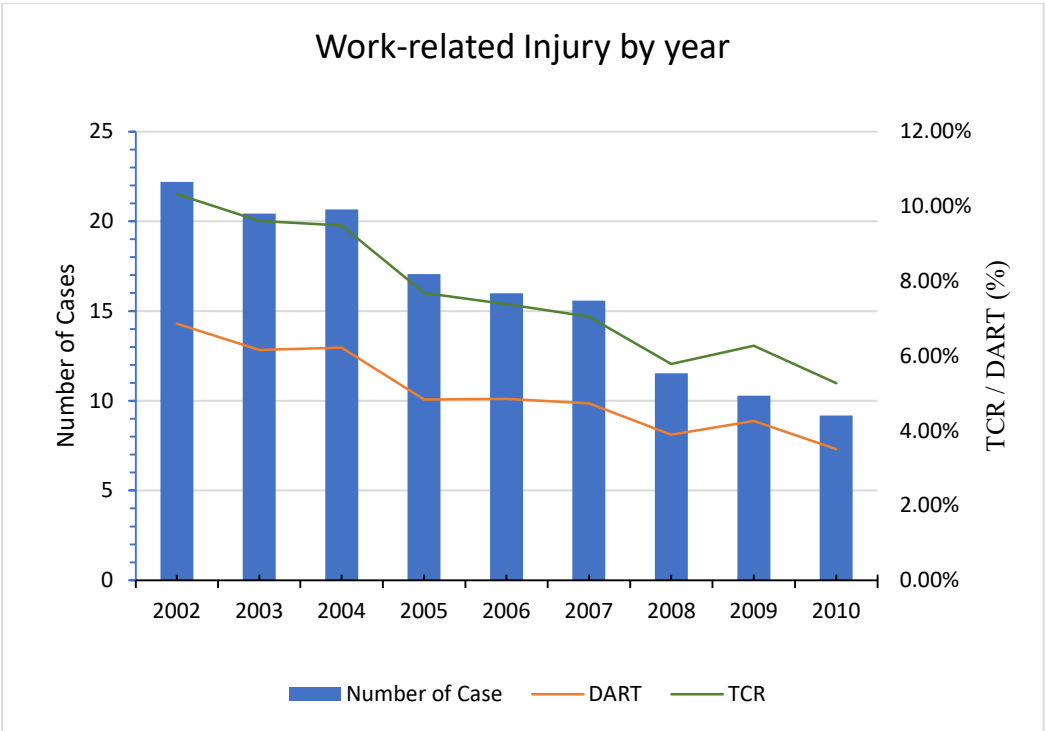

Figure 3: Injury after migration shock

This figure shows the average workplace injury and illness for both treatment and control firms during the pre- and post-migration shock years.