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Business Climate in the Eye of the Employer*

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Abstract: What constitutes a “good business climate” is often couched in monolithic and diametrically opposed terms of low taxes versus high public services. However, there is likely considerable heterogeneity across firms in their preferences for the trade-off between higher taxes and the public services they provide. Using a novel primary data set of firm expansion and relocation decisions, this analysis investigates how firms in relatively high-paying sectors express their preferences for a variety of local “business climate” attributes relative to firms in lower-paying sectors. The findings show evidence that firms in low-wage sectors view a “good business climate” differently than firms in high-wage sectors.

Keywords: business climate, firm preferences, business expansion and relocation, local tax policy

JEL Codes: H21, H25, H32

1. INTRODUCTION

Under the auspices of economic development, policy makers are charged with promoting local business expansion and attraction efforts. These efforts commonly involve attracting firms and promoting current business expansion through offering tax incentives and regulatory variances. Additionally, local economic development professionals may promote and market the region’s low tax burden or low regulatory environment. These incentives and marketing strategies are often couched in terms of an overall “business climate” of the region with a traditionally held notion that a “good business climate” is one that will readily offer tax incentives, regulatory variances, and an overall low tax and regulatory burden. Conversely,

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an alternative strategy is to forgo these types of incentives and instead focus marketing efforts on regional amenities, educational quality, infrastructure, and high-quality workforce to attract and assist business expansion. These two strategies - the more traditional cost reduction strategy: lower tax, lower regulation, and lower service versus a strategy that focuses more on labor attraction (higher service, higher amenity, higher tax) - are likely to be largely mutually exclusive and substitute strategies. Taxes are a cost to businesses that, *ceteris paribus*, have an unambiguously negative burden on production. However, while not perfectly correlated, higher taxes are largely necessary for funding infrastructure and high-quality schools as well as providing built amenities. Furthermore, while regulations create negative constraints on individual businesses, they also presumably limit negative externalities which would also harm some types of production and be detrimental to attractive natural amenities. Therefore, economic developers are faced with a tradeoff between the traditional business climate offering low taxes, low regulations, and incentives with relatively less funding for public services and more negative externalities; or an alternative business climate offering more services, infrastructure, and amenities but with a higher tax and regulatory burden.

It is spurious to assume that all business sectors have identical preferences for their ideal business climate. While there has been a long and varied literature on the effects of incentives and “business climate” on firm performance as well as business relocation and expansion decisions, little research has examined the heterogeneity of firm preferences with respect to traditional business climate factors and strategies. This research employs a unique primary data set on firm preferences to explore the relationship between traditional (low tax and regulatory burden) and alternative business climate factors (regional amenities, skilled workforce, and infrastructure) and a firm’s decisions to both relocate and expand operations. We examine the importance of different location attributes to firm relocation and expansion including attributes associated with access to markets/inputs, operation costs, quality of life, and tax funded services. We then divide the survey sample into business respondents who are in sectors that pay above average wages and sectors that pay below average wages to look for differences in “business climate” responses between more human capital-intensive sectors. We hypothesize that this heterogeneity in human capital needs will manifest in differing attitudes toward what constitutes a favorable “business climate.” Furthermore, we posit that a region’s choices regarding business climate strategies has the potential to create significant sector bias where policy makers may be unintentionally making their region more attractive to some specific sectors at the expense of alternative sectors.

2. BACKGROUND AND LITERATURE REVIEW

The ever-evolving topic of business relocation and expansion decisions have been widely discussed in the literature (Stallmann and Deller, 2011; Kolko et al., 2013). For example, a recent issue of the Review of Regional Studies (volume 48, issue 1; 2018) presented multiple papers which discussed the history of providing incentives and provided insights on their efficacy from empirical recent studies (Bryne, 2017; Bundrick and Snyder, 2018; Calcagno and Hefner, 2018; Mitchell et al., 2018). These studies, and indeed much of the previous literature, find that tax incentives are not major factors in business relocation or expansion

decisions (Steinnes, 1984; Barrow, 1998; Stallmann and Deller, 2011; Conroy et al., 2016). In studies where tax policies were found to be statistically significant, variables such as market access, climate/environment, and the cost of inputs were much more influential variables with regards to measuring economic growth (Plaut and Pluta, 1983). Patrick's (2014) empirical study of non-tax incentives found that fewer restrictions on non-tax incentives had a negative impact on medium run rural employment. Using a theoretical prisoner's dilemma framework, Ellis and Rogers (2000) found that when states compete or bid for a new firm to locate in their state, they bid away all the benefits to the new firm in order to avoid a negative signal about the business climate should the firm chose not to locate in the state. In other words, states will offer incentive packages equal to the benefit received by the firm locating in their state. Ellis and Rogers's (2000) model depends on states knowing the amount of the benefit received from a firm locating in their state. If benefits received from a firm locating in a state are misestimated, then it is possible that a state could over bid for a firm.

Taxes are a relatively small proportion of a firm's costs and are subject to change, therefore firms tend to look at the long run suitability of a location when making business relocation or expansion decisions (Warner, 1987). For example, Moretti (2014) found that firms still locate in areas that have relatively high real wages and land prices. These location decisions were made to take advantage of thick labor markets, abundant specialized service providers, and knowledge spillovers. Additionally, Ellison and Glaeser (1999) found positive effects on productivity associated with industry clusters and agglomeration.

Justifications for the use of low taxes and incentive packages to attract new businesses include the promise of job creation and economic stimulus from increased spending on investments (Hoyt et al., 2008; Patrick, 2014). However, critics of offering incentives maintain that sufficient benefit-cost analysis is rarely performed on these investments, that they rarely increase the overall welfare of local residents Buss (2001), and that incentives to specific firms or specific sectors amount to a futile attempt to "pick winners." Furthermore, it has been argued that providing tax breaks and incentives encourages firms who would not otherwise be profitable to choose the new site which only encourages unsustainable businesses (Patrick, 2014).

Creating a location that attracts businesses and skilled workers (human capital) is an alternative approach to marketing a region as a low tax and/or low regulatory environment. If a region lacks in human capital, it can fall into a low wage equilibrium trap (Dickens, 2000). The low wage equilibrium trap describes a labor force scenario with a high proportion of unskilled jobs and limited availability of highskilled jobs while the low marginal productivity of unskilled workers creates an incentive for firms to create relatively few new jobs. The low availability of jobs requiring skilled labor creates an incentive for workers to remain unskilled. If workers obtain skills, it is likely that they would not be able to get a job that paid wages to cover the cost of procuring skills (Booth and Snower, 1996; Redding, 1996; Burdett and Smith, 2002; Scicchitano, 2010; Goetz et al., 2011).

Worker investment in training, firm investment in research and development (R&D), and creation of jobs for skilled workers are all connected (Redding, 1996). When there are many jobs for high-skilled workers, available workers have an incentive to obtain skills. Similarly, when there are many workers that possess higher-level skills, firms have incentives to create more jobs and invest in R&D to take advantage of the skilled employees. A scenario of high

productivity occurs when investments in training and R&D occur; in this scenario workers receive higher wages and firms receive higher profits. There can be multiple equilibria where regions can find themselves (Booth and Snower, 1996; Redding, 1996; Scicchitano, 2010). For example, a region can successfully grow its employment and income base by focusing on being a low-cost provider of commodities. Under this scenario, a firm is likely to face narrow margins and, therefore, low taxes and the accompanying low amenities might be attractive. Conversely, a region can take a “new economic geography” approach where growth is facilitated through attracting an increasingly mobile high-skilled labor force and facilitating innovation. Policy makers must choose which course of action to pursue for economic development.

Booth and Snower (1996) recommend the creation of educational programs to train residents and provide incentives for firms to hire skilled employees in order to assist communities in escaping this low skill/low wage trap. Booth and Snower (1996) also suggest that, while investment in education will increase the number of skilled workers, it is also necessary for firms to be able to anticipate this increase in skilled workers so that expansion efforts can be coordinated; otherwise regional investment in education may create skilled workers that then move to regions where there are high skilled jobs. Creating more skilled jobs in an area would attract skilled workers to the area.

In addition to offering incentives for firms to create jobs for skilled labor, regions can invest in amenities that increase the quality of life for people living in the region. Quality of life within a region is becoming an increasingly important factor in business location choice in order to attract and retain skilled employees (Love and Crompton, 1999; Chen and Rosenthal, 2008). Potential investments to increase quality of life within a region include environmental quality, ambiance of an area, commuting time, and primary and secondary education.

3. DATA AND METHODS

For this analysis, we use survey data managed by the University Center for Economic Development (UCED) at the University of Nevada, Reno from a survey titled “Business Location Choice Survey.”¹ The survey data included in this study were collected between 2003 and 2014 and consists of responses from firms across a broad assortment of sectors and geographic distribution in the United States. The survey consists of questions focusing on location attributes as well as questions on past and potential relocation and expansion. While this is the first empirical analysis conducted using this data set, the data and associated framework have been central to applied Extension efforts specific to a community economic development project - Area Sector Analysis Process - in dozens of communities since 2011.

3.1. Survey Design

The “Business Location Choice Survey” (BLCS) was first implemented in 2003 and has been continuously expanded and updated with the most recent observations added in March 2017. The BLCS was originally developed as one of three primary data collection tools that

¹The full questionnaire is included in Appendix 1.

provide input for a larger community economic development model. The BLCS and the larger community economic development model represent collaborative efforts of researchers from Arizona, Hawaii, Idaho, Montana, Nevada, Utah, and Vermont (Buescher, 1998; Buss, 2001; Harris et al., 2012).

The framework of the larger model associated with the BLCS incorporates primary and secondary data related to asset structure and development priorities for both communities and industries. The primary objective of the model is to determine a ranking of industries for a specified community based on how well the community matches with each industry. As a primary data source to the model, the BLCS is designed to collect data about how operational requirements and priorities of different firms inform the decision to relocate or expand. BLCS question content and structure align with the other two primary data collection tools that contribute to the larger model. Firm-level BLCS data are compiled with national and community-level data to determine which sectors are the most well-matched to a specific community.

The BLCS is organized into four sections: (1) firm relocation and expansion history; (2) importance of asset types and quality of life measures in influencing firm relocation and expansion decisions; (3) characteristics of the firm's relationship to employees, communities, and other firms; and (4) firm requirements for types of labor and commercial space if relocation or expansion is likely in the next five years. Section one determines if the firm has relocated or expanded in the past five years, and if so, what factors were most influential as well as the distance from their original location to the location of the relocation or expansion.

Section two asks firms to rank the importance of specific assets to relocation or expansion decisions. Assets presented may be a type of infrastructure such as 'fiber optic lines' or 'natural gas pipeline.' Other assets consider location attributes such as 'access within 30 minutes to an interstate highway' or 'possibility for future expansion at the site.' Importance of labor and regulatory factors are also presented such as 'availability of skilled workforce' or 'favorable local business tax rates.' This section also asks firms to indicate how important quality of life factors are in making decisions about relocation or expansion - 'low crime rate' and 'social and cultural opportunities' are examples.

Section three asks firms to describe characteristics of the existing relationship with employees, the community, and associated firms. First, respondents are asked whether or not they provide employee benefits such as paid vacation or health insurance. The next set of questions asks what type of community issues or activities they have participated in previously, currently, or are planning to participate in in the future (e.g. 'youth athletic activities,' 'local education'). The last set of questions in this section asks about the location of the majority of suppliers, customers, and employees. In addition, firms are asked if collaboration with other firms in activities such as research or purchasing is important to them.

Section four presents a series of questions to better understand how likely the firm is to relocate or expand in the future, as well as the location and employment factors that would influence the decision to do so. Specific location factors are addressed such as distance from current location, commercial space type (e.g. manufacturing, retail) and quantity (e.g. square feet, acreage). Estimated prices the firm would be willing to pay to purchase, lease, and improve commercial space are also requested. Additionally, participants are asked to estimate the total number of employees required if relocating or expanding as well as type

of labor (e.g. managerial, skilled), number of local hires, and number of full-time employees.

Firms representing a broad range of North American Industry Classification System (NAICS) sectors and locations across the U.S. comprise the targeted survey population. Since 2003, five distinct sampling frameworks have defined which four-digit NAICS sectors would be targeted. Each framework contained at least two rounds of firm sampling from a third-party business data repository, primarily Dun & Bradstreet and ReferenceUSA.² A minimum of five completed surveys is the target for every four-digit NAICS sector identified within each sampling framework. The first sampling framework occurred from 2003-2008 and was defined as the 100 fastest growing four-digit NAICS sectors in the U.S. The second sampling framework took place from 2009-2010 and targeted 'green' industries as defined by the *Washington Green Economy Industry List*.³ The third targeted sampling framework was in place from 2011-2012 and continued with the second sampling framework list but added all four-digit NAICS agricultural sectors. In 2013, the fourth targeted sampling framework included only four-digit NAICS sectors representing alternative energy, healthcare, high-tech, communication, and manufacturing.

While the BLCS targets firms generally, language is included in the invitation and introduction to direct the survey instrument to an agent of the firm with the authority and capacity to provide information about relocation and expansion decisions. This design component is intended to address potential non-response bias and reporting bias issues identified as some of the unique challenges associated with establishment survey design (Barkley and McNamara, 1994; Willimack et al., 2002; DesRoches, 2011).

3.2. Survey Implementation

Since 2003, the BLCS implementation modes have included U.S. mail, internet, and phone. Currently all observations are obtained via phone survey using a modified Dillman (Dillman et al., 2009) method for phone surveys. Each targeted sample round is compiled at UCED, sourced from ReferenceUSA,⁴ and includes firm information such as six-digit NAICS code,⁵ location, and contact information. The sample is provided to a third-party survey research firm for implementation as the resources required to maintain a trained staff of surveyors is not feasible for any of the research institutions collaborating on the project. Moreover, phone surveying is used as the preferred mode to encourage participation of firm representatives by establishing a personal connection (Dillman et al., 2009). This design component is intended to mitigate non-response given the lack of social relationship between ASAP researchers and nationwide firms that might otherwise encourage survey participation, especially for small and mid-sized firms (Bartholomew and Smith, 2006). This survey design element is especially important given survey response rates have been in decline generally and

²In Fall 2010, a sample of 109 firms defined within the sampling framework were provided by a UCED associate

³<http://www.labormarketinfo.edd.ca.gov/contentpub/greendigest/wa-naics-industry-list.pdf>

⁴ReferenceUSA has served as the source for targeted sampling since Fall 2011. The dataset includes a broader range of firm sizes than Dun & Bradstreet while including a similar range of NAICS sectors and physical locations.

⁵Though NAICS sectors were targeted for sampling at the four-digit level, firm data was collected at the six-digit level to capture the most robust information available.

average organizational response rates have been historically lower than those of household respondents (Fulton, 2018).

Between 2003 and 2014, a total of 44,244 firms were sampled. Each participating firm provided a single observation resulting in the total 1,949 unique BLCS observations used in this study. The average response rate across all sample rounds is 8.92 percent.⁶ The 1,949 observations represent 473 distinct six-digit NAICS, 208 four-digit NAICS, and 19 two-digit NAICS. The median number of observations per four-digit NAICS is five and the mean is nine. Of the 1,949 observations, 31.3 percent comprise sectors with fewer observations than the targeted quota of five and 13.9 percent comprise sectors with more than nine observations (the sector with the largest number of observations totals 69).

Given the response rate, we considered the distribution of respondents across states and four-digit NAICS codes and did not find concern for significant systematic bias. The majority of the surveys were collected in 2006 and responses were received from 769 different counties across all 50 states. Counts of firms, employer establishments, and non-employer establishments sourced from the U.S. Bureau of the Census County Business Patterns (CBP) 2014 and the 2012 Economic Census: Survey of Business Owners were compared to the firm location by state and found the survey data to be representative by firm location. Comparison of the 2014 County Business Patterns with the BLCS data regarding distribution of firms across four-digit NAICS sectors as well as the average number of employees per NAICS sector shows some variation. Because the BLCS sampling framework considered only specific sectors within the U.S. economy rather than the economy as a whole, the variation is not surprising. In addition, from 2003-2011 the primary sampling source was Dun & Bradstreet which is more representative of mid-size and larger firms. The dataset used for this analysis is not recommended for generalization beyond two-digit NAICS sectors currently. It is expected that as observations are added to the BLCS data that the distribution will become more representative of the economy overall.

For the purposes of this study, the most important questions from the BLCS relate to a representative firm's decision to relocate or expand and the attributes of a community that the respective representative firm reported most important to their decisions to relocate or expand. Survey respondents were asked to indicate how important an attribute was to relocating, expanding existing operations, or establishing an additional location.

For dependent variables, we use responses to the survey questions: "Has your company established an additional location in the last 5 years?" and "Has your company relocated in the last 5 years?." Both questions provide binary responses making a logit model suitable for our analysis. We modeled relocation and expansion separately to test our hypothesis that different location attributes are preferable at different stages of business proceedings.

The number of independent variables is limited to survey questions that best represent firm preferences regarding access to inputs/markets, operation costs, quality of life, and services paid through taxes (survey questions used as independent variables are listed below). Respondent firms were asked to rank various community-level characteristics on a four-point

⁶Due to survey implementation shifting managing agencies, some statistics (e.g. bad address, refusals) contributing to a more accurate estimate of response rate are not available. As of April 2017, BRC, the current phone survey firm, is compiling statistics for sampling rounds under their oversight dating back to Winter 2011.

Table 1: Frequency of Firm Responses to Importance of Various Attributes in Their Relocation and Expansion Decisions

Question	Not at all important	Somewhat important	Important	Very Important	Total
Access within 30 minutes to rail freight	1635	150	81	73	1939
Access within 30 minutes passenger air service	914	392	320	316	1942
Access to Fiber Optic Lines	655	341	427	492	1915
Access to High Speed Internet	111	152	471	1213	1947
Availability of a Managerial Workforce	552	428	542	417	1939
Availability of a Skilled Workforce	331	346	628	636	1941
Favorable Local labor costs	285	325	648	680	1938
Favorable local business tax rates	167	275	675	824	1941
Quality of education system (K-12)	292	299	593	756	1940
Availability of quality health care	131	232	703	876	1942

Likert scale reflecting the importance of each attribute to their relocation or expansion decision, where “1” equals “not at all important” and “4” equals “very important.” Survey questions related to environmental regulations were only added to the business survey in 2009 and thus were omitted from the analysis.⁷ The following factors represent survey questions included as independent variables, and Table 1 reports the importance ratings in firms’ relocation and expansion decision for these independent variables:

- Access within 30 minutes to rail freight
- Access within 30 minutes passenger air service
- Access to fiber optic lines
- Access to high speed Internet
- Availability of a managerial workforce
- Availability of a skilled workforce
- Favorable local labor costs
- Favorable local business tax rates
- Quality of education system (K-12)
- Availability of quality health care

⁷Approximately half the firms were surveyed before the introduction of the environmental questions.

To explore differences in “business climate” preferences across the heterogeneous firms, we divided survey respondents into two groups based on the relative wage of the firm’s six-digit NAICS sector. One group includes all sectors with average wages below the national median and proxies the “traditional” business climate of low-tax, low amenities. The other group includes all sectors with average wages above the national median and proxies an “alternative” business climate with high tax, high amenities. Wage data specific to each firm was not included in the BLCS and is not available from secondary data sources so the average wage by four-digit NAICS reported by Census CBP was utilized.⁸ While this may introduce some measurement error, it has the benefit of controlling for possible endogeneity between specific wages paid and relocation or expansion decisions. A wage ratio was then calculated as the respondent firm’s average wage of their 6-digit NAICS sector relative to the average wage for all sectors in the US economy in 2012. We used the sample median wage ratio (1.46) as a dividing point for classifying respondent firms into higher-than-average or lower-than-average wage sectors.

4. MODEL

Following Van Dijk and Pellenbarg (2000), we hypothesize that firm relocation and expansion decisions are driven by three factors: internal (e.g. managerial structure of the firm, age, organization of the firm, firm goals, financial situation of the firm), external (e.g. market size, change in supplier and customer location or composition, government policies and business climate, economic conditions), and location attributes (e.g. possibility of expansion, distance to customers and suppliers, accessibility, local government policies with regards to land and land use).

Furthermore, our theoretical model is based on the three dominant approaches in the literature: neoclassical, institutional, and behavioral. While the neoclassical and institutional approaches are considered better suited for larger firms, the behavioral approach finds more applicability in explaining the location decision of smaller firms. The neoclassical approach assumes that firms are rational agents who have perfect information which they use in order to maximize profits. Important consideration is given to labor and transportation costs, market size, and other regional characteristics. The institutional approach emphasizes local policies and regulations and uses the firm’s negotiation power to explain its relocation decision. Finally, the behavioral approach focuses on the firm itself and on the internal factors in explaining the relocation decision. The degree of risk and uncertainty that the firm is willing to take, imperfect information, and suboptimal outcomes are used to explain the firms decision-making process. Table 2 below summarizes our choices regarding internal, external, and location factors.

Given the controversial findings of previous studies regarding the importance of tax incentives in firms’ relocation and expansion decisions, we hypothesize that firms with high human capital needs (high wage firms) rank tax incentives differently compared to firms with low human capital needs (low wage firms). Thus, at least in part, some of the previ-

⁸Although NAICS codes from respondents were available at the six-digit NAICS level, average wage data were only available at the four-digit NAICS level of aggregation.

Table 2: Variable Classification

Internal Factors	External Factors	Location Factors
Availability of managerial workforce	Favorable local labor costs	Access within 30 min. to rail freight
Availability of skilled workforce	Favorable local business tax rates	Access within 30 min. to passenger air services
	Quality of educational system (K-12)	Access to fiber optic lines
	Availability of quality health care	Access to high speed internet

ous literature findings can be reconciled by the different approach taken by firms in these two categories given the importance of the factors considered in relocation and expansion decisions.

We model how firm preferences regarding community attributes influence the probability that the firm expanded or relocated in the past five years. The underlying theoretical model implies that a firm will prefer attributes that contribute to the goals of that firm. These goals may include employee or proprietor quality of life factors or some notion of corporate social responsibility but are generally assumed to be driven primarily by profit maximization. We can then think of firm expansion or relocation as a simplified behavior model where firm i decides to expand or relocate based, in part, on the relative importance of various community attributes to the goals of the respective firm. For this analysis, we do not attempt to isolate communities that have or do not have these attributes, rather we look at firms in our survey population that did or did not expand (or relocate) and then consider how much importance they place on a given community attribute. We employ a standard logit model and report odds ratios. The empirical model is as follows:

$$\text{odds}(y_{ikt} = 1) = \exp(\mathbf{X}_{ikt}\boldsymbol{\beta} + s_k\boldsymbol{\delta} + n_t\boldsymbol{\gamma} + \mathbf{r}_i\boldsymbol{\theta} + \alpha) \quad (1)$$

Where y_{ikt} is equal to 1 if firm i in sector k expanded (or relocated in the case of model 2) in year t , and 0 if they did not. X_{ikt} is a matrix of explanatory variables including community preference variables found in Table 1; s_k is a two-digit NAICS sector fixed effect; n_t is a year fixed effect; r_j is a region fixed effect equal to 1 if the company was located in the Northeast, 2 for Midwest, 3 for South, and 4 for West;⁹ β , γ , θ , and δ are the respective regression coefficients; and α is the logistic intercept.

We do not want to impose the assumption that coefficients representing firm preferences will be the same for sectors with high human capital needs (i.e. higher wage sectors) as sectors with low human capital needs (i.e. lower wage sectors). Furthermore, statistical tests indicate

⁹The regions are based on the Census Bureaus classification as follows:

Northeast includes: PA, NY, NJ, CT, RI, MA, VT, NH, ME.

Midwest includes: ND, SD, NE, KS, MN, IA, MO, WI, IL, IN, MI, OH

South includes: OK, TX, AR, LA, KY, TN, MS, AL, FL, GA, SC, NC, WV, DC, VA, MD, DE

West includes: WA, OR, CA, ID, NV, MT, WY, UT, CO, AZ, NM, AK, HI

there is a significant difference between the two groups (higher wage and lower wage firms) when it comes to the relocation and expansion decisions.¹⁰ Therefore, to examine different preferences between firms categorized as higher-than-average wage sectors or lower-than-average wage sectors, we estimate six logit models; three models for each of the dependent variables (relocation and expansions) using selected independent variables discussed in the Data section: one logit model with all respondents, a logit model for higher-than-average wage sector respondents, and another for lower-than-average wage sector respondents.

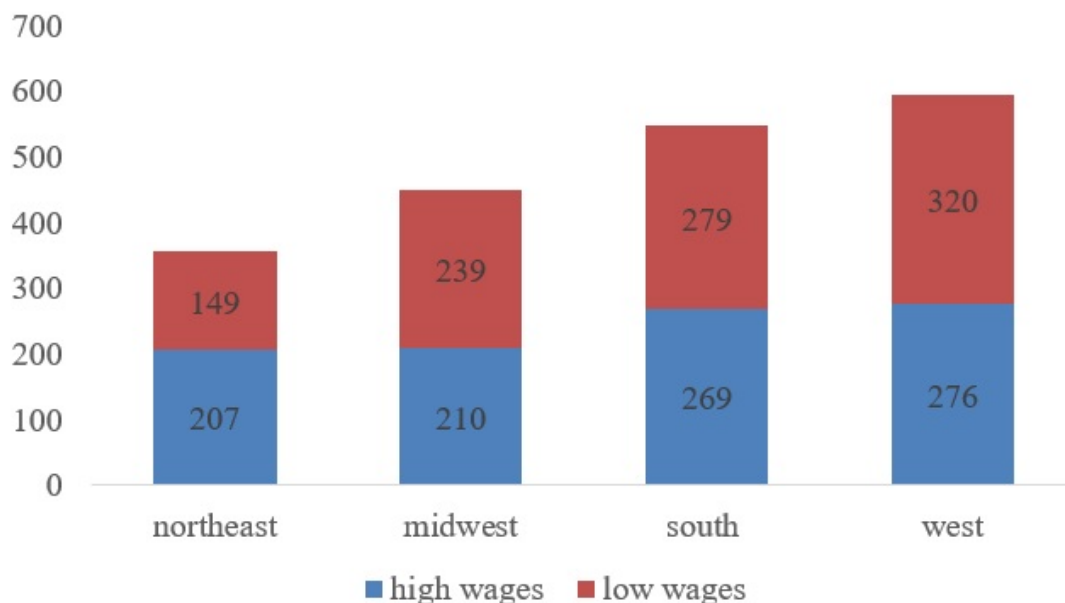
For both expansion and relocation models, we created dummy variables to control for the year the firm was surveyed, the firm's sector, and the region where the firm was located at the time the survey was implemented. Idiosyncratic non-wage differences across sectors were accounted for by using dummy variables for two-digit NAICS codes. We included dummy variables for the year that the firm was surveyed, to account for differences in economic climate between years. We excluded the first year (2003). For all sets of models, for firm relocation and expansion, the estimated odds ratios were statistically significant and less than one for most of the years. The estimated odds ratios for higher-than-average wage sectors in 2006 and lower-than-average wage sectors in 2010 were not statistically different from 2003. Finally, we included dummy variables for the geographic region where the firm was located at the time of the survey to account for region specific differences between firms. We chose to group firms by region instead of state because our data contains a large number of states with just a few observations. We presume that firms located in different regions of the country might have different propensities to expand and relocate due to a series of factors, both cultural and geographical. Figure 1 presents the geographical distribution of the firms and the frequency of high and low wage firms in each region. The number of respondents from the Western region is highest but the distribution of firms within each region, between lower wage firms and higher wage firms, is about the same.

5. RESULTS

Results for the firm expansion models are presented in Table 3 and results for the firm relocation are presented in Table 6. The results for the logit models when expansion was used as the dependent variable (Table 3) show location attribute preferences are different between higher-than-average and lower-than-average wage sectors. The most interesting findings arise from the difference in preferences between higher-than-average and lower-than-average wage sectors related to "Favorable local labor costs," "Favorable local business taxes," and "Quality of education system (K-12)." These factors influence the relocation and expansion decision differently for higher-than-average wage sectors as compared to lower-than-average wage sectors.

The estimated odds ratio for "Favorable local labor costs" is greater than one and statistically significant for higher-than-average wage sectors, and less than one and not statistically significant for lower-than-average wage sectors. This is an indication that firms in higher-than-average wage sectors, reporting favorable labor costs as an important part of location decisions, are more likely to expand. Conversely, firms in lower-than-average wage sectors

¹⁰Ttest and chi2 tests results are detailed in Appendix 2

Figure 1: High and Low Wage Firms by Region

reporting favorable labor costs as important are less likely to expand and do not consider favorable labor costs as an important factor in their expansion decision.

For “Favorable local business taxes,” higher-than-average wage sectors that rank this as important are less likely to expand than those who do not. In contrast, firms in lower-than-average wage sectors had an estimated odds ratio greater than one for the same coefficient, an indication of the importance of business taxes in the expansion decision of firms in this category.

The estimated odds ratio for “Quality of education system (K-12)” was greater than one and statistically significant only for the higher-than-average wage sectors. On the contrary, the estimated odds ratio was less than one and not statistically significant for the lower-than-average wage sectors, suggesting a higher importance given to this factor in the case of the first group.

Results in Table 3 indicate that infrastructure plays an important role in firm’s expansion decision and is represented by two independent variables in the model specification: “Access within 30 min. to rail freight” and “Access within 30 min. to passenger air service.” The odds ratio for the latter variable is greater than one and statistically significant in all three estimation procedures, indicating that firms that rank this factor as important are more likely to expand than those who do not. The coefficient associated with the proximity to rail freight is only statistically significant for the higher wage sectors, indicating a positive association between this type of infrastructure and a firm’s expansion decision for this group. A deeper investigation of the previous finding shows that it is driven by the manufacturing sector as shown in Tables 4 and 5.

The odds ratio for the rail freight variable is greater than 1 for both manufacturing wage groups, but only statistically significant when both lower wage and higher wage sectors are included in the analysis (Table 4). Furthermore, Table 5 shows that when manufacturing

Table 3: Firm Expansion Logit Results Clustered at the Region Level

Dependent Variable: Expansion	All Sectors	Lower Wage Sectors	Higher Wage Sectors
30 min rail freight	1.053 [0.983,1.129]	0.968 [0.828,1.131]	1.093* [0.997,1.198]
30 m. p. air serv.	1.346*** [1.231,1.471]	1.459*** [1.334,1.596]	1.297*** [1.096,1.535]
Fiber Optic Lines	1.182*** [1.105,1.265]	1.147 [0.885,1.487]	1.189*** [1.084,1.304]
High Speed Internet	1.193*** [1.054,1.350]	1.180** [1.016,1.371]	1.217*** [1.071,1.383]
Managerial Workforce	1.245*** [1.136,1.366]	1.254*** [1.142,1.377]	1.271*** [1.081,1.495]
Skilled Workforce	1.026 [0.908,1.160]	1.088 [0.916,1.292]	0.969 [0.900,1.042]
Local Labor Costs	1.096 [0.958,1.254]	0.988 [0.790,1.236]	1.204*** [1.130,1.283]
Local Bus Tax Rates	0.995 [0.830,1.192]	1.144*** [1.068,1.225]	0.895 [0.683,1.174]
Quality Ed (K-12)	1.000 [0.901,1.109]	0.876 [0.740,1.037]	1.117** [1.008,1.238]
Quality Health Care	0.856** [0.752,0.974]	0.888 [0.676,1.166]	0.825*** [0.750,0.907]
region=2	1.275*** [1.193,1.362]	1.013 [0.839,1.222]	1.543*** [1.482,1.608]
region=3	1.035 [0.985,1.088]	1.218*** [1.143,1.298]	0.884*** [0.824,0.947]
region=4	1.074 [0.986,1.170]	0.962 [0.818,1.132]	1.134*** [1.039,1.238]
Constant	1.535 [0.830,2.836]	1.441 [0.779,2.666]	1.364 [0.383,4.856]
Observations	1852	939	913
Pseudo R2	0.233	0.278	0.182
Log lik.	-973.9	-443.7	-517.3

Year fixed effects and two-digit NAICS fixed effects are suppressed. Exponentiated coefficients; 95 percent confidence intervals in brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

sectors are excluded from the analysis, the odds ratio associated with the freight variable is less than 1 for both the regression including all sectors regardless of wage group, and the one including only those that pay lower-than-average wages (although statistically significant only for the latter). Thus, we can conclude that proximity to rail freight positively affects the expansion decision of firms in the manufacturing sectors, and negatively affects the expansion

Table 4: Manufacturing Firms Expansion Decision

Dependent Variable: Expansion	Mfg. sectors	Lower Wage Mfg. Sectors	Higher Wage Mfg. Sectors
30 min rail freight	1.330** [1.029,1.720]	1.318 [0.906,1.917]	1.324 [0.789,2.224]
30 m. p. air serv.	1.509*** [1.190,1.912]	1.313 [0.889,1.940]	1.589*** [1.335,1.890]
Fiber Optic Lines	0.900 [0.767,1.056]	1.170 [0.637,2.149]	0.748* [0.541,1.035]
High Speed Internet	1.034 [0.911,1.175]	0.812 [0.513,1.285]	1.270 [0.826,1.953]
Managerial Workforce	1.404*** [1.176,1.676]	1.487** [1.050,2.105]	1.376*** [1.106,1.712]
Skilled Workforce	0.862 [0.652,1.140]	0.797 [0.577,1.102]	0.915 [0.682,1.229]
Local Labor Costs	1.207 [0.875,1.666]	1.369* [0.977,1.920]	1.192 [0.769,1.846]
Local Bus Tax Rates	1.097 [0.809,1.489]	1.291* [0.987,1.689]	1.054 [0.651,1.707]
Quality Ed (K-12)	1.013 [0.786,1.306]	1.044 [0.632,1.724]	1.005 [0.756,1.337]
Quality Health Care	0.917 [0.616,1.365]	0.802 [0.545,1.180]	1.003 [0.659,1.527]
region=2	1.398*** [1.339,1.460]	1.198 [0.859,1.670]	1.916*** [1.637,2.242]
region=3	0.842*** [0.748,0.947]	1.381** [1.032,1.847]	0.497*** [0.375,0.660]
region=4	1.114*** [1.069,1.162]	1.403*** [1.197,1.644]	0.897 [0.785,1.025]
Observations	552	287	262
Pseudo R ²	0.337	0.372	0.313

Standard errors clustered at the region level; year fixed effects are suppressed. Exponentiated coefficients; 95 percent confidence intervals in brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

decision of lower-than-average wage sectors, excluding manufacturing.

The economic infrastructure of an area is additionally defined by the availability of advanced technology such as fiber optic lines and high-speed internet. The econometric analysis provides evidence of a positive association between these two factors and a firm's expansion decision in all models (Table 3).

The availability of skilled and managerial workforce is included in the econometric model as part of the factors that make an area more attractive and can significantly improve

Table 5: Non-Manufacturing Firms Expansion Decision

Dependent Variable: Expansion	All Sectors Except Mfg.	Lower Wage Sectors Except Mfg.	Higher Wage Sectors Except Mfg.
30 min rail freight	0.967 [0.802,1.167]	0.818*** [0.730,0.916]	1.038 [0.834,1.292]
30 m. p. air serv.	1.294*** [1.233,1.357]	1.537*** [1.372,1.723]	1.223** [1.030,1.452]
Fiber Optic Lines	1.271*** [1.211,1.335]	1.142 [0.965,1.352]	1.381*** [1.311,1.454]
High Speed Internet	1.274*** [1.136,1.429]	1.473*** [1.133,1.914]	1.189*** [1.049,1.348]
Managerial Workforce	1.203*** [1.078,1.343]	1.228*** [1.137,1.326]	1.250*** [1.072,1.459]
Skilled Workforce	1.082 [0.978,1.198]	1.287*** [1.063,1.558]	0.968 [0.904,1.037]
Local Labor Costs	1.057 [0.850,1.316]	0.895 [0.659,1.214]	1.204*** [1.054,1.376]
Local Bus Tax Rates	0.98 [0.822,1.169]	1.120*** [1.051,1.194]	0.881 [0.661,1.174]
Quality Ed (K-12)	1.018 [0.892,1.162]	0.867 [0.665,1.130]	1.128 [0.977,1.303]
Quality Health Care	0.830*** [0.721,0.955]	0.869 [0.654,1.156]	0.779* [0.586,1.036]
region=2	1.188*** [1.071,1.317]	0.909 [0.734,1.126]	1.407*** [1.257,1.574]
region=3	1.079 [0.955,1.220]	1.247** [1.029,1.513]	0.950** [0.910,0.992]
region=4	1.043 [0.890,1.222]	0.872 [0.683,1.114]	1.166*** [1.070,1.271]
Observations	1284	636	648
Pseudo R ²	0.19	0.255	0.15

Standard errors clustered at the regional level, year and two-digit NAICS fixed effects are suppressed.
Exponentiated coefficients; 95 percent confidence intervals in brackets * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

its competitive advantage. The availability of a skilled workforce facilitates firm growth and expansion, and thus is an important factor in the firm's expansion decision. On one hand, results from all three models show a positive and significant relationship between the propensity to expand and the availability of managerial workforce. On the other hand, the regression coefficient corresponding to the availability of a skilled workforce is not statistically significant in any of the models and thus, we cannot infer any association between this variable and the firm's propensity to expand. Lastly, we include the importance of the quality of health care as an attribute of the quality of life of an area alongside the quality

Table 6: Firm Relocation Logit Results Clustered at the Region Level

Dependent Variable: Relocation	All Sectors	Lower Wage Sectors	Higher Wage Sectors
30 min rail freight	0.933** [0.871,0.999]	0.828*** [0.721,0.952]	0.991 [0.843,1.165]
30 m. p. air serv.	1.288*** [1.132,1.464]	1.375*** [1.153,1.641]	1.257*** [1.058,1.493]
Fiber Optic Lines	1.292*** [1.183,1.412]	1.233** [1.033,1.470]	1.314*** [1.120,1.543]
High Speed Internet	1.140* [0.998,1.302]	1.114 [0.903,1.374]	1.173* [0.999,1.376]
Managerial Workforce	1.14 [0.946,1.373]	1.113 [0.863,1.436]	1.171* [0.987,1.391]
Skilled Workforce	1.066 [0.889,1.277]	1.108 [0.896,1.369]	0.999 [0.809,1.233]
Local Labor Costs	1.087* [0.989,1.194]	0.938 [0.703,1.251]	1.289*** [1.119,1.485]
Local Bus Tax Rates	1.060 [0.964,1.165]	1.234* [0.984,1.548]	0.917 [0.749,1.123]
Quality Ed (K-12)	0.970 [0.880,1.071]	0.863 [0.719,1.035]	1.090 [0.939,1.266]
Quality Health Care	0.882*** [0.844,0.920]	0.987 [0.826,1.178]	0.803** [0.670,0.964]
region=2	1.267*** [1.203,1.334]	1.129 [0.733,1.741]	1.403* [0.981,2.008]
region=3	1.000 [0.940,1.064]	1.193 [0.907,1.570]	0.849 [0.593,1.216]
region=4	1.249*** [1.156,1.349]	1.323* [0.995,1.760]	1.207 [0.856,1.700]
Constant	4.293*** [1.967,9.368]	3.841*** [1.438,10.256]	4.268** [1.090,16.711]
Observations	1819	905	893
Pseudo R ²	0.21	0.236	0.18
Log likelihood	-989.7	-463.6	-506.6

Year fixed effects and two-digit NAICS fixed effects are suppressed. Exponentiated coefficients; 95 percent confidence intervals in brackets; * p<0.10, ** p<0.05, *** p<0.01

of education indicator that was discussed at the beginning of this section. As seen in Table 3, this variable is statistically significant only for the higher-than-average wage sectors, but the odds ratio is less than one, indicating that firms that rank the quality of healthcare as important are less likely to expand.

The results for the logit models, when relocation was used as the dependent variable

(Table 6), show location attribute preferences are also different between higher-than-average and lower-than-average wage sectors. The variables reflecting the most difference between the two wage categories (when using relocation as the dependent variable) were “Favorable local labor costs,” “Favorable local business tax rates,” and “Access to quality education (K-12).” Similar to the models for business expansion, we see lower-than-average wage sectors have estimated odds ratios less than one for variables related to local labor costs and access to quality education, and an odds ratio greater than one for local business tax rates. Of these three variables, local business tax rates were statistically significant for predicting firm relocation for lower-than-average wage sectors. Conversely, the estimated odds ratio for higher-than-average wage sectors was greater than one for local labor cost and access to quality education, and less than one for local business taxes. For higher-than-average wage sectors, of the three variables mentioned above, only the importance of favorable local labor costs was statistically significant for predicting firm relocation. Thus, results concerning relocation align with those regarding expansion decisions, emphasizing two important findings: the importance of tax incentives in the decision-making process of lower-than-average wage sectors and the relevance of local labor costs when it comes to both expansion and relocation decisions of firms in the higher-than-average wage sectors.

The independent variables related to the importance of infrastructure in relocation decisions are mostly consistent with those in the expansion models and indicate a positive and significant relationship between proximity to passenger air services and a firm’s propensity to relocate. When it comes to proximity to rail freight, results from Table 6 point towards a negative and significant relationship between this variable and the propensity to relocate, when considering lower-than-average wage sectors. A possible explanation is that those sectors that value proximity to rail freight more are already located near such infrastructure and thus less likely to relocate. Although the direction of the relationship is the same as the one shown in the expansion models, when it comes to the availability of fiber optic lines, the regression coefficients become statistically significant in all three relocation models. Thus, the availability of fiber optic lines is an important factor in the firm’s relocation decision. Consistent with results of the expansion models, availability of high-speed internet increases a firm’s propensity to relocate but only has a significant effect on higher-than-average wage sectors. Just as in the previous models, the availability of managerial workforce positively affects the propensity to relocate for higher wage sectors but does not have a statistically significant effect on lower wage sectors.

To check the validity of the results discussed above, Tables 7 and 8 sequentially add controls, starting with the simplest model that only includes the three main variables of interest: local labor costs, local business tax rates, and quality of education. In Table 7, variables are sequentially added to the expansion model, while Table 8 does the same for the relocation model. Separate regressions are run for higher-than-average and lower-than-average wage sectors and results are consistent with those presented in Tables 3 and 4, respectively.

Table 7: Firm Expansion Logit Results Expanded

Dependent Variable: Expansion	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors
Local Labor Costs	1.118 [0.965,1.296]	1.302*** [1.117,1.518]	1.137 [0.970,1.332]	1.256*** [1.065,1.481]	0.970 [0.816,1.152]	1.187* [0.995,1.415]	0.988 [0.790,1.236]	1.204*** [1.130,1.283]								
Local Bus Tax Rates	1.001 [0.862,1.162]	0.887 [0.761,1.034]	0.941 [0.802,1.104]	0.879 [0.748,1.034]	0.940 [0.797,1.107]	0.864* [0.732,1.021]	1.144*** [1.068,1.225]	0.895 [0.683,1.174]								
Quality Ed (K-12)	1.163** [1.016,1.331]	1.256*** [1.094,1.443]	0.991 [0.855,1.148]	1.100 [0.948,1.277]	0.902 [0.760,1.070]	1.137 [0.960,1.348]	0.876 [0.740,1.037]	1.117** [1.008,1.238]								
30 min rail freight			0.935 [0.799,1.093]	1.063 [0.933,1.212]	0.911 [0.778,1.068]	1.047 [0.917,1.195]	0.968 [0.828,1.131]	1.093* [0.997,1.198]								
30 m. p. air serv.			1.774*** [1.522,2.067]	1.450*** [1.250,1.682]	1.697*** [1.452,1.984]	1.396*** [1.198,1.626]	1.459*** [1.334,1.596]	1.297*** [1.096,1.535]								
Fiber Optic Lines			1.187** [1.016,1.387]	1.318*** [1.133,1.534]	1.122 [0.956,1.317]	1.273*** [1.090,1.488]	1.147 [0.885,1.487]	189*** [1.084,1.304]								
High Speed Internet			1.133 [0.963,1.333]	1.114 [0.954,1.301]	1.117 [0.947,1.318]	1.093 [0.932,1.280]	1.180** [1.016,1.371]	1.217*** [1.071,1.383]								
Managerial Workforce					1.458*** [1.228,1.731]	1.427*** [1.202,1.695]	1.254*** [1.142,1.377]	1.271*** [1.081,1.495]								
Skilled Workforce					1.147 [0.971,1.354]	0.919 [0.776,1.087]	1.088 [0.916,1.292]	0.969 [0.900,1.042]								
Quality Health Care					1.042 [0.877,1.238]	0.909 [0.769,1.075]	0.888 [0.676,1.166]	0.825*** [0.750,0.907]								
region=2							1.013 [0.839,1.222]	1.543*** [1.482,1.608]								
region=3							1.218*** [1.143,1.298]	0.884*** [0.824,0.947]								
region=4							0.962 [0.818,1.132]	1.134*** [1.039,1.238]								
Observations	977	943	957	921	953	915	939	913								
Pseudo R2	0.007	0.02	0.079	0.075	0.103	0.09	0.278	0.182								

Industry fixed effects and year fixed effects are omitted. Standard errors clustered by region; Exponentiated coefficients; 95 percent confidence intervals in brackets; * p<0.10, ** p<0.05, *** p<0.01

Table 8: Firm Relocation Logit Results Expanded

Dependent Variable: Relocation	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors	Lower Wage Sectors	Higher Wage Sectors
Local Labor Costs	1.039 [0.899,1.201]	1.336*** [1.146,1.559]	1.058 [0.905,1.236]	1.299*** [1.100,1.533]	0.917 [0.775,1.087]	1.242** [1.041,1.482]	0.938 [0.785,1.120]	1.289*** [1.130,1.470]								
Local Bus Tax Rates	1.061 [0.915,1.231]	0.901 [0.773,1.050]	1.032 [0.881,1.209]	0.891 [0.757,1.048]	1.025 [0.872,1.205]	0.879 [0.744,1.038]	1.234*** [1.140,1.336]	0.917 [0.725,1.160]								
Quality Ed (K-12)	1.144** [1.001,1.306]	1.228*** [1.069,1.410]	0.963 [0.833,1.114]	1.068 [0.920,1.240]	0.868* [0.733,1.027]	1.112 [0.938,1.318]	0.863* [0.733,1.015]	1.090 [0.923,1.288]								
30 min rail freight			0.788*** [0.669,0.928]	0.966 [0.849,1.098]	0.771*** [0.653,0.909]	0.951 [0.835,1.084]	0.828*** [0.739,0.929]	0.991 [0.883,1.113]								
30 m. p. air serv.			1.739*** [1.492,2.027]	1.449*** [1.249,1.682]	1.669*** [1.428,1.951]	1.401*** [1.202,1.632]	1.375*** [1.216,1.556]	1.257** [1.003,1.574]								
Fiber Optic Lines			1.295*** [1.110,1.511]	1.418*** [1.218,1.651]	1.237*** [1.056,1.448]	1.381*** [1.182,1.613]	1.233*** [1.091,1.393]	1.314*** [1.200,1.440]								
High Speed Internet			1.077 [0.920,1.262]	1.073 [0.919,1.254]	1.063 [0.905,1.248]	1.055 [0.900,1.237]	1.114 [0.939,1.322]	1.173*** [1.055,1.304]								
Managerial Workforce					1.347*** [1.138,1.595]	1.357*** [1.143,1.611]	1.113 [0.846,1.465]	1.171*** [1.051,1.306]								
Skilled Workforce					1.159* [0.984,1.365]	0.932 [0.788,1.104]	1.108 [0.789,1.554]	0.999 [0.927,1.076]								
Quality Health Care					1.094 [0.923,1.296]	0.898 [0.759,1.061]	0.987 [0.866,1.124]	0.803*** [0.690,0.935]								
region=2							1.129*** [1.079,1.182]	1.403*** [1.350,1.458]								
region=3							1.193** [1.034,1.377]	0.849*** [0.780,0.924]								
region=4							1.323*** [1.131,1.548]	1.207*** [1.064,1.368] _s								
Observations	977	943	957	921	953	915	905	893								
Pseudo R2	0.006	0.021	0.078	0.08	0.097	0.091	0.236	0.18								

Industry fixed effects and year fixed effects are omitted; standard errors clustered by region; exponentiated coefficients; 95 percent confidence intervals in brackets; * p<0.10, ** p<0.05, *** p<0.01

6. DISCUSSION AND CONCLUSION

Given that different businesses have very different human capital and infrastructure needs, it is not surprising that they would show differences in their business relocation and expansion preferences. For example, the extent to which an industry needs to attract skilled labor will likely affect the business tax rate they are willing to accept, given taxes fund education. These differences can vary not only by individual firms, but also between sectors (Bartelsman et al., 2010). Implying there is an optimal business climate for firms from different sectors and in different stages of the business life cycle is reductive when it comes to designing policies to attract new firms that will benefit the local economy.

Taxes are indeed a cost to a business and higher taxes would, *ceteris paribus*, be regarded as diminishing the attractiveness of a region for most businesses. However, taxes also pay for services such as education and infrastructure. These services and infrastructure are, *ceteris paribus*, enticing to businesses and provide amenities to help attract a high-quality labor force and, in the case of infrastructure, can reduce production costs (Goetz et al., 2011; Moretti, 2014).

Defining specific factors as necessary to a “good” business climate, such as low operating costs, over-simplifies the concept. These concepts may make sense from a theoretical stance (e.g. more taxes less utility). However, since tax levels and the amenities they fund are not held constant in the real world, we can observe instances where prioritizing low operation costs does not always encourage a sustainable business climate for firms or locals. When creating new policies to attract firms to and retain firms within a region, offering low tax and large non-tax incentives will not always be beneficial.

Like in much of the survey-based literature, the possibility of endogeneity exists in this study. We cannot be certain that businesses view a region’s business climate as exogenous and rather than simply expressing a preference for different business climate attributes, they may take a more active role in attempting to influence local policies in places where they are currently located or in places where they might relocate. While these issues cannot be fully addressed in this study, it does provide a topic for future research.

The goal of our research was to examine three points regarding business relocation and expansion. The first point was to examine the differences between location attribute preferences of firms who relocated and firms who expanded. The second point was to examine differences in location attribute preferences between respondent firms categorized as lower-than-average wage sectors and higher-than-average wage sectors. The third point focused on the difference in the likelihood of relocating and expanding between different industries.

Our results suggest that there are differences in tax and amenity preferences between higher-than-average wage sectors and lower-than-average wage sectors, however, not many differences in preferences were observed between firms who relocated and firms who expanded. Higher-than-average wage sectors show a preference for quality K-12 education and the availability of quality affordable labor. Moreover, the higher paying sectors did not show any preference for lower taxes. Lower paying sectors, however, showed a clear preference for low taxes and no preference for amenities such as quality K-12 schools.

The implications of these findings suggest that regions attempting to compete for new

businesses and promote business expansion through the use of low taxes (and the necessarily associated low amenities) are going to introduce a sector bias that favors lower-than-average paying sectors at the expense of higher-than-average paying sectors. This can create a “low wage, low skill” equilibrium trap where the existing businesses do not need or value investment in human capital or attractive amenities and therefore are not willing to pay the taxes to supply these attributes.

In summary, our contribution to the existing literature on firm relocation and expansion decisions is three-fold. First, we use a rich and unique data set sourced from a comprehensive business survey. Second, we divide firms into two categories, higher-than-average and lower-than-average wage sectors and shed some light on the ongoing debate in the existing literature concerning the importance of tax incentives in business location decisions. Specifically, we find that tax incentives matter and play a significant role in both firms’ relocation and expansion decisions but only for lower-than-average wage sectors, while the quality of education and local labor costs are important considerations for firms in the higher-than-average wage sectors. Third, the nature of our data set allows us to differentiate between firms’ relocation and expansion decisions and show there is little difference between the two.

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APPENDIX

Business Location Choice Survey



Survey conducted by:
Department of Economics
University of Nevada, Reno



Survey Information and Instructions

The Department of Resource Economics at the University of Nevada, Reno is conducting this study on business relocation and expansion decisions. The purpose of the survey is to investigate what factors companies consider when they relocate or establish businesses at new locations.

Your participation in this survey is voluntary, and your responses will be kept confidential.

Please complete and return this voluntary survey whether or not your company has relocated or expanded in the past or is planning to relocate or expand in the future.

Our goal is to treat your responses with the utmost confidentiality. Your name will not be linked to your responses in any way. Your company name is asked to provide us with a form of identification so you do not receive additional reminder letters once you have returned the survey.

Your responses to the survey are strictly confidential and will never be associated with your name or the name of your company. Study results will be presented only in aggregate for the entire industry or for sub-sets of the industry that contain three or more companies. Individual surveys will be processed by a single researcher at the University of Nevada, Reno. The completed surveys will be stored in a locked file cabinet and will be shredded upon completion of the study.

Please make sure that all of your responses are complete. You may, however, skip over any question that you feel uncomfortable answering. Also, you may write additional comments in the margin of the survey.

If information required to answer a question is not readily available, please provide the most accurate estimate possible.

The survey should take approximately 10-20 minutes to complete. Except for your time, there are no risks to participating in the study.

Questions related to this survey should be directed to:
Thomas Harris, Professor, (775) 784-1681

Please return the completed survey, in the enclosed pre-addressed envelope, to the address shown below. Returning the survey implies consent to participate.

Department of Resource Economics MS204 University of Nevada Reno 1664 N Virginia St.
Reno, NV 89503-9928

Thank you for your participation.

SECTION 1. RELOCATION/EXPANSION HISTORY

Please tell us about your company's past relocation/expansion history.

1. What is the primary industry or your company?

2. Has your company relocated in the last 5 years?

☐ Yes

☐ No (**Skip to Question 6**) →

3. What were the two most important reasons for your company's decision to relocate?

Most important:

2nd most important:

4. In the most recent move, you relocated...**Please choose only one response.**

☐ Within the same city/town

☐ Within the same county but in a different city/town

☐ Within the same state but in a different county

☐ To a different state

☐ Internationally

5. In your most recent move, roughly how many miles did the company move from the previous location? miles

6. Has your company established additional locations in the last 5 years?

☐ Yes

☐ No (**Skip to Question 10**)

7. What were the two most important reasons for your company's decision to establish additional locations?

Most important:

2nd most important:

8. In your most recent expansion, did you establish an additional location **Please choose only one response**
- ☐ Within the same city/town
 - ☐ Within the same county but in a different city/town
 - ☐ Within the same state but in a different county
 - ☐ To a different state
 - ☐ Internationally
9. In your most recent expansion, roughly how many miles was the additional location from the previous location? miles

In the next four sections we are not only interested in factors you have considered in previous relocations of your company, if any, but also, what factors your company would consider if the opportunity to relocate were to present itself in the future.

SECTION 2. PHYSICAL INFRASTRUCTURE

Please tell us about the importance of physical infrastructure in making

10. In the following table, please indicate how potentially important each factor would be to your company **if** the opportunity to relocate or establish an additional location presented itself.

	Not at all Important	Somewhat Important	Important	Very Important
Access within 30 minutes to an interstate highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access within 30 minutes to package freight services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Immediate access to railhead or rail spur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access within 30 minutes to rail freight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access within 30 minutes to passenger air services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access within 30 minutes to port or harbor facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access within 30 minutes to an international trade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to natural gas pipeline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access within one day, at a reasonable cost, to the supplies you need	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access within one day, at a reasonable cost, to your customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to 3-phase electric power	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to fiber optic lines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of high-volume water supply	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of high-volume wastewater disposal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of solid waste disposal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of cell phone service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of local public transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Possibility for future expansion at site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 3. ECONOMIC INFRASTRUCTURE

Please tell us about the importance of economic infrastructure in making company relocation/expansion decisions.

11. In the following table, please indicate how potentially important each factor would be to your company **if** the opportunity to relocate or establish an additional location presented itself.

	Not at all Important	Somewhat Important	Important	Very Important
Availability of a managerial workforce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of a skilled workforce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of a technical workforce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of an unskilled workforce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Favorable local labor costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Favorable workers compensation tax rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Favorable local business tax rates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Favorable state and local government incentives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of union labor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of specialized job training programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of short- and long-term financing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Existence of a business/trade association	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lenient environmental regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 4. QUALITY OF LIFE

Please tell us about the importance of “quality of life” in making company relocation/expansion decisions.

12. In the following table, please indicate how potentially important each factor would be to your company if the opportunity to relocate or establish an additional location presented itself.

	Not at all Important	Somewhat Important	Important	Very Important
Low crime rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of affordable housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean air and water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High quality natural ecosystem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor recreational opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social and cultural opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Retail shopping opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of educational system (K-12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access within 30 minutes to college or university	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of quality health care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of public safety services (e.g. police, fire station)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 5. INFORMATION SOURCES

Please tell us about the importance of potential information sources for making company relocation/expansion decisions.

13. In the following table, please indicate if your company is using or likely to use each of the following sources by checking one of the options below.

	Yes	No	Don't Know
Radio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Newspapers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trade publications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chamber of Commerce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Economic development agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Real estate agent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Word of mouth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Experience from previous travel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If Other, please specify:

SECTION 6. EMPLOYEE BENEFITS

14. Do you provide the following benefits to your non-managerial employees?

	Yes	No
Health Insurance	<input type="checkbox"/>	<input type="checkbox"/>
Paid Vacation	<input type="checkbox"/>	<input type="checkbox"/>
Job-related training programs	<input type="checkbox"/>	<input type="checkbox"/>
A retirement plan with employer contributions	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 7. COMPANY'S COMMUNITY ACTIVITIES

15. Please indicate whether your company has supported in the past, is currently supporting, or will support in the future the following activities: (**Please check all that apply.**)

	Past	Present	Future
Cultural programs (arts, music, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Youth athletic activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poverty alleviation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health and wellness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 8. BUSINESS RELATIONSHIPS

16. Please tell us about the importance of other businesses to your company.

	Not at all Important	Somewhat Important	Important	Very Important
Joint research and development activities with other firms in your sector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint research and development activities with other firms close by in your state	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated marketing efforts with other firms in your sector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated marketing efforts with other firms close by in your state	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Has your company ever coordinated the purchase of supplies or equipment with other firms in your sector?

- ☐ Yes
☐ No

18. Where are the majority of your suppliers located? **Please choose only one response.**

- ☐ Within the same city/town
- ☐ Within the same county but in a different city/town
- ☐ Within the same state but in a different county
- ☐ To a different US state
- ☐ Internationally
- ☐ Not applicable

19. Where are the majority of your **customers** located? **Please choose only one response.**

- ☐ Within the same city/town
- ☐ Within the same county but in a different city/town
- ☐ Within the same state but in a different county
- ☐ To a different US state
- ☐ Internationally
- ☐ Not applicable

20. Where are the majority of your **employees** located? **Please choose only one response.**

- ☐ Within the same city/town
- ☐ Within the same county but in a different city/town
- ☐ Within the same state but in a different county
- ☐ To a different US state
- ☐ Internationally
- ☐ Not applicable

SECTION 9: FUTURE RELOCATION/EXPANSION

Please tell us about your company's future plans for relocation and expansion.

21. How likely is it that your company will **relocate** in the next 5 years?

- ☐ Not at all likely
- ☐ Somewhat likely
- ☐ Likely
- ☐ Very likely
- ☐ Dont Know

22. If the opportunity to relocate presented itself in the next 5 years, where would you most likely **relocate**? **Please choose only one response.**

- ☐ Within the same city/town
- ☐ Within the same county but in a different city/town
- ☐ Within the same state but in a different county
- ☐ To a different U.S. state (*Please list state(s), please write out the full name of the state(s), do not use abbreviations*)

☐ Internationally (*Please list country/countries, please write out the full name of the country/ countries, do not use abbreviations*)

☐ Don't know

23. How likely is it that your company will establish an **additional location** in the next 5 years?

- ☐ Not at all likely
- ☐ Somewhat likely
- ☐ Likely
- ☐ Very likely
- ☐ Don't Know

24. If the opportunity to establish an additional location presented itself in the next 5 years, where would you most likely establish the **additional location**? **Please choose only one response.**

- ☐ Within the same city/town
- ☐ Within the same county but in a different city/town
- ☐ Within the same state but in a different county
- ☐ To a different U.S. state (*Please list state(s), please write out the full name of the state(s), do not use abbreviations*)

☐ Internationally (*Please list country/countries, please write out the full name of the country/countries, do not use abbreviations*)

☐ Don't Know

25. 25. If your company were to relocate or expand to an additional location in the next 5 years, what is your best estimate of the **total acres** of property you would need in the new location?

- ☐ Less than 1 acre
☐ 1-3 acres
☐ 4-5 acres
☐ Over 5 acres
☐ Dont Know

26. If your company were to relocate or expand to an additional location in the next 5 years, what is your best estimate of the **total amount of building space** in square feet you would need?

Note: Please include in this estimate exterior infrastructure areas such as parking, loading docks, and equipment storage.

- ☐ Less than 10,000 sq. ft.
☐ 10,001 25,000 sq. ft.
☐ 25,00150,000 sq. ft.
☐ 50,00175,000 sq. ft.
☐ 75,001100,000 sq. ft.
☐ Over 100,000 sq. ft.
☐ Dont Know

27. 27. Please specify what percentage of this building space would be used for each of the following. (Please enter your response in numerical format (e.g., 10 to represent 10% or 72 to represent 72%.) Please ensure that the sum of your responses equals 100.)

	Percentage of Building Space
Manufacturing	%
Warehouse Space	%
Office Space	%
Retail Space	%
External infrastructure like parking, loading docks, or equipment storage	%
TOTAL	100%

If Other, please specify the type and the proportion:

28. If your company were to relocate or expand to an additional location in the next 5 years, how many total employees would you expect to employ at the new or additional location?
29. Please specify what percentage of the total number of employees would be needed for each of the following: **(Please enter your response in numerical format (e.g. 10 to represent 10% or 72 to represent 72%.) Please ensure that the sum of your responses equals 100.)**

	Percentage of Employees
Managerial & professional	%
Technical	%
Skilled	%
Unskilled	%
TOTAL	100%

30. In your best estimate, what percentage of the total work force at this new or additional location would be full time workers? **Please enter your response in numerical format (e.g. 10 to represent 10% or 72 to represent 72%.)**
31. In your best estimate, what percentage of the total work force at this new or additional location would be hired locally? **Please enter your response in numerical format (e.g. 10 to represent 10% or 72 to represent 72%.)**
32. If your company were to relocate or expand to an additional location in the next 5 years, would you purchase or lease the property you would need?
- ☐ Purchase
- ☐ Lease **(skip to Question 38) →**
- ☐ Dont know **(skip to Question 39) →**
33. Would you purchase vacant land or would you purchase land with an existing structure?
- ☐ Vacant land
- ☐ Existing structure **(skip to Question 36) →**
- ☐ Dont know **(skip to Question 39) →**

34. Approximately, how much would you be willing to pay per acre for this land? **Please enter your response in U.S. dollars (e.g. \$340).**

\$

35. Approximately, how much would you be willing to pay per square foot for the development of this property? **Please enter your response in U.S. dollars (e.g. \$340).**

\$

(Skip to question 39) →

36. Approximately, how much would you be willing to pay for this location? **Please enter your response in U.S. dollars (e.g. \$340).**

\$

37. Approximately, how much would you be willing to pay per square foot for improvements of this property? **Please enter your response in U.S. dollars (e.g. \$340).**

\$

(Skip to question 39) →

38. Approximately, how much would you be willing to pay per square foot per month **Please enter your response in U.S. dollars (e.g. \$340).**

\$

39. In your best estimate, what would be the total annual sales or revenue at this location when things are fully operational?

- ☐ Less than 1 million dollars per year
- ☐ 1 million to 2 million dollars per year
- ☐ 2 million to 3 million dollars per year
- ☐ 3 million to 5 million dollars per year
- ☐ 5 million to 10 million dollars per year
- ☐ Over 10 million dollars per year
- ☐ Dont Know

Thank you very much for your help with our study. If you would like a copy of summary results when they are ready, please enter your email here:

If you have any comments or suggestions related to this survey, please write them in the space below.

Thank you for your participation!

Appendix 2. Differences Between Groups**Table 9:** Expansion Decision, Higher vs. Lower Wage Sectors

	Expand	Lower Wage	Higher Wage	Total
no	622	458	1,080	
yes	362	496	858	
Total	984	954	1,938	

Pearson χ^2 (1) = 45.3779; Pr=0.000

The two sample t-test (with equal variances) in Table 10 below shows that higher and lower wage firms have statistically different means in the context of the expansion decision.

Table 10: Two Sample t-test, Expansion Decision

Group	Obs	Mean	Std. Err.	Std. Dev	[95% Conf. Interval]	
Lower Wage (0)	984	0.3679	0.0154	0.4825	0.3377	0.3981
Higher Wage (1)	954	0.5199	0.0162	0.4999	0.4882	0.5517
Combined	1,938	0.4427	0.0113	0.4968	0.4206	0.4649
diff		-0.152	0.0223		-0.1958	-0.1083
Diff = mean(0)- mean(1)					t=	-6.8131
H0: diff=0					deg. of freed. =	1936
Ha: diff<0			Ha:diff=0			Ha:diff > 0
Pr(T<t)=0.0000			Pr(T > t) = 0.0000			Pr((T >t) = 1.0000

Table 11: Relocation Decision, Higher vs. Lower Wage Sectors

Relocation	Lower Wage	Higher Wage	Total
no	608	465	1,073
yes	376	489	865
Total	984	954	1,938

Pearson $\chi^2(1) = 33.3632$; $Pr=0.0000$

The two sample t-test (with equal variances) in Table 12 below shows that higher and lower wage firms have statistically different means in the context of the relocation decision.

Table 12: Two Sample t-test, Relocation Decision

Group	Obs	Mean	Std. Err.	Std. Dev	[95% conf. Interval]	
Lower Wage (0)	984	0.3821	0.0155	0.4862	0.3517	0.4125
Higher Wage (1)	954	0.5126	0.0162	0.5001	0.4808	0.5443
Combined	1,938	0.4463	0.0113	0.4972	0.4242	0.4685
diff		-0.1305	0.0224		-0.1744	-0.0865
Diff= mean(0)- mean(1)					t =	-5.8235
H0:diff=0					deg. of freed.=	1936
Ha: diff<0		Ha:diff=0			Ha:diff>0	
Pr(T<t)=0.0000		Pr(T > t) = 0.0000			Pr((T >t)=1.0000	