**Data 698 – Master Research Project Proposal**

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## *Proposed Title: Corporate Insurance Sales Prospecting through Employer Benefits Data*

## Project Background

As an employee of ADP (Automated Data Processing), a comprehensive global provider of cloud-based human capital management (HCM) solutions, my research is to develop a sales prospecting tool to provide my organization a sales advantage within this competitive industry. Fortune Business Insights says that the global human capital management (HCM) market size was USD 16.24 billion in 2019 and is projected to reach USD 32.68 billion by 2027. Like most HCM providers, their diverse products seek to unite human resources, payroll distribution, talent management, time and labor management, tax and benefits administration, business outsourcing services, work analytics and compliance expertise into a single software platform.

One of ADP’s HR outsourcing products is called TotalSource PEO. PEO’s (professional employer organizations) partner with companies to provide comprehensive HR outsourcing to help manage a company’s human resources, employee benefits, regulatory compliance and payroll outsourcing. TotalSource is the largest certified professional employer organization in the United States, and now co-employs more than half a million worksite employees. ADP TotalSource has continued to grow organically over the past 19 years. In fact, if ADP TotalSource were an independent employer, its more than 500,000 worksite employees would rank it second among private sector employers in the United States.

A PEO works through a co-employment arrangement, which means the PEO contractually shares certain employer responsibilities and risk with the company. The contract between a client and the Professional Employer Organization (PEO) establishes the co-employment relationship. The PEO assumes certain aspects of employer responsibilities. Your employees become co-employed by both you and the PEO, thereby giving you access to the PEO’s built-in HR, compliance, benefits, a workers' compensation insurance program, payroll and tax infrastructure.

Workers' compensation (workers’ comp) is a form of accident insurance paid by employers. No payroll deductions are taken out of employees' salaries for this insurance. If an employee is injured on the job or acquire a work-related illness, workers’ comp will pay for medical expenses and will also cover wage-loss compensation until that employee is able to return to work. Benefits are usually paid by a private insurance company or state-run workers’ comp fund. It also provides benefits to dependents if a person dies as a result of a job-related injury.

Per $100 in employee wages, Workers' Compensation costs in the United States ranged from $0.75 in Texas to $2.74 in Alaska. But those numbers are deceptively simple: they encompass all types of jobs, which means they don't reflect the variations within states that account for different risk levels. On average, Workers' Compensation costs in Florida averages $1.27 per $100 and is one of the highest Workers’ Compensation costs in the continental US. Workers’ compensation insurance is widely available, but some insurers write more policies than others. These insurers are also known as carriers and cover Workers’ Compensation for PEO organizations. The PEO’s using economies of scale leverage is able to secure better coverages at lower costs because of group buying. In the case of ADP, the group covered is 500,000 individuals versus an individual company with just 50 employees.

My research will use the basis of these articles to develop a sales prospecting tool through the use of Workers’ Compensation data.

1. NCCI: Role in Workers’ Compensation (see: https://www.ncci.com/Articles/Pages/AU\_NCCIFactSheet.pdf)
2. McKinsey & Company: Unlocking the power of data in sales (see: https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/unlocking-the-power-of-data-in-sales#)
3. Data Science Central: Using Neural Networks for sales prospecting (see: https://www.datasciencecentral.com/profiles/blogs/using-neural-networks-for-sales-prospecting)

## Research Question

## What is the most effective clustering method to use when addressing the problem of direct marketing to Corporate Insurance lines prospects?

## Data source

The data to be used will be taken form one or both of the following sources:

1. Florida Workers’ Compensation Database

This data set is a spreadsheet with 10730 rows and 47 columns. A specific business organization operating in the State of Florida is contained within each row. Column information includes Workers’ Compensation coverage information and industry.

1. miEdge (https://www.miedge.biz)

The most comprehensive employee benefits data available for purchase. Contains:

* 3M+ Insurance Centric Employer Profiles
* 1M+ Decision Maker Email Addresses

Depending on cost, this may serve as my alternative source.

Please refer to https://www.census.gov/naics/?58967?yearbck=2017 for the latest codes and associated business classification. NAICS classification plays a big role in PEO providers growth strategies. This is because PEO's are formulated to absorb deficiencies business organizations incur as a result of operating within their industries. For example, PEO provider, Southeast Leasing traditionally services blue-collar industries which perform non-technical service-based work such as General Construction services and Hospitality-based industries. This is because of Southeast Leasing’s capabilities around managing Workers’ Compensation risk through its carrier Lion Insurance. Lion Insurance is focused on higher injury risk industries and offers specific programs to offset those risks of its insurers. Another example, PEO provider, Insperity excels at servicing technical white-collar industries which perform technical work within Technology and Finance. Their offering assist in securing high medical coverages at lower costs, because in those industries, medical offerings are used as an incentive to attract and retain that talent pool. The PEO market at a higher extent comprises of PEO providers looking to provide niche offerings to specific NAICS industries as a means of business competitive advantage.

PEO tiers is an unknown PEO industry designation created to provide basic categorization of PEOs. The tiers fundamentally divide PEOs based on costs, with Tier 1 PEOs typically being higher consumer cost options. It is important to note that these designations do not just correlate with cost but also service levels and other factors to differentiate between tiers.

The National Association of Professional Employer Organizations (NAPEO) is The Voice of the PEO Industry. NAPEO's mission is to create and cultivate a legislative and regulatory climate at the federal level and in all 50 states that recognizes the key role PEOs play in supporting small and mid-size businesses and positions the PEO industry for continued growth. In 2018, NAPEO sent out a survey to all PEO users to ascertain how the factors of Health Benefits, Workers’ Compensation, Business strategy, Cost savings and Human Resource Support played in a business decision to utilize a PEO. The survey place a ranking from one to five with five being the highest level of importance the factor played in the business decision to join the PEO.

In this project I will use clustering analysis to determine what PEO user share similar characteristics. Cluster analysis, can be defined as an unsupervised machine learning technique that aims to find patterns while gathering data samples and group them into similar records using predefined distance measures like the Euclidean distance and such.

There are many ways to group clustering methods into categories. My focus

Interestingly enough the algorithm describes based on survey responses that clusters fall either into 4 or 3 clusters. Because of the industry designation which describes that PEOs fall into 1 of 3 Tiers, we will use 3 clusters for the purpose of this test.

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## Proposed Methodology and Concerns (High Level)

**Tasks Automation:** Sales reps spend an average of 64 percent of their time focused on non-selling tasks, according to a Salesforce blog. What type of automation can I develop to help take care of tedious, yet essential tasks?

**Improve Effectiveness:** To help sales representative be more effective in selling, by providing real-time guidance and identifying the best prospects. What sales tools can I create for teams to focus on qualified prospects, ultimately driving the company’s bottom line?

**Comments:** Web application and deployment capabilities of Python vs R.

**Result Analysis:** How will I measure the effectiveness of the tools I create?

## Reference

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