Life is Good

A Data-Driven Approach to Understanding Wage Inequities

Research Paper

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Abstract

The project aims to investigate and compare compensation structures in the hospitality industry, characterized by demanding roles with extended work hours and high-stress conditions, with another industry known for a more typical 9-5 work lifestyle. Focusing on the hospitality sector, the project seeks to acquire skills in data collection, analysis, and visualization to highlight structural disparities in labor hours, compensation, and other pertinent issues affecting workers.

The anticipated outcomes of this project include:

1. **Personal Data Literacy Enhancement:**
   Developing my proficiency in handling and interpreting datasets, fostering my data literacy skills.

2. **Data Visualization:**
   Creation of data visualizations to effectively communicate socio-economic concepts related to labor hours, compensation structures, and disparities within the hospitality industry.

By leveraging data collection, analysis, and visualization techniques, the project endeavors to shed light on the existing disparities within the hospitality sector compared to industries with more standard working hours. The intent is to raise awareness among policymakers, industry stakeholders, and the general public about the differences in compensation and working conditions, ultimately aiming for improved understanding and awareness of socio-economic issues prevalent in this particular sector.

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Introduction

Foreword

Everything started with me learning about the salaries of my colleagues. I'm a kitchen helper in an Italian restaurant, and my coworker, a cook, earns 9.4 euros per hour despite having worked there for 25 years, with her working hours reaching up to 60 hours per week. Another coworker, a pizza chef, earns 11.2 euros per hour after 30 years of service, working up to 67 hours per week. The hospitality industry is known for its minimum wage jobs, hectic working hours, and being primarily occupied by immigrants and minority populations. Despite these known facts in Western countries, the compensation structures remain unfair and disproportionate, especially when wages do not grow proportionately to the experience and value of the workers.

We face several wage issues that appear to be illegal, but we are grateful to have this job with decent pay compared to salaries in our home countries. This job provides us with security and confidence in our lives in Europe. However, the low job security means we can be easily replaced by other immigrants willing to work these "low-skilled" jobs. Despite this, we keep saying "life is good" because we have learned to appreciate small things, inspired by Drake's song where he portrays people working these types of demanding jobs.

Project Outline

Prompted by my entry into the Austrian labor market and a limited understanding of its intricacies, I decided to undertake a comparative analysis to discern distinctions within various sectors. Given that the annual theme centers around "Measuring Nature," I decided to engage with statistics to initiate a data visualization project. This project aims to delve into wage disparities across different industries and working hours, highlighting variations in compensation and working conditions.

The objectives of this study are threefold:

1. **Data Literacy**:
    - Enhance my proficiency in handling and interpreting datasets, fostering my data literacy skills.
2. **Data Visualization**:

     ○   Create data visualizations to effectively communicate socio-economic concepts related to labor hours, compensation structures, and disparities within the hospitality industry.

3. **Highlighting Socio-Economic Issues**:
     ○   By leveraging data collection, analysis, and visualization techniques, the project endeavors to shed light on the existing disparities within the hospitality sector compared to industries with more standard working hours. The intent is to raise awareness among policymakers, industry stakeholders, and the general public about the differences in compensation and working conditions, ultimately aiming for improved understanding and awareness of socio-economic issues prevalent in this particular sector.

This project aligns with the broader theme of measuring nature, involving data analysis and statistical exploration, foundational components of mathematics that serve as tools for comprehending and measuring patterns within societal structures. Human labor itself is a manifestation of a force of nature, specifically human labor power. The ability to work, a fundamental aspect of labor, is part of the broader natural order.

Research Question

- How do compensation structures and working hours in the hospitality industry compare to those in other sectors, and what socio-economic disparities can be highlighted through data visualization?

Hypothesis

- Compensation structures and working hours in the hospitality industry exhibit significant disparities when compared to other sectors, as evidenced by lower wages and more variable working conditions.

Literature Review

Integration and Wage Disparities

Research on immigrant integration and wage disparities in Austria highlights significant issues within the labor market. Huber et al. (2020) assessed available datasets concerning the

integration of immigrants, focusing on educational and labor market achievements. They evaluated various registers and routine survey data to capture relevant information about immigrants' educational and employment trajectories, identifying research gaps and potential data deficiencies. Their work provides valuable background information on the success of immigrants' integration in Austria, focusing on educational and labor market outcomes. It also informs methodological approaches and discusses the complexity of integration processes, identifying factors that support or hinder successful integration.

Hofer et al. (2017) examined wage disparities faced by immigrants in Austria using labor force surveys and administrative social security records. Their analysis revealed a wage disadvantage of 15 percentage points for immigrants compared to native workers, with greater discrimination observed at the higher end of the wage spectrum. They attributed a significant portion of this discrepancy to variations in human capital levels and occupational roles, such as education level and language proficiency. This study is relevant to my project as it underscores the wage differentials and discrimination faced by immigrants, providing a basis for comparative analysis in the hospitality industry.

Amo-Agyei (2020) in her report, "The Migrant Pay Gap," provided a comprehensive analysis of wage disparities between migrant and non-migrant workers across 49 countries. She found that, on average, migrant workers in high-income countries earn 12.6% less than non-migrant counterparts, while in low- and middle-income countries, migrants tend to earn about 17.3% more than nationals. This report contributes a global perspective to the understanding of wage disparities and highlights significant variations across countries and sectors. This is crucial for my project as it offers a broader context and reinforces the need to examine specific sectors like hospitality in Austria.

Labour Market Challenges

The challenges faced by immigrants in the labor market are multifaceted. Hofer et al. (2017) highlighted that educational attainment among migrants is influenced by a complex interplay of factors, including financial constraints, access to educational resources, and broader socio-economic conditions. These elements collectively shape an individual's likelihood of completing their education and their earning potential in the labor market.

The publication by AK Wien (2012), drawing on data from L&R (2010), revealed significant wage disparities experienced by individuals with migrant backgrounds in Austria, with around 60% of full-time employees among migrants earning less than EUR 1,400 net per month. The distribution of migrant workers across different sectors and job types also highlights their prevalence in low-skilled areas and the challenges they face in accessing higher-skilled positions. This informs compensation structures and career opportunities within the hospitality industry, directly relevant to my study.

Amo-Agyei (2020) also identified significant gaps that warrant further investigation, such as the unexplained portion of the migrant pay gap, pointing to potential discrimination and biases.

Additionally, the impact of the COVID-19 pandemic on wage disparities and the effectiveness of pay transparency and anti-discrimination policies are areas that require further study. These insights are important for understanding the broader context of wage disparities and labor market challenges faced by immigrants.

Relevance to My Study

The reviewed literature provides several insights and highlights gaps directly relevant to my project. Huber et al. (2020) and Hofer et al. (2017) provide a detailed understanding of the integration and wage disparities faced by immigrants in Austria, which is the foundation of my project. The AK Wien (2012) publication underscores the challenges faced by migrant workers in accessing higher-skilled positions and the prevalence of low wages, directly informing the compensation structures within the hospitality industry. Amo-Agyei's (2020) report extends this understanding to a global context, emphasizing the need for further research into potential discrimination and biases that contribute to wage disparities. This global perspective is essential for my project as it offers a comparative framework to understand the specificities of the Austrian hospitality industry.

The literature review provides a solid foundation for my data visualizations, aiming to shed light on the socio-economic issues prevalent in the hospitality industry and enhance understanding and awareness among stakeholders.

Methodology

Data Collection Methods

The primary sources of quantitative data for this project are:

1. European Labour Force Survey: Conducted in Austria within the framework of a micro census, this survey addresses approximately 1,500 households per week. It gathers standardized information from randomly selected private households, which is then projected to the relative population number.
2. Labour Cost Surveys: Held every fourth year, these surveys focus on local units of enterprises, consortia, public bodies, public sector enterprises, and societies with at least 10 employees. The most recent available survey in 2020 included 7,500 units.
3. Structure of Earnings Survey (SES) 2018: This survey includes employees in enterprises with at least 10 employees across various economic sectors, excluding public administration. The data is cross-tabulated by characteristics such as earnings, working time, economic activity, sex, and employment type.

4. Austrian Micro Census: Introduced in 1967 and continuously updated, this household sample survey provides data on employment and unemployment, based on both the main status and ILO concepts for international comparability.

Variables and Measures

Dependent Variables
- Average Labour Cost per Employee: This measures the total cost incurred by employers for their employees.
- Average Hours Paid per Employee: This tracks the number of hours for which employees are compensated.
- Wage per Hour (Median and Arithmetic Mean): These measures provide insights into the central tendency and distribution of hourly wages.
- Hours per Employee: The total number of hours worked by employees.
- Average Hours Actually Worked: This captures the actual hours employees work, as opposed to hours they are paid for.

Independent Variables
- Number of Employees in an Industry: This indicates the size of the workforce within different sectors.
- Sector of Employment: This categorizes the data by industry sectors.
- Citizenship: This differentiates between native and immigrant workers.
- Level of Education: This categorizes employees based on their educational attainment.
- Demographic Variables: Including gender, age, and other relevant demographics.
- Type of Employment: Distinguishing between full-time and part-time employment.

Control Variables
- Years of Experience in the Industry: This would ideally be considered but is currently limited by data availability.
- Unionization Rates within Sectors: Not available in the current dataset.
- Economic Indicators: Such as inflation rates or unemployment rates, which could influence wage dynamics but are not included due to data limitations.

Procedure

Data Manipulation and Analysis

- Access and Manipulation: The data from Statistik Austria were accessed through their online databases. Data cleaning and preparation involved removing duplicates, handling missing values, and ensuring consistency in variable coding.
- Statistical Analysis: Various statistical techniques were employed to analyze the data. Mainly descriptive statistics were used to summarize the main features of the data.

Correlation Analysis

- Identifying Correlations: Correlation analysis was conducted to examine the relationships between dependent and independent variables. This involved calculating how strongly and in which direction variables like employment sector, hourly wage, and hours worked are related.

Exploratory Data Analysis (EDA)

- Conducting EDA: Exploratory Data Analysis was performed to uncover initial patterns and insights within the data. Techniques included visualizing data distributions, identifying outliers, and summarizing key statistics. Tools such as histograms, box plots, and scatter plots were used to visualize data trends and relationships.

Data Visualization

- Tools and Techniques: Data visualizations were created using RawGraphs, a free tool known for its flexibility and user-friendly interface, and Figma, a software for interface design. Various types of charts and graphs, including bar charts, line graphs, and scatter plots, were employed to represent the data visually.

Limitations

- The study is limited by the availability and quality of data, particularly concerning control variables such as years of experience and unionization rates.
- The data may not fully capture the realities of underreported work hours and wages, especially in sectors with significant informal employment.
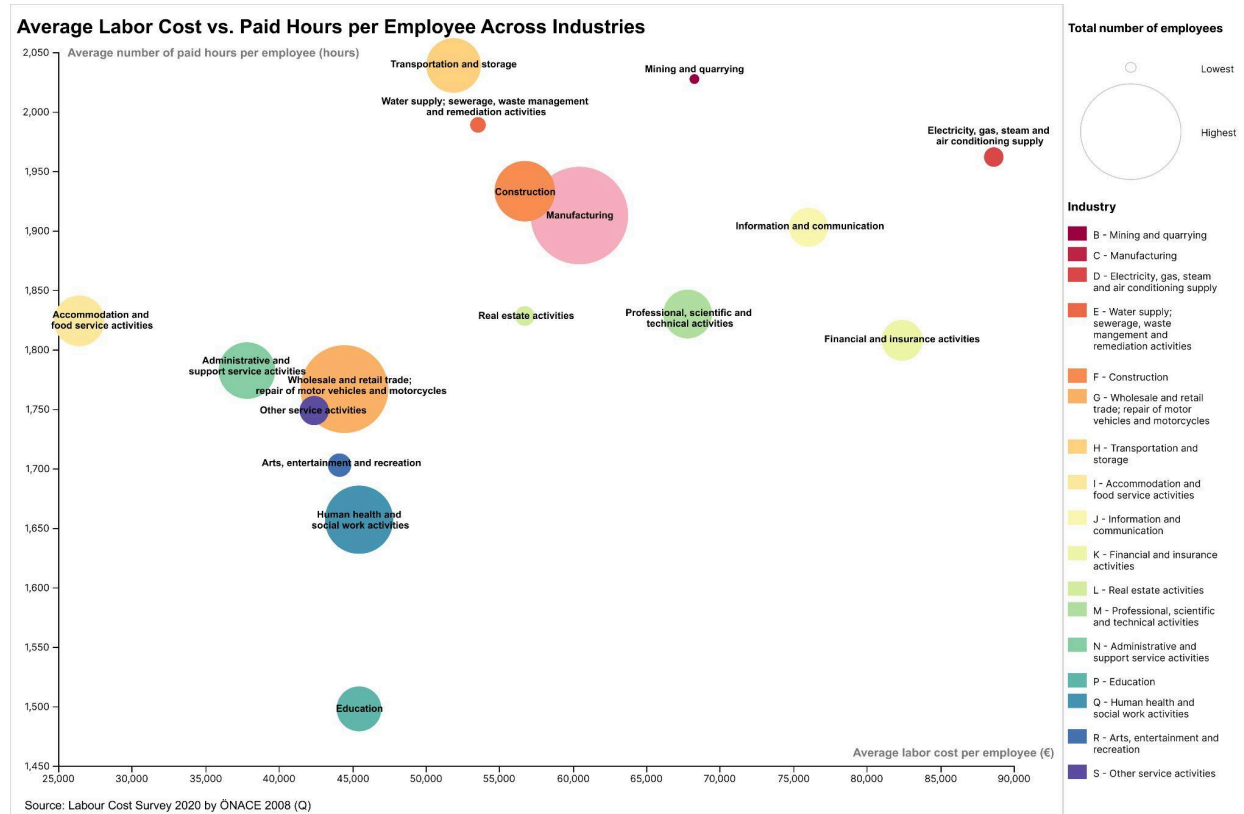
Results

Figure 1. Average Labor Cost vs. Paid Hours per Employee across Industries

The analysis focused on the relationship between average labor costs and paid hours per employee across various industries, as illustrated in Figure 1. Key findings include:

1. Hospitality Industry (Accommodation and Food Service Activities):
   - This sector displays one of the lowest average labor costs (~€25,000 per employee) despite having relatively high paid hours per employee (~1,850 hours).

2. Wholesale and Retail Trade:
- The retail sector shows slightly higher labor costs (~€30,000 per employee) for similar paid hours (~1,750 hours), indicating a slight but notable disparity.

3. Administrative and Support Service Activities:
- This sector shows labor costs of approximately €35,000 per employee with about 1,750 paid hours, highlighting a significant gap compared to hospitality.

5. Arts, Entertainment, and Recreation:

- This sector also exhibits lower average labor costs (~€30,000 per employee) with moderately high paid hours (~1,700 hours).

3. Human Health and Social Work Activities:
- Employees in this sector have relatively high paid hours (~1,650 hours) but are compensated with lower labor costs (~€35,000 per employee), indicating undervaluation similar to the hospitality sector.

Other charts and diagrams supporting the results will be presented in the project documentation.

Discussion

Undervaluation of the Hospitality Industry

The hospitality sector's labor cost is significantly lower than other comparable service-oriented and labor-intensive industries. This indicates a systemic undervaluation of labor within this sector. Given the demanding nature of hospitality jobs, which often require long hours and physical exertion, the low labor cost suggests an urgent need for policy intervention to improve wage standards and working conditions.

Disparities in Retail Trade and Administrative Support

Comparing the hospitality industry with retail trade and administrative support highlights a significant wage gap. Despite similar job structures and skill requirements, these sectors offer better compensation. This disparity indicates that the hospitality industry may require additional support and regulation to ensure fair compensation for its workers.

Conclusion

This study has highlighted significant disparities in labor costs across various industries, with a particular focus on the hospitality sector. The hospitality industry, despite its demanding nature and the long hours required of its employees, is markedly undervalued compared to other service-oriented and labor-intensive industries such as retail trade and administrative support. The analysis reveals that workers in the hospitality sector receive lower compensation for similar or even greater labor inputs. These findings underscore the urgent need for policy interventions to improve wage standards and working conditions in the hospitality industry. The

undervaluation of labor in this sector not only impacts the well-being and economic stability of its workers but also poses broader challenges to industry sustainability and growth.

In the context of the United Nations' Sustainable Development Goals (SDGs), particularly targets 8.5 and 8.8, this study emphasizes the importance of striving for equal pay for work of equal value and the protection of labor rights for all workers. These targets advocate for fair compensation, the protection of labor rights, and improved working conditions, especially for migrant workers, women, and those in precarious employment. Implementing policies that ensure fair wages, safeguard labor rights, and promote equitable working conditions will not only enhance the quality of life for hospitality workers but also contribute to the sustainable development and equitable growth of the industry.

In conclusion, addressing the wage disparities and improving working conditions in the hospitality industry is essential for achieving the broader goals of social justice and economic equity. Through targeted efforts and comprehensive policy reforms, we can move towards a future where all workers, regardless of their industry, are valued and compensated fairly for their contributions.

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