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Restaurant Industry Minimum Wages: A Comparative Analysis

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Abstract

This study measured the relationship of minimum wage to mean hourly front of house and mean hourly back of house commercial restaurant worker wages across city and state levels. The exploratory analysis evaluated mean hourly wages for both front of house and back of house job categories from 2004-2018. Additionally, the study examined whether the gap in mean hourly front of house and mean hourly back of house wages narrowed or expanded over the same period of time. Specifically, the study explored if there were any differences in mean hourly wages for front of house and back of house commercial restaurant workers and the degree which that difference deviated from minimum wage increases. The results of this study suggested minimum wage legislation affects FOH/BOH commercial restaurant workers in different ways. Furthermore, the degree to which mean wages were affected varied across these two job category classifications across city and state levels.

Keywords: Restaurants, minimum wage, City-State level analysis

1. Introduction

The National Restaurant Association (NRA) reported U.S. restaurant sales in 2018 reached $893 billion, representing the eighth consecutive year of real sales gains. Food service establishments share of personal consumption expenditures reached 7% percent in 2018, while reaching 12% share of total U.S. retail sales (U.S. Department of Commerce and Wells Fargo Securities, 2019).

Recruitment, retention and labor costs of employees continues to strengthen as a top challenge for restaurant operators. According to the NRA analysis of data from the U.S. Census Bureau's-American Community Survey, restaurants have added jobs with annual compensation levels between $45,000 and $74,000 at a rate more than three times stronger than the overall economy (National Restaurant Association, 2019*).*

With many cities and states passing legislation increasing minimum wages and a nationwide increase in minimum wage being considered, the widespread economic effects of increasing minimum wages are still unknown and hotly debated. Regardless, restaurant operators are finding staffing and rising wages to be a critical issue in the sustainability of the operational margins. The labor market has tightened substantially, with the unemployment rate at 3.8% (U.S. Department of Labor and Wells Fargo Securities, 2019).

While restaurant operators generally are optimistic about the outlook for future business, a range of challenges continue to plaque owners and operators alike. Rising wage costs and a complex legislative and regulatory landscape at National, State and City levels are also adding pressure on restaurant operation bottom lines.

The restaurant industry is well known for having a high failure rate because it is incredibly competitive and sensitive to changes in the costs of labor. From a business perspective, restaurants typically fail because of increased competition, poor location, ineffective management, lack of meaningful marketing programs, declining revenues, high labor costs, untenable mortgages and or lease payments (Parsa, Self, Sydnor-Busso, Yoon, 2011).

Labor demand remains fairly strong and is a good leading indicator of job growth. The challenge for restaurant operators lies in the continued improvement in the economy and the rise in employment levels. There is more competition for qualified restaurant employees to fill vacant restaurant positions thus creating more demand for hourly restaurant workers and exacerbating the pressure on increased pay rates.

Perhaps the largest operating expenses associated with commercial restaurant operations are labor costs. Since the restaurant industry is heavily reliant on service sector employment practices, minimum wages are prevalent throughout.

In particular, the California minimum wage is on a path to increase annually to $15 per hour in 2022– 50% higher in real terms than it was in 2012. With many municipalities passing legislation increasing minimum wages and a nationwide increase in minimum wage being considered, the widespread economic effects of increasing minimum wages are still a hotly debated topic and there is a lack of knowledge of how it ripples across the restaurant industry as a whole (Parsa, Self, Njite, and King, 2005).

The goal of this study was to examine the relationship between minimum wage levels and FOH/BOH commercial restaurant mean wages across City, State and National levels in order to explore the relationship between minimum and mean hourly wages. The following research questions were developed to understand the trend in commercial restaurant hourly wages:

Research Question 1: A direct relationship exists between minimum wage and FOH and BOH commercial restaurant mean wages between City, State, and National levels.

Research Question 2: Changes in minimum wage legislation affects FOH and BOH commercial restaurant wages in different ways. The degree to which wages will be affected varies across FOH/BOH categories between City and State levels.

Research Question 3: The variance between San Francisco (City level) FOH and BOH mean wages continues to narrow based on legislated upwardly moving minimum wage changes.

To analyze the aforementioned research questions, descriptive statistics and regression analysis were utilized to evaluate the relationship between minimum wages on both mean hourly FOH/BOH commercial restaurant worker wages at City, State and National levels.

2. Literature Review

2.1 California Restaurant Industry

At the state level, restaurants remain a driving force in California's economy. They provide jobs and build careers for millions of people and play a vital role in local communities throughout the state. California's restaurants sales in 2018 was $97 billion. Currently, there are 76,201 eating and drinking establishments, employing 1,457,000 workers in the state (National Restaurant Association, 2019). California is the world's fifth largest economy, with a GDP higher than most countries where 11% of state employment is attributed to the restaurant industry (Vitner, 2019).

At the City level, San Francisco, California represents a diverse city with a diverse offering of cuisines available for local residents and tourists to choose. Currently, there are 4,415 restaurants in San Francisco. San Francisco has been lauded as one of the top food cities in countless articles. San Francisco area households spent $5,192, or 51.2%, of their food dollars on food at home and $4,954, or 48.8% on food away from home. The local restaurant industry is implementing newer technology applications for delivery, reservations, payments and back of the house operations to increase performance sufficiency (Vitner, 2019).

Many ethnic concepts are on the rise in popularity. Contemporary consumer cravings are dovetailing with emerging societal dining trends. Among the trends are more eco-friendly perspectives, greater emphasis on global flavors/cuisines, drive thru and curbside takeout, and enhanced availability of healthful items.

2.2 Minimum Wage

The federal minimum wage was established in 1938 and was originally set at twenty-five cents per hour across the nation. At that time the impetus of the national minimum wage was to improve income levels for working class Americans.

Minimum wages can be set at city, state and federal levels. Since then, steadily increasing federal minimum wage changes have emerged in response to heighted concerns surrounding income in-equality. The U.S. Congress set the federal minimum at $7.25 per hour in 2009. While many states have passed higher wage floors, the federal rate has remained the same for the past 10 years, the longest period of time without an increase since it was implemented in 1938.

The state of California created a minimum wage well before the national minimum wage. State level minimum wages have remained steady for more than 25 years often keeping pace with annualized inflationary adjustments. However, over time the variance between the state and national minimum wage has increased, primarily related to the federal minimum wage rate not being raised as often or as significantly as State level increases (Thornburg et. al, 2019).

More recently, the state of California has been at the forefront of the national political debate surrounding minimum wage increases as a means to address economic inequality. Since 2013, California's minimum wage has increased by more than 33% from $8 to $12 per hour.
In 2013, the governor of California proposed to raise the state minimum wage to $15 per hour by 2022, further exasperating the gap between state and federal level minimum wages. (Thornburg et. al, 2019). While many state and local governments raised their minimum wages in 2020, there are no public plans for a federal increase. Recent economic stimulus responses to the COVID19 pandemic have surfaced legislative discussions surrounding a $15 federal minimum wage level.

A commonly held belief is that increases in minimum wages lead to decreases in employment and can have negative impacts on a number of factors including; employment, working hours, pricing and operational efficiencies. In particular, Kaufman, (2010) found that prices of food products do increase as minimum wages rise when looking at data from quick-service restaurants. Similarly, Aaronson, French and Macdonald (2007) investigated price responses to minimum wage increases and determined prices rose in establishments that were more likely to pay the minimum wage.

With respect to restaurant employment practices, (Haley-Lock, 2012) examined how restaurant employers respond to legislated minimum wage mandates and concluded that restaurateur's discretion over working conditions can improve job quality and blunt the effects of minimum wage regulations.

Interestingly enough, there may be differences in the level of impact on various employment sectors related to the market conditions in the local economy. For instance, Falk, Fehr, and Zehnder, 2006 found that minimum wages had a significant and lasting impact on hourly wages in the retail sector. Their findings indicated that a temporary introduction of a minimum wage increase lead to higher hourly base wages overall which persisted after the minimum wage was removed, thereby supporting the position that pay equality policies may impact people's behavior by influencing perceptions of what a fair wage should be and eventually leading to entitlement effects.

In 2016, Ma and Ghiselli investigated whether raising wages to competitive levels could reduce turnover. They found advantages to paying higher wages included declining turnover rates when compensation levels increased. They also concluded increasing wages leads to a more stable, skilled, and committed workforce helping to eliminate inadequate service that often results from higher turnover.

3. Methodology

3.1 Research Design

The goal of this study was to explore the relationship between minimum wages and commercial restaurant industry FOH/BOH mean wages at the city, state and national level.

The data for this study was extracted from various sources such as the Office of Labor Standards Enforcement of San Francisco, the Department of Industrial Relations of the state of California, and the U.S. Department of Labor. Minimum wages and actual mean wage data for commercial restaurant workers was collected for the city of San Francisco, the state of California, and the U.S. from 2004-2018.

For this study, data was analyzed using descriptive statistical methodologies and NCSS statistical software to derive regression and correlation analysis examining the relationship of minimum wage and actual mean wages for FOH/BOH commercial restaurant job categories.

The aforementioned data was collected for the city of San Francisco, state of California, and U.S. then categorized into two separate groups. The first group was front of the house (FOH) workers, identified as follows: (1) waiters and waitresses, (2) bartenders, (3) first-line supervisors of food preparation and serving workers, (4) dining room, cafeteria attendants and bartender helpers, (5) hosts and hostesses.

The second group or back of the house workers (BOH) were identified as follows: (1) chefs and head cooks, (2) cooks of fast foods, (3) cooks of restaurants, (4) food preparation workers, (5) dishwashers, and (6) food service managers. Mean hourly wages for both FOH and BOH job categories were average earnings on an hourly basis for each type of commercial restaurant job category for each year of the study.

Table 1. Commercial Restaurant FOH/BOH Job Categories

Front of House-job categories	**Back of House-job categories**
Waiter/waitress	Chefs, cooks, head chefs
Bartenders	Cooks, fast food
Front line supervisor's food preparation	Cooks, restaurant
Dining room attendants	Food preparation workers
Host and hostess	Dishwashers

For the FOH/BOH commercial restaurant wages, the aforementioned FOH/BOH job categories and corresponding mean hourly wages from 2004-2018 were aggregated and an overall FOH/BOH average wage was derived.

A variety of methods were utilized to understand the relationship between commercial restaurant FOH/BOH mean wages, and minimum wage. Linear regression and correlation analysis were used to compare the trend of FOH wages versus minimum wage, and BOH wages versus minimum wage for the stated period. A positive correlation indicated that changes in FOH wages or BOH wages were related to changes in minimum wage.

A first level analysis compared the change of commercial restaurant mean FOH wages and mean BOH wages with the corresponding changes of minimum wage year over year from 2004-2018. These changes were calculated as follows:

$$\%\Delta W = \frac{W_2 - W_1}{W_1}$$

A second level analysis examined how minimum wage changes might have affected FOH/BOH job categories by evaluating the differences between FOH and BOH mean wages and how the difference fluctuated with changes in minimum wage as follows:

$$dw = FW - BW$$

A final analysis evaluated the duality in relationship derived from the FOH/BOH commercial restaurant mean wage ratios compared to minimum wages for the same period as follows:

$$R_{fw} = \frac{MW}{FW}$$

$$R_{bw} = \frac{MW}{FW}$$

4. Results

4.1 Research Question 1

Research Question 1: There is a direct relationship between minimum wage and FOH/BOH restaurant wages at City, State, and National levels.

Table 2. San Francisco Correlation Between Minimum Wages and Front of the House Wages

SF FOH	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	1.369196527	0.739020175	1.852718739	0.085119301
SF MW	1.156696187	0.066096522	17.50010666	6.51684E-11

Notes: N=16, F(1,14)= 306.25, P=0.0, R2= 0.9563, Adj R2= 0.9532

Table 2 illustrates the regression results between FOH mean wages for San Francisco and Minimum Wages for the City. With P=0.0 and R2=0.9563, results indicated a significant positive relationship between these wages.

Table 3. San Francisco Correlation Between Minimum Wages and Back of the House Wages

SF BOH	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	8.987885584	1.182517746	7.600634844	2.47277E-06
SF MW	0.732103529	0.105762079	6.922174126	7.06973E-06

Notes: N=16, F(1,14)= 47.92, P=0.0, R2= 0.7739, Adj R2= 0.7577

Table 3 illustrates the regression results between BOH mean wages for San Francisco and Minimum Wages for the City. With P=0.0 and R2=0.9563, results indicated a significant positive relationship between these wages.

The summary trend for Minimum Wages and actual mean wages of FOH and BOH commercial restaurant workers for the City of San Francisco are illustrated in Figure 1 below:

Figure 1. San Francisco Minimum Wage Trend 2004-2018

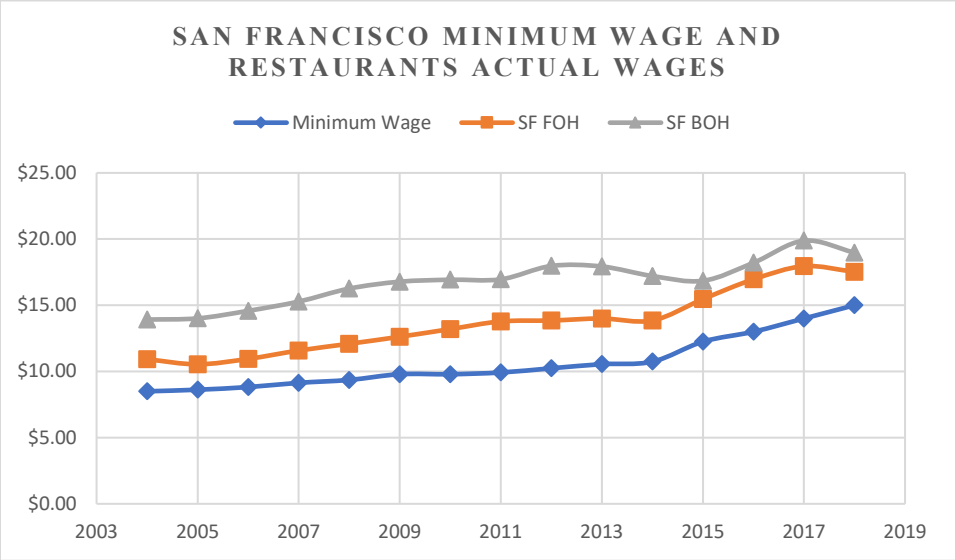


Figure 1 for San Francisco Minimum Wage reflected a gradual 2.4% average increase year over year from a baseline of $8.50 per hour for 2004 to $10.74 per hour for 2014. From 2014 onward, the increase became much sharper with an 8.75% average yearly increase from $10.74 per hour for 2014 to a staggering $15.00 per hour wage for 2018.

FOH wages followed a similar trend. Between 2004-2014, FOH mean wages increased from $10.92 to $13.85 but gradually increased 2.44% for years 2014-2018 with an 6.2% average yearly increase from $13.85 to $17.53.

BOH wages also followed a similar pattern from 2004 to 2018. From 2004 to 2014 BOH mean wages increased from $13.92 to $17.21 with an average yearly change of 2.2%. From 2014 to 2018 BOH wages increased from $17.21 to $18.89, indicating an average yearly increase of 2.7%.

Table 4. Regression Results Between Minimum Wages and Front of the House Wages for California

CA FOH	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	-0.147033181	0.626497159	-0.234690899	0.817846394
CA MW	1.406243005	0.072223266	19.47077547	1.5463E-11

Notes: N=16, F(1,14)= 379.11, P=0.0, R2= 0.9644, Adj R2= 0.9618

Table 4 illustrates the regression results between FOH wages for the State of California and Minimum Wages for the State of California. With P=0.0 and R2= 0.9644, results indicated a significant positive relationship between these wages.

Table 5. Regression Results between Minimum Wages and Back of the House Wages for California

CA BOH	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	6.442234959	0.613126091	10.50719428	5.04422E-08
CA MW	1.00612388	0.070681835	14.23454662	1.01567E-09

Notes: N=16, F(1,14)= 202.62, P=0.0, R2= 0.9353, Adj R2= 0.9307

Table 5 illustrates the regression results between BOH wages for the State of California and Minimum Wages for the State of California. With P=0.0 and R2=0.9353, results indicated a significant positive relationship between these wages.

Figure 2. California Minimum Wage Trend 2004-2018

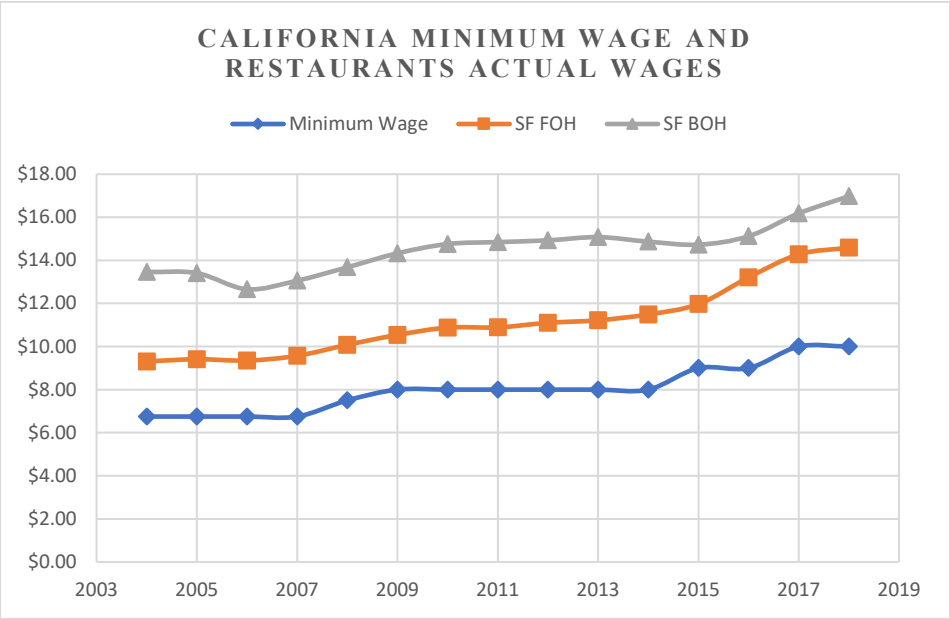


Figure 2 illustrates the State of California Minimum Wage, FOH mean wage, and BOH mean wage trends. All three wage categories have risen from 2004-2018. A gradual increase can be observed from 2004-2014 for all three wage categories with a sharper increase observed from 2014 to 2018. From 2004 to 2014 minimum wage for the State of California rose from $6.75 to $9.00, gradually increasing by 2.76%.

Minimum wage reflects a much sharper increase from $9.00 to $11.00 from 2014 to 2018 with a 5.28% average yearly increase. A similar trend was observed for FOH and BOH mean wages. FOH wages increased from $9.41 to $11.97 with yearly averages of 2.34% for years 2004-2014 and 5.24% from $11.97 to $14.64.

For the same period, BOH wages were $13.41 for year 2004 and $14.73 for 2014 indicating a gradual increase of 0.87%. BOH mean wages increased much sharper from 2014 $14.73 at year to $17.53 at year 2018, reflecting an average yearly increase of 4.46%.

Table 6. Regression Results Between Minimum Wage and Front of the House in National Level

US FOH	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	3.909554781	1.286134207	3.039772023	0.008827132
US MW	1.055673682	0.19322894	5.463331118	8.35393E-05

Notes: N=16, F(1,14)= 202.62, P=0.0, R2=0.6807, Adj R2= 0.6579

Table 6 illustrates the regression results between FOH wages for the U.S. and Minimum Wages for the US. With P=0.0 and R2= 0.6807, results indicated a significant positive relationship between these wages.

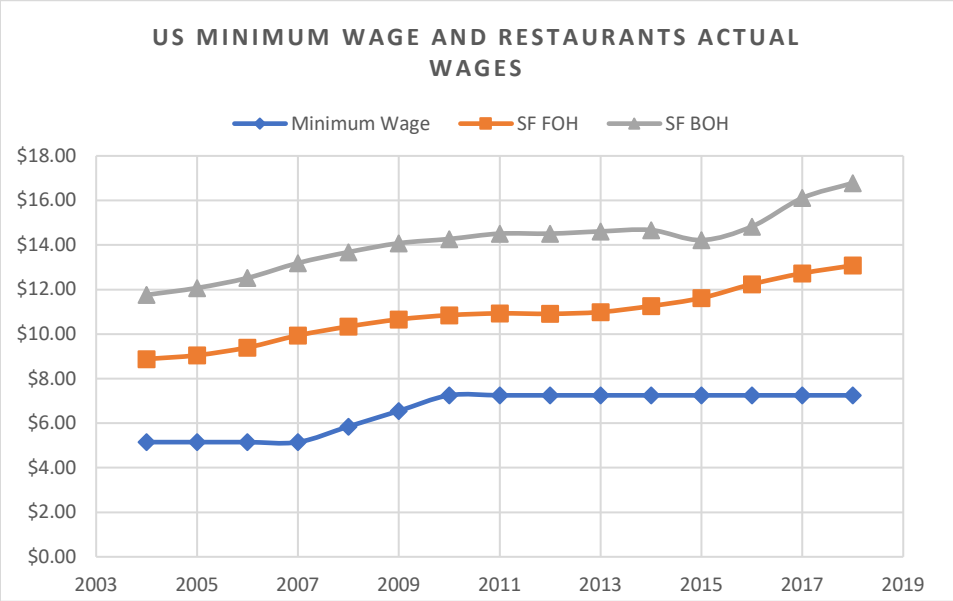
Table 7. Regression Results Between Minimum Wages and Back of the House Wages for the National Level

US BOH	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	6.390586738	1.362107722	4.691689677	0.000346596
US MW	1.1767795	0.204643209	5.750396037	5.0208E-05

Notes: N=16, F(1,14)= 33,07, P=0.0, R2=0.7025, Adj R2= 0.6813

Table 7 illustrates the regression results between BOH for the U.S. and Minimum Wages for the U.S. With P=0.0 and R2= 0.7025, results indicated a significant positive relationship between these two wages.

Figure 3. U.S. Minimum Wage and U.S. Mean Wages 2014-2018



Minimum Wage, BOH wages, and FOH wages for years 2004-2018 illustrated in Figure 4 all wages, especially FOH and BOH wages, increased for the period. However, National Minimum Wage did not rise as much over the past 15 years.

Minimum Wage nationally increased from $5.15 to $7.25 from years 2004 to 2018. On the other hand, FOH wages increased from $8.88 for 2004 to $13.08 in 2018 indicating an average yearly increase of 2.73%. Similarly, BOH wages increased from $11.46 for year 2004 with gradual increases of 2.63% to $16.78 for year 2018.

4.2 Research Question 2

Research Question 2: Changes in minimum wage legislation affected FOH and BOH commercial restaurant hourly wages in different ways. The degree to which wages would be affected varied across FOH/BOH categories between City and State.

Figure 4. FOH and BOH Actual Wages vs. Minimum Wages for San Francisco

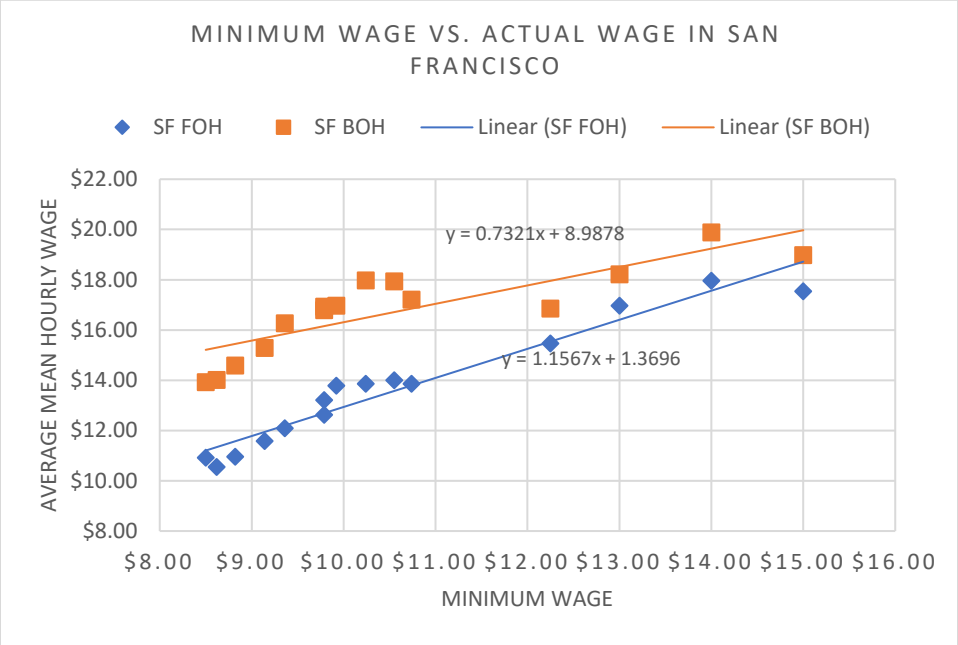


Figure 4 illustrates FOH and BOH actual mean wages for the City of San Francisco plotted against minimum wage changes. For the City of San Francisco, minimum wage increased from $8.50 in 2004 to $15.00 in 2018, indicating a gradual increase of 4.2%. During that same period, FOH and BOH wages increased as well. However, these two wage categories increased at differing levels. FOH mean wages increased from $10.92 in 2004 to $17.53 in 2018 indicating yearly increases of 3.52 percent while BOH mean wages increasing from $13.92 in 2004 to $18.98 in 2018 indicating a 2.32 percent year over year increase. As indicated in Figure 5, a regression trend showed that by increasing $1 in minimum wage, FOH wages on average increased $1.16 while BOH wages increased $0.73.

Figure 5. FOH and BOH Minimum Wage Differential San Francisco

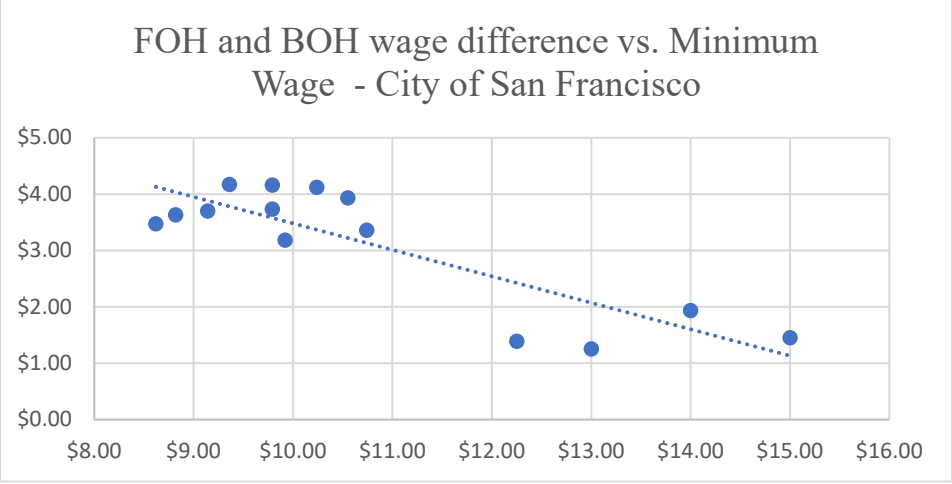


Figure 5 illustrates BOH and FOH mean wage differences versus minimum wage for the City of San Francisco. The difference of these two wage categories decreased from $3.47 for minimum wage of $8.50 to $1.45 for minimum wage of $15 indicating a 58 percent decrease in variability.

Figure 6. Minimum Wage Versus Actual Wage California

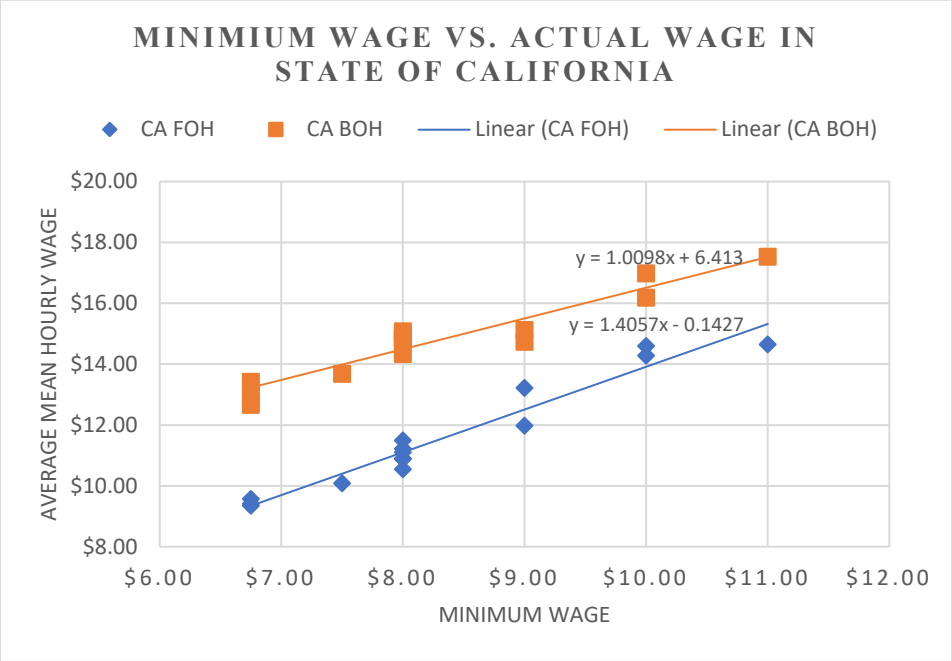


Figure 6 illustrates FOH and BOH mean wages versus minimum wages. Minimum wages for the state of California increased from $6.75 in 2004 to $11.00 in 2018 or 3.42%. For the same period of time, FOH and BOH increased as well but with different rates. FOH mean wages were $9.41 compared to minimum wages of $6.75, increasing to $14.64 against minimum wages of $11.00 during the same period or increasing 3.1% yearly. While BOH mean wages for the state of California were $13.41 against minimum wages of $6.75, increasing to $17.53 against a minimum wage of $11.00, reflected an average year over year increase of 1.82%.

Regression trendlines for FOH and BOH mean wages in Figure 6 showed FOH mean wages increased for the period on average $1.41 while BOH mean wages increased on average $1 per $1 increase in minimum wage for state of California.

Figure 7. FOH and BOH Mean Wage Difference vs. Minimum Wage for California

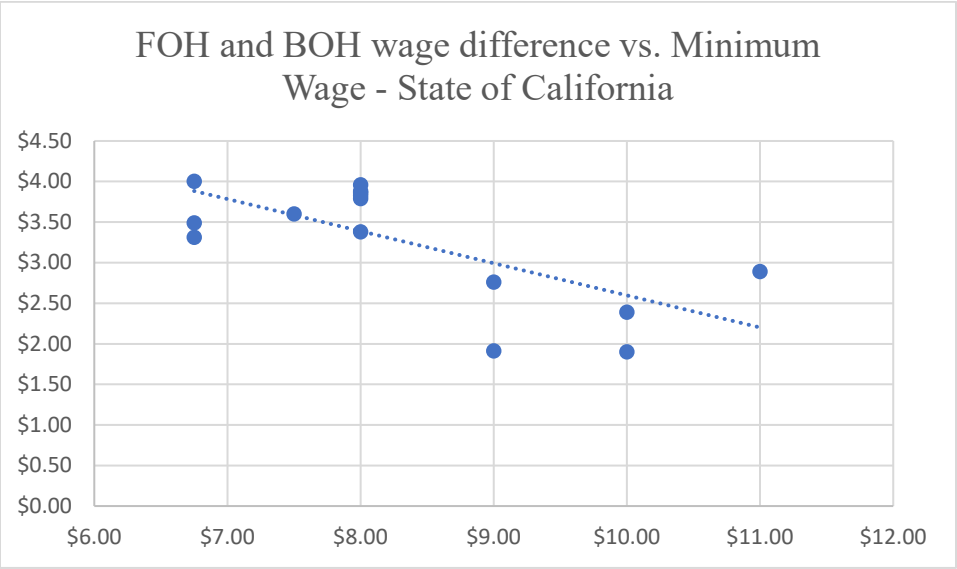


Figure 7 illustrates the difference in FOH and BOH mean wages versus minimum wage for the state of California. The difference decreased from $4.00 per hour for minimum wage of $6.75 to $1.90 for minimum wages of $10.00 and to $2.89 for minimum wage of $11.00 indicating an average of 52% and 33% variability respectively.

4.3 Research Question 3

Research Question 3: The variance between San Francisco (city level) FOH and BOH wages continues to narrow based on minimum wage changes.

Minimum wage for the city of San Francisco is projected to be $15.50 for 2019. Assuming wages continue to following the current trends, we can predict FOH hourly wages to be $19.40 and BOH hourly wages to be $20.40.

Figure 8. San Francisco Historical and Predicted Minimum Wage vs. Year

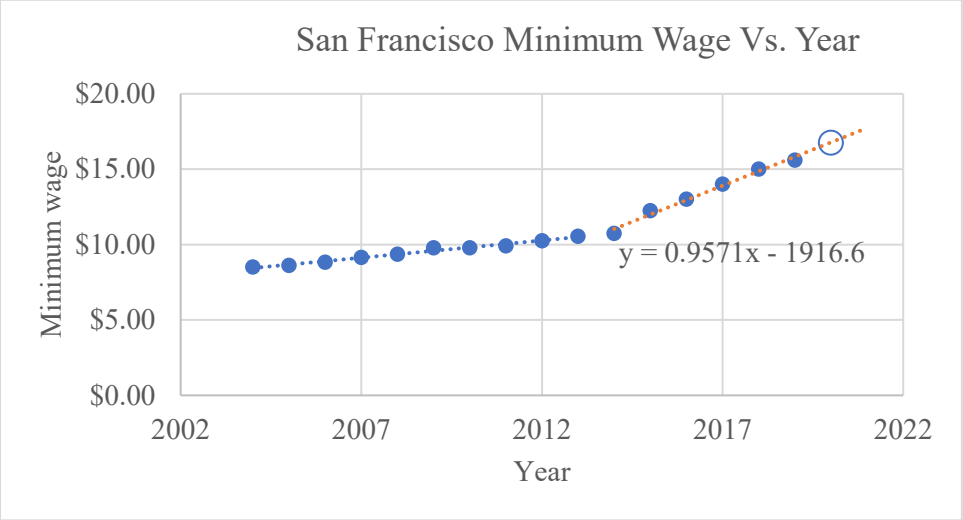


Figure 8 illustrates the San Francisco minimum wage by year. As indicated, from 2004 to 2013 minimum wage had a slower rate of increase, however after 2013, from 2014 to 2019, minimum wages for San Francisco increased at a much higher pace. Using the data points and regression results from 2014 until 2019 with an expected minimum wage of $16.74 for year 2020, FOH and BOH mean wages were predicted to be $20.73 and $21.24 respectively.

Figure 9. Actual and Predicted FOH and BOH Mean Wages vs. Minimum Wage San Francisco

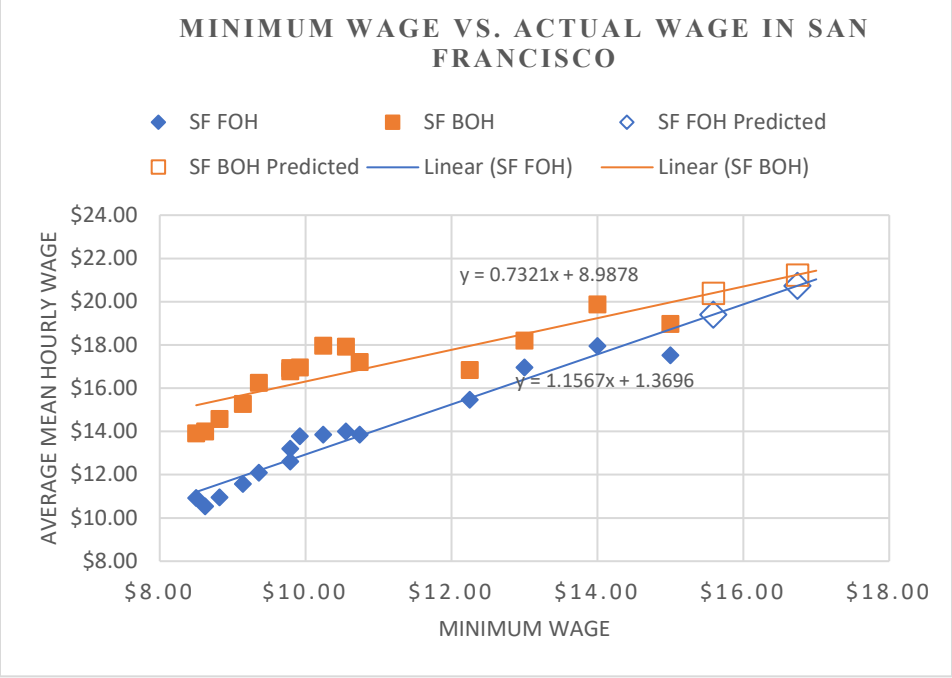


Figure 9 illustrates the historical and predicted FOH and BOH mean wages versus minimum wage for the city of San Francisco. As indicated in figure 9 Minimum wages, FOH and BOH mean hourly wages get closer to each other and eventually the gap between these wages disappears.

5. Discussion and Implications

The goal of this study was to investigate the relationship between minimum wage and mean hourly wages for both front of house and back of house commercial restaurant workers.

Findings indicated a direct correlation between rising minimum wage and city, state and national mean wages for commercial restaurant workers in both BOH/FOH operations. However, national level minimum wage increases have lagged well below city and state level increases. As of January 1, 2020, over 21 states across the U.S. raised minimum wages, with Washington state leading the way with a minimum wage of $13.50 per hour. Yet another important finding of this study indicated the narrowing gap between FOH/BOH mean wages at both city and state levels. The parity between FOH/BOH mean wages in San Francisco reflected the challenge facing restaurant operations with respect to pay equity and entitlement of BOH workers believing their base wage should be higher than FOH workers (Falk, Fehr, and Zehnder, 2006).

These insights are useful in examining wage trending data to be used to make more informed operational decisions about labor management practices. Whether the restaurant industry needs more jurisdictional pressure from either city or state level wage policy changes is a matter of debate. Operating a restaurant is already complicated enough given heightened competition and added changes in demographic preferences for food away from home, supermarket dining options, and technology driven delivery apps that dilute profits.

Since the restaurant industry is the second-largest private-sector employer in the country, entry level service workers minimum wage changes significantly affect operating expenditures and profitability. Many states and the federal government allow a lower minimum wage for such employees. Some states have a hybrid model by which they allow a lower minimum wage, but only if the combined wage and tipped compensation reach a minimum level. However, in California there is no allowance for tipped income in the minimum wage.

In the areas that have already seen a minimum wage hike, restaurants have had to implement new strategies in an attempt to balance increased costs. Urban markets such as San Francisco, Los Angeles or New York City, with higher population density and tourism demand, may be better positioned to mitigate rising wages (both minimum and base hourly wages) through price increases and or customer surcharges. This is because tourists are not as price sensitive as local residents when it comes to eating out. In many cases tourists are seeking unique once in a lifetime dining experiences as part of a local cultural immersion experience.

In an effort to narrow the gap between FOH/BOH wage increases throughout the restaurant operation, some are eliminating tipping while moderately increasing wages for those in the kitchen who would not have received tips, and for the other (non-minimum wage) employees that would otherwise feel insulted that their base wage was not increased in proportion to the minimum wage increase.

Other efforts to mitigate rising labor costs may include instituting service charges which are owned by the employer and not shared with their employees. Alternative rising labor cost mitigation strategies may include; (1) reducing hours, (2) cutting back staff, (3) adjusting hours of operation on slower days of the week, (4) close operations on slower days of the week, and (5) seeking automation services.

5.2 Study Limitations

This study was primarily focused on city and state level analysis in a particular market. Future state level analysis could incorporate a wider sampling data set in Midwest and East coast regions of the U.S., providing more in-depth comparative analysis of mean FOH/BOH hourly commercial restaurant wage trends.

Additionally, one of the ongoing debates over minimum wages and real wages concerns other compensation and whether all forms of compensation should be included in the calculation of the base pay rate. For instance, operators in most cases favor a lower base hourly wage level for direct pay when full compensation includes health benefits and tipped income (Sylvia and Nadler, 2014). Future studies could incorporate tipped wages into the mean hourly rates and get a clearer picture of the real FOH wages inclusive of tipped income.

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