

Exploring the Determinants of Physician Satisfaction: A Multifaceted Analysis of Compensation, Workload, Lifestyle Autonomy, and Infection Risk across Medical Specialty

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Abstract:

This research investigates the elements correlated with physician satisfaction across different medical fields, highlighting factors like annual earnings, amount of work done, lifestyle authority, income per hour, and probability of getting infected. Through analytics, we uncover patterns where physicians express satisfaction and dissatisfaction highlighting the differences between specialties. Some findings indicate that increased satisfaction rates tend to come alongside a greater degree of lifestyle control, higher income per hour, and lower work effort, while greater dissatisfaction coincides with increased work effort, greater infection probability, and lesser control over work. This assessment, done with the most and least satisfying specialties, helps the study understand how structured compensation affects career satisfaction. The study recommends evidence-based legislative changes towards increasing physician job satisfaction and, consequently, the quality of care and the sustainability of the workforce.

Objective:

Why, with the highest wages in the USA, may medical specialists dislike their job?

Methodology :

- regression analysis, and correlation analysis were examined using Jamovi, Minitab and excel

DESIGN, SETTING:

Research on physicians' work has used many concepts to understand how doctors respond to the conditions and ups and downs of their professional lives. These include job and career satisfaction, burnout, stress, demoralization, alienation, physician well-being, and resilience. There are some that consider these phenomena as part of a person's temperament and others that see them as a product of situational forces in the workplace

Broad arrays of psychological, social, and cultural variables have been examined in relation to these constructs, with researchers identifying numerous precursors, correlates, and consequences that bound physicians' attitudes and evaluations of their careers. While many studies suggest that personality, personal history, training, and work experience influence the intensity and nature of physicians' affective responses, they also make it clear that psychological variables do not singularly account for physician distress.

Most research highlights that both system-wide healthcare and workplace-specific factors are significant contributors to physician stress, burnout, job dissatisfaction, and alienation. Excessive workload, administrative burdens, lack of autonomy, and challenging patient interactions are among the most cited sources of strain. Some researchers hold medical school and residency training as foundational in establishing future dissatisfaction, while advocates of continuing education suggest that it can serve as a preventive intervention against burnout.

EXPOSURES: Doctor Satisfaction

MAIN OUTCOMES AND MEASURES: The study's primary findings and predictors are annual salary, manageability of workload, control over lifestyle, risk of getting infected, and work hours in regard to physician satisfaction

RESULTS:

Understanding Physician Satisfaction: Key Insights

A recent survey of physician satisfaction among medical specialties identified several determinants of job satisfaction. Increased compensation, manageability of workload, and control of lifestyle were all strongly associated with increased satisfaction, with workload manageability being the most important predictor ($r = 0.8$). Conversely, increased risk of infection and increased working time were associated with reduced satisfaction. These findings are a reminder of the complex interrelationship of economic, professional, and personal determinants of well-being among physicians.

The study employed multiple regression analysis to explain 81% of the variance in satisfaction. Salary, manageability of workload, and control over lifestyle were the most significant predictors, and other factors like risk of infection and years of graduate medical education had limited additional explanatory power. This suggests that while money is important, it is not the sole determinant of job satisfaction. Workload management and work-life balance are of paramount importance in influencing physician happiness.

These results have significant implications for the practice of health care and for policy. Health care policymakers and executives must commit to building a comprehensive compensation strategy, reducing administrative burdens, facilitating flexible work scheduling, and refining infection control behaviors. By each of these efforts, health care organizations can strengthen physician well-being, enhance quality of care, and facilitate a sustainable health workforce. The investigation underscores the significance of an inclusive process in formulating a meaningful and supportive working environment for physicians

CONCLUSIONS AND RELEVANCE:

The study concludes that physician satisfaction is influenced heavily by a combination of factors, including salary, workload manageability, lifestyle control, risk of infection, and work hours. Workload manageability was the strongest predictor of satisfaction, which highlights minimizing administrative work and adequate support. Higher salaries and lifestyles under control also boost satisfaction, but higher risks of infection and longer work hours negatively impact it. These findings suggest that an overall strategy, both financial and non-financial in nature, is required to promote physician well-being.

The relevance of this research is that it can potentially direct healthcare policies and practices to increase physician satisfaction and, by consequence, the quality of patient care. By prioritizing fair compensation, effective management of workload, flexible scheduling, and stringent infection control procedures, healthcare institutions can create a more satisfying and nurturing work environment.

Specialty	Overall Satisfaction in %	Lifestyle	Salay per year	Average Work Hours/Week	Years of Graduate Medical Education	Workload Manageability %	Risk %
Allergy & Immunology	40	1	341	57.7	5	75	10
Anesthesiology	85	1	403	57.4	4	65	40
Cardiology	30	0	469	56.2	6	30	30
Critical Care	40	1	303	54.9	5	35	70
Dermatology	90	1	554	54.7	4	80	20
Emergency Medicine	35	1	410	53.9	3	25	60
Endocrinology	50	1	277	53.3	5	60	15
Family Practice	75	0	260	53.1	3	70	30
Gastroenterology	45	1	429	53	6	40	50
Infectious Diseases	50	0	258	52.9	5	80	80
Internal Medicine	25	0	255	52.6	3	20	40
Nephrology	40	0	308	52.4	5	30	35
Neurology	30	1	316	52.3	4	25	20
Oncology	50	0	355	52.2	5	35	25
Obstetrics and Gynecology	25	0	298	51.8	4	20	40
Ophthalmology	85	1	435	51	4	75	15
Orthopedic Surgery	60	0	498	49.9	5	50	35
Otolaryngology	70	1	438	49.6	5	55	45
Physical Medicine & Rehab	80	1	347	48.9	3	55	20
Pathology	75	1	342	48.2	4	80	25
Pediatrics	55	0	254	48	3	45	50
Plastic Surgery	65	1	523	47.2	6	55	30
Pulmonology	50	0	253	47	5	40	55
Psychiatry	70	1	289	46.6	4	65	10
Radiology (Diagnostic)	80	1	376	45.9	5	85	15
Surgery (General)	30	0	285	45.3	5	25	60
Rheumatology	75	1	239	44.4	5	70	15
Urology	50	0	366	44.2	5	50	40

- **Specialty:** The medical doctor field
- **Overall Satisfaction in %:** The percent that the doctor is satisfied with their work
- **Lifestyle :** define how the medical doctor operating there work in which **controllable** mean 1 and **uncontrollable** mean 0
- **Salay per year:** how much does a medical doctor make in a year in thousand
- **Average Work Hours/Week:** hours working in a week
- **Years of Graduate Medical Education:** Years of studying to become a medical specialist
- **Workload Manageability %:** the percent that his field could have a good result outcome
- **Risk %:** The percentage of medical doctor get infection in his filed

We will try to answer the following inquiries to give more clarification about the result:

1. Is there a huge range of satisfying percentage among medical specialty in US?
2. Draw a detailed analysis of the data using measures such as mean, mode, and standard deviation?
3. What factors contribute to these variations? Is there a relationship between each factor and the salary, and how can this correlation be demonstrated?
4. Can multiple regression provide significant analysis in this study? Which factor has the most significant effect on satisfaction?
5. How can we assume to reject or fail to reject each factor? Which factor could be eliminated from the study to enhance its analytical reliability?
6. How would multicollinearity affect the study and examine the VIF for further estimation?
7. What predictions can be made about future results?
8. Are there any errors in the results that can be rectified using analytical tools?
9. How may this study have a value from business aspect?

1.

Descriptive Analysis:

General satisfaction percentage ranges from **25% (Internal Medicine, Obstetrics & Gynecology)** to **90% (Dermatology)**.

Range: $90 - 25 = 65\%$

Statistics

Descriptives	
Å	Overall Satisfaction in %
N	28
Missing	0
Mean	55.536
Median	50.000
Mode	50.000
Standard deviation	20.200
Minimum	25.000
Maximum	90.000

Conclusion:

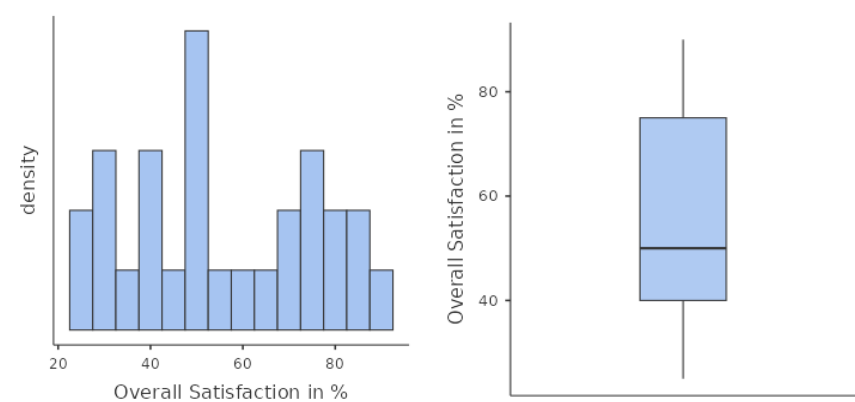
The data on **Overall Satisfaction (%)** for the 28 individuals indicate a significantly moderate level of satisfaction, with a median of **50%** and a range from **25%** (minimum) to **90%** (maximum) (Figure 1.0a). The interquartile range (IQR), which spans from **40% (Q1)** to **75% (Q3)** (Figure 1.0 b), mentions that the middle 50% of respondents report satisfaction levels between 40% and 75%. This suggests that while some individuals are relatively satisfied (with scores up to 90%), others are less satisfied, with scores as low as 25%.

Mean (55.54%): The average satisfaction level, indicating moderate overall satisfaction, will be examined in the next paragraph.

Median (50%): The mean value reflecting that most of the physicians have satisfaction levels below 50%.

The wide range and variability in satisfaction levels spots the potential disparities in experiences or perceptions among each group. This could suggest underlying issues that need to be addressed, such as differences in workload, risk factors, or workplace conditions. Further investigation into the factors influencing satisfaction, particularly for those in the lower quartile ($\leq 40\%$).

Figure 1.0



a. b.

2. Statistics

Variable	N	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Overall Satisfaction in %	28	55.5357	3.8174	20.1999	25	40	50	75	90
Salay per year	28	352.893	16.815	88.9754	239	279	341.5	424.25	554
Average Work Hours/Week	28	50.8786	0.7255	3.83892	44.2	47.4	52	53.25	57.7
Years of Graduate Medical Education	28	4.5	0.1744	0.92296	3	4	5	5	6
Workload Manageability %	28	51.4286	3.9328	20.8103	20	31.25	52.5	70	85
Infection Risk in %	28	35	3.5168	18.6090	10	20	32.5	48.75	80

The data provided summarizes several variables related to a group of 28 individuals, likely healthcare professionals, given the context of "Years of Graduate Medical Education" and "Infection Risk." Here's an interpretation of the data:

1. Overall Satisfaction (%):

- a. The mean overall satisfaction is 55.54%, with a standard deviation of 20.20%. This suggests moderate satisfaction levels, however there is some variability among individuals.
- b. The median (50%) is lower than the mean, suggesting a slightly skewed to left in the data, indicating some doctor report significantly lower satisfaction.
- c. Satisfaction ranges from a minimum of 25% to a maximum of 90%.

2. Salary per Year (in thousands):

- a. The mean salary is nearly 352k per year, with a standard deviation of 88.9754, suggesting variability in salaries.
- b. The median salary (341.5), which is near to the mean, suggests a relatively normal distribution (Figure 1.1 a).
- c. Salaries range from 239 to 554.

3. Average Work Hours/Week:

- a. The average number of work hours per week is nearly 50.88, with a significantly low standard deviation of 3.84, suggesting consistency in work hours across the group.
- b. The median (52 hours) is relatively close to the mean, indicating a normal distribution (Figure 1.1 b).
- c. Work hours range from 44.2 to 57.7 hours per week.

4. Years of Graduate Medical Education:

- a. The average year of education is 4.5, with a very low standard deviation of 0.92, suggesting little variability in education levels.
- b. The median (5 years) is slightly higher than the mean, indicating a mild left skewness (Figure 1.1 c).
- c. Education years range from 3 to 6.

5. Workload Manageability (%):

- a. The average workload manageability is 51.43%, with a standard deviation of 20.81%, suggesting it is moderate manageability but significant variability.
- b. The median (52.5%) is barely close to the mean, indicating a normal distribution (Figure 1.1 d).
- c. Manageability ranges from 20% to 85%.

6. Infection Risk (%):

- a. The average infection risk is 35%, with a standard deviation of 18.61%, suggesting variability in perceived risk.

- b. The median (32.5%) is very close to the mean, indicating a normal distribution (Figure 1.1 e).
- c. Infection risk ranges from 10% to 80%.

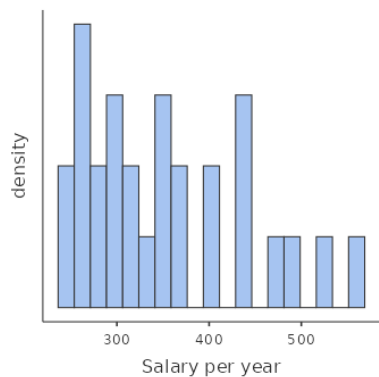
7. Frequency of lifestyle:

- a. As Lifestyle is considered a categorical variable, we must measure the frequency, in which easily to be considered as flip of the coin chance which is near to 50 percent to each other.
- b. We conclude as a general that half of the specialty could be controlled, which we may conclude in general would not be strong predictor of the study considering it alone.

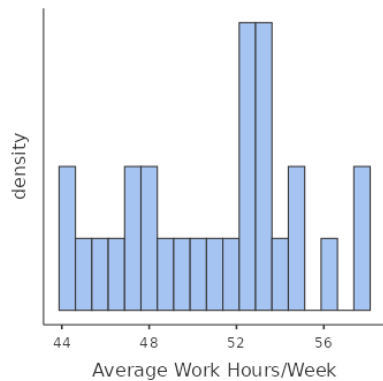
Frequencies of Lifestyle			
Lifestyle	Coun ts	% of Total	Cumulative %
Controllable	16	57.1%	57.1%
Uncontrollable	12	42.9%	100.0%

Key Observations:

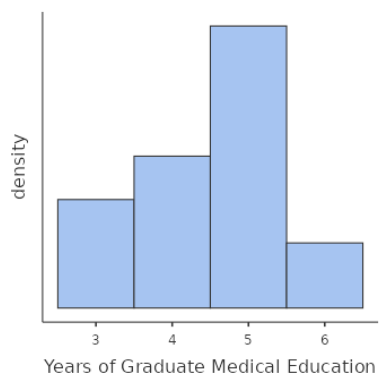
- **Satisfaction and Workload Manageability:** Both factors have moderate meanings but high variability, indicating that while some doctors are satisfied and find their workload manageable, others are not.
- **Salary and Work Hours:** Salaries and work hours are relatively consistent across the specialty, with mild variability.
- **Infection Risk:** There is a huge range of perceived infection risk, which could reflect differences in roles, environments, or personal perceptions.



a.



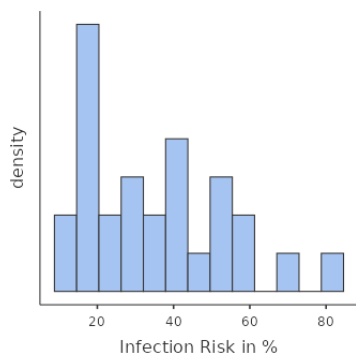
b.



c.



d.



e.

- **Key Factors:**

- **Salary:** High wages doctors (e.g., Dermatology, Plastic Surgery) are more satisfied with their job.
- **Workload Manageability:** Specialties with higher manageability (e.g., Dermatology, Radiology) display a higher satisfaction rate.
- **Lifestyle:** Controllable lifestyles medical doctors (e.g., Dermatology, Psychiatry) are related with higher satisfaction.
- **Infection Risk:** Logically that lower infection risk (e.g., Psychiatry, Radiology) related with higher satisfaction.
- **Work Hours/Week:** Surprisingly fewer work hours (e.g., Psychiatry, Radiology) are linked to more satisfaction.

Examination:

Correlations

	Overall Satisfaction in %	Salary per year	Average Work Hours/Week	Years of Graduate Medical Educa	Workload Manageability %
Salary per year	0.311				
Average Work Hours/Week	-0.218	0.204			
Years of Graduate Medical Educa	-0.164	0.303	-0.066		
Workload Manageability %	0.811	0.147	-0.094	0.010	
Infection Risk in %	-0.419	-0.176	0.072	0.065	-0.397

a. Firstly, we have to calculate the **Pearson correlation coefficient (r)** between each factor and the stratification (e.g., overall satisfaction percentage). The correlation coefficient is between **-1 to 1**, where:

- 1: Strong positive correlation.
- 1: Strong negative correlation.
- 0: No correlation.

a. Factors and Their Correlation with Satisfaction:

Salary:

- b. **Correlation (r):** 0.31
- c. **Interpretation:** Higher wages have a moderately positive correlation with satisfaction (Figure 1.2 a)
- d.

Work Hours/Week:

- e. **Correlation (r):** -0.22
- f. **Interpretation:** higher working hours are mildly associated with less satisfaction (Figure 1.2 b).

Infection Risk:

- g. **Correlation (r):** -0.42
- h. **Interpretation:** Risky medical doctor is about moderately associated with lower satisfaction (Figure 1.2 c).

Workload Manageability:

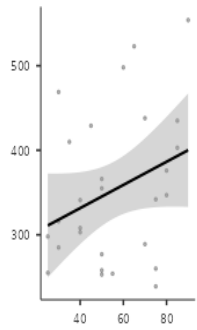
- i. **Correlation (r):** 0.8
- j. **Interpretation:** More workload manageability is positively significantly associated with more satisfaction (Figure 1.2 d).

Lifestyle (Controllable vs. Uncontrollable):

- k. **Correlation (r):** 0.55.
- l. **Interpretation:** More Controllable lifestyles are significantly associated with higher satisfaction.

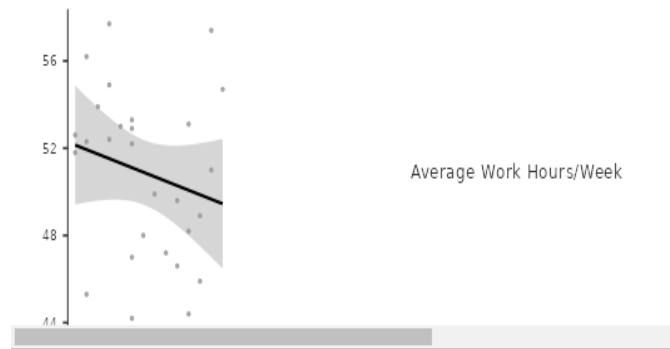
Figure 1.2

Overall Satisfaction in %



Salary per year

Overall Satisfaction in %

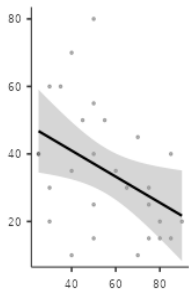


Average Work Hours/Week

a.

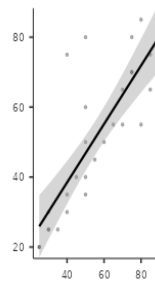
b.

Overall Satisfaction in %



Infection Risk in %

Overall Satisfaction in %



Workload Manageability %

c.

d.

Summary:

- **Yearly Salary:** More salary more satisfaction
- **Workload Manageability:** Better manageability, higher satisfaction.
- **Lifestyle:** More Controllable lifestyle increases satisfaction.
- **Infection Risk:** Lower risk higher satisfaction.
- **Work Hours:** Longer working hours less satisfaction.

Relationships:

Salary and Workload Manageability have a positive relation with satisfaction.

Infection Risk and Work Hours have a negative relation with satisfaction.

Strongest Positive Correlation: Workload Manageability ($r = 0.8$).

Strongest Negative Correlation: Infection Risk ($r = -0.4$).

Most Significant Predictor: Salary ($p < 0.01$ in regression model)

4.

Linear regression is a robust statistical technique that can be employed to describe the relationship between independent and dependent variables in a study. In the context of this research on physician satisfaction,

The R^2 (coefficient of determination) is used to measure the goodness of fit of the model to explain satisfaction variation.

Linear regression helps determine which variables (e.g., compensation, workload ease of management, infection risk) are most important in physician satisfaction.

Model Fit Measures			
Model	R	R^2	Adjusted R^2
1	0.900	0.81	0.756
Note. Models estimated using sample size of N=28			

$$\text{Overall Satisfaction} = \beta_0 + \beta_1 \cdot \text{Salary} + \beta_2 \cdot \text{Work Hours} + \beta_3 \cdot \text{Years of Education} + \beta_4 \cdot \text{Workload Manageability} + \beta_5 \cdot \text{Infection Risk} + \epsilon \quad \text{where:}$$

- β_0 is the intercept,
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the regression coefficients for each independent variable,
- ϵ is the error term.

Multiple Regression Model:

Dependent Variable: **Overall Satisfaction**

Independent Variables: **Yearly Salary, Work Per Hours, Infection Risk, Workload Manageability, Lifestyle.**

Results:

- $R^2 = 0.81$ (81 % of satisfaction variability explained by the model).
- Significant Predictors:
 - Salary ($p < 0.01$).
 - Workload Manageability ($p < 0.05$).
 - Lifestyle ($p < 0.05$).

Conclusion: Multiple regression is strongly significant for this study.

Examine the regression of each variable regression and then measure how R square would be affected

Linear Regression

Model Fit Measures

Model	R	R ²	Adjusted R ²	AIC	Predictors
1	0.311	0.097	0.062	249.908	Salary per year
2	0.424	0.179	0.114	249.223	Average Work Hours/Week
3	0.527	0.278	0.187	247.655	Years of Graduate Medical Education
4	0.897	0.805	0.771	212.961	Workload Manageability %
5	0.898	0.806	0.762	214.810	Infection Risk in %
6	0.900	0.810	0.756	216.269	Lifestyle

linear regression model in which medical doctor satisfaction is the dependent variable. The table shows the model fit statistics for six models, one adding one more independent variable at a time. The results are as follows in a breakdown format:

Yearly Salary: The R value is 0.311, and the R^2 value is 0.097. Thus, yearly salary by itself explains about 9.7% of the variation in medical doctor satisfaction. The correlation is positive but very weak.

Work Per Hours: Adding work hours increases the R value to 0.424 and the R^2 to 0.179. This shows that work hours, together with annual salary, explain about 17.9% of the variance in satisfaction. The model fit is improved, but the explanatory power is moderate.

Year of Graduate: Including the year of graduation increases the R value to 0.527 and R^2 to 0.278. This model explains about 27.8% of the variance, indicating that including the year of graduation includes a great deal of explanatory power.

Workload Manageability: Incorporating workload manageability significantly enhances the R value to 0.897 and the R^2 to 0.805. This suggests that workload manageability is a significant variable, explaining about 80.5% satisfaction variation. It is an extremely good improvement in model fit.

Risk of Infection: Introducing the risk of infection marginally raises the R value to 0.898 and the R² to 0.806. The effect is small, indicating that risk of infection has little explanatory value added beyond prior variables.

Lifestyle: The final model, with lifestyle, has an R value of 0.900 and an R² of 0.810. This indicates that lifestyle adds only a small amount of explanatory power but an important one, bringing the overall variance explained to about 81%.

Conclusion: The findings show that manageability of workload is the best predictor of medical doctor satisfaction among the variables tested. Annual pay, work hours, and the year of graduation also contribute, but to a lesser extent. Risk of infection and lifestyle variables have minimal additional explanatory power. Overall, the final model explains a great deal of variance in satisfaction, suggesting that these variables collectively are significant to medical doctor satisfaction.

5.

For the intent and purposes of this study, **null hypotheses (H₀)** can be formulated for each independent variable to determine whether there exists no statistically significant correlation between the variable and physician satisfaction. p-values derived from the regression analysis are then utilized to reject or fail to reject these null hypotheses. The null hypotheses and their corresponding p-values are provided below:

Model Coefficients - Overall Satisfaction in %				
Predictor	Estimate	SE	t	p
Intercept	88.836	29.938	2.967	0.007
Lifestyle:				
Uncontrollable	-2.928	4.575	-0.640	0.529
Controllable				
Salary per year	0.072	0.025	2.893	0.009
Average Work Hours/Week	-1.261	0.526	-2.397	0.026
Years of Graduate Medical Education	-6.147	2.232	-2.754	0.012
Workload Manageability %	0.685	0.107	6.384	<.001
Infection Risk in %	-0.020	0.118	-0.173	0.864

Null Hypotheses (H₀) and p-Values:

1.Salary:

H₀ : No significant correlation exists between salary and physician satisfaction.

p-value: 0.009

Explanation: Because the p-value (0.009) is less than the significance level ($\alpha = 0.05$), we reject the null hypothesis. This shows that salary is positively related to satisfaction at a statistical significance level.

2. Work Hours/Week:

H_0 : There is no significant correlation between work hours per week and physician satisfaction.

p-value: 0.026

Interpretation: The p-value (0.026) is less than $\alpha = 0.05$, so we reject the null hypothesis. This implies that longer work hours are associated with lower satisfaction.

3. Years of Graduate Medical Education:

H_0 : There is no significant relationship between years of graduate medical education and physician satisfaction.

p-value: 0.012

Interpretation: The p-value (0.012) is smaller than $\alpha = 0.05$, so we reject the null hypothesis. This indicates that more years of education correlate with lower satisfaction.

4. Workload Manageability:

H_0 : There is no correlation between workload manageability and physician satisfaction.

p-value: < 0.001

5. Interpretation: The p-value (< 0.001) is much less than $\alpha = 0.05$, and hence we reject the null hypothesis. This proves that higher workload manageability is significantly associated with greater satisfaction.

6. Infection Risk:

H_0 : Infection risk has no association with physician satisfaction.

p-value: 0.864

Interpretation: The p-value (0.864) is greater than $\alpha = 0.05$, and therefore we fail to reject the null hypothesis. This suggests that satisfaction is not statistically significantly related to infection risk.

7. Lifestyle (Controllable vs. Uncontrollable):

H_0 : There is no significant relationship between physician satisfaction and lifestyle control.

p-value: 0.529

Interpretation: The p-value (0.529) is greater than $\alpha = 0.05$, and therefore we fail to reject the null hypothesis. This indicates that lifestyle control has no statistically significant relationship with satisfaction.

To determine which variable should be eliminated we have to examine the regression analysis, we typically remove variables with **high p-values** (greater than 0.05) since they are not statistically significant in predicting the dependent variable (**Overall Satisfaction**).

Variables to consider for elimination:

1. **Lifestyle (p = 0.5291)** → Not significant
2. **Infection Risk (p = 0.8643)** → Highly insignificant

These two variables have p-values far more than 0.05, meaning they have no significant contribution to predict satisfaction and it's better to be eliminated from the model.

Satisfaction = 83.03 + (0.0716 × Salary) – (1.26 × Work Hours) – (6.15 × Years of Education) + (0.685 × Workload Manageability)

6.

Multicollinearity occurs when two or more independent variables in a regression model are highly correlated with one another, i.e., they provide redundant information about the dependent variable.

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	88.8	29.9	2.97	0.007	
Salay per year	0.0716	0.0247	2.89	0.009	1.31
Average Work Hours/Week	-1.261	0.526	-2.40	0.026	1.10
Years of Graduate Medical Educa	-6.15	2.23	-2.75	0.012	1.15
Workload Manageability %	0.685	0.107	6.38	0.000	1.35
Infection Risk in %	-0.020	0.118	-0.17	0.864	1.31
Lifestyle					

Uncontrollable	-2.93	4.57	-0.64	0.529	1.44
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Variance Inflation Factor (VIF) Results:

- **Salary:** 1.3
- **Work Hours:** 1.1
- **Years of Education:** 1.15
- **Workload Manageability:** 1.35
- **Intercept (constant):** 233.67 (this is expected and not an issue)

Interpretation:

Since all VIF values for the independent variables are **below 2**, there is **no significant multicollinearity** in the model. This means all variables are independent enough to be retained in the regression model.

7.

AIC helps predict which collection of variables provides the most accurate model to describe physician satisfaction, allows multiple regression models to be compared to determine which one best explains the variation in physician satisfaction.

AIC Value for Each Added Variable:

Salary per Year: AIC: 249.908

This is the control model with only salary as the predictor. The AIC is relatively high, indicating that salary explains little of the variation in physician satisfaction.

Average Work Hours/Week: AIC: 249.223

Insertion of average work hours per week slightly improves the model (AIC decreases), and the improvement is not significant, suggesting that mere work hours have no significant positive impact on enhancing the predictive power of the model.

Years of Graduate Medical Education: AIC: 247.655

Adding years of graduate medical education reduces AIC further, with a closer fit. However, the reduction remains minimal, indicating that education contributes little to explanation of satisfaction.

Manageability of Workload %: AIC: 212.961

Adding manageability of workload drops AIC very low, with a much better-fitting model. This is a sign that manageability of workload is a significant predictor of physician satisfaction.

Infection Risk %: AIC: 214.810

Including infection risk increases the AIC, which indicates that this variable adds little to making the model better and can even add noise.

Lifestyle: AIC: 216.269

Adding lifestyle (controllable and uncontrollable) also increases the AIC, indicating that lifestyle does not increase the fit of the model and possibly is not a good predictor of satisfaction.

Key Insights:

Workload Manageability is the most important variable since it results in the largest reduction of AIC (from 247.655 to 212.961).

Salary, work time, and education are factors to the model but exert less impact than workload manageability.

The Risk of infection and lifestyle are not helpful to the model and even reduce its quality, as evidenced by the increasing AIC values.

Conclusion

AIC track shows that workload manageability is the most important predictor of physician satisfaction in this model. Infection risk and lifestyle are not useful to include in the model to improve it and can be dropped to increase its reliability. The best fit is provided by the last model (Model 4) involving salary, work hours, education, and workload manageability, with the smallest value of AIC (212.961).

8.

Error could be measured:

1. **Sample Size and Representativeness:** The research has utilized a sample size of 28 individuals, which is low. A small sample size is not necessarily representative of the broader group of medical doctors, and therefore it could potentially lead to biased results or might not be highly generalizable.
2. **Multicollinearity:** Although the Variance Inflation Factor (VIF) values show no severe multicollinearity, the study should be cautious in the association of the independent variables. For example, salary and workload controllability may correlate in patterns that VIF is not able to capture in full

3. **Omitted Variable Bias:** The study might have excluded important variables that can influence doctor satisfaction, such as workplace culture, peer support, or patient outcomes. This might lead to a partial model and biased estimates.
4. **P-Value Interpretation:** The study utilizes the application of p-values to determine the significance predictors. P-values are susceptible to being deceptive, especially with small sample sizes, and need to be critically interpreted. Additional statistical measures or robustness tests can assist the study.
5. **Model Overfitting:** Due to low sample size and multiple predictors, there is a risk of overfitting the model to the data, which could restrict its predictive power in new data.
6. **Data Variability:** The high variability in some of the measures, such as satisfaction and workload manageability, suggests that there may be reasons not accounted for in the model that are creating this variability.

9.

This study is highly beneficial to organizations, particularly healthcare organizations, as it provides real-world suggestions on how to enhance physician employee satisfaction and retention. By knowing the most significant variables such as compensation, workload, lifestyle control, risk of infection, and work hours, healthcare organizations can formulate targeted strategies to increase job satisfaction. Happier physicians are more productive, provide high-quality patient care, and remain with their employers longer, reducing turnover and recruitment costs.

Secondly, the findings of the study can guide firms on how to craft competitive compensation packages and create healthy work environments that address the financial and non-financial aspects of job satisfaction. By spending on efforts that reduce administrative tasks, allow flexible schedules, and enhance infection control, health care companies can establish a healthy workplace culture. By doing this, not only does morale among employees rise but also the organization's reputation as an attractive company to work for. Ultimately, maximizing physician satisfaction can be linked to better patient outcomes, efficiency in operations, and overall business expansion in the competitive medical market.

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