Business Memo

To support strategic hiring decisions in this technology firm, an analysis examining salary variations among the sales technology representatives was conducted, aiming to pinpoint factors that contribute to these differences. With assistance from the IT department, a dataset from the company's data warehouse was obtained encompassing over 20,000 records of the sales staff.

The dataset includes various variables, namely product line assignments (software or hardware), age, gender, years of service, educational background, Myers-Briggs personality type, professional certifications, 360-degree evaluation scores, base salary, and NPS (Net Promoter Scores). Using JMP software, multiple analyses were performed, such as correlation analyses for numerical variables and ANOVA analyses for those calculations involving both numerical and categorical variables. These were performed in order to identify patterns and significant determinants associated with salary differences at the firm. This report presents key findings that can guide the human resources hiring processes and compensation strategies effectively.

Table 1. Correlation Analysis of Agents Salary and its Demographic Determinants

Factors	Correlation	*p*-value
Age (in years)	.264	< .0001
Tenure (in years)	.093	< .0001
Gender	- .163	< .0001
College	.210	< .0001

Note: for categorical variables Gender (categorized as females and males) and College (categorized as yes for those with college degrees and no for those without), numerical dummy variables were created where: 'female' was assigned values of 1 and 'male' of 0; for College, 'yes' was assigned value of 1 and 'no' of 0.

Insights about the different demographic factors influencing agents' salaries was conducted using correlation analysis tests. The results indicated that all demographic variables included in the tests (age in years, tenure in years, female or male gender, and college or no college degree) were statistically significant determinants of salary. All variables had *p*-values of < .0001. From Table 1, higher age, longer tenure and the possession of a college degree present positive correlations to salary, whereas gender presents negative correlation – meaning that being a female has a negative effect on salaries (females earn less than male counterparts).

The negative correlation effects of female employees and salary may indicate a potential pay gap that the company may desire to address to ensure equitable compensation. Further analyses should be conducted exploring any significant discrepancies in performance when related to gender, to assess if the cause behind gender-based salary differences are due to divergent performance levels between different gender agents or if they are the result of a problematic gender-based pay gap. In regard to the other demographic variables explored, the company might be driven to investigate a structured pay schema based on experience, tenure, and formal education, in order to potentially encourage new hires and retain existing employees, who will have a clear progressive path within the company.

Table 2. Average Salary of Tech Sales Representatives by Myers-Briggs Personality Types

Personality Type	Average Salary	Tukey HSD	
Explorer *(n=8200)*	$77,898.97	A	
Diplomat *(n=7849)*	$77,596.71	A	
Analyst *(n=2659)*	$62,993.98		B
Sentinel *(n=3282)*	$62,387.93		B

Note: Tukey Kramer HSD test was used for multiple comparisons and statistically significantly different groups were denoted with different letters (Explorer and Diplomat personality types resulted were not statistically significantly different and thus placed in group A; Analyst and Sentinel types similarly in group B).

Investigation of salaries for sales agents of different personality types according to Myers-Briggs was conducted using one-way analysis of variance (ANOVA) test. Results revealed a statistically significant *p*-value of < .0001. From Table 2, agents with Explorer and Diplomat personalities earned substantially more on average (about $15,000 extra) than Analysts and Sentinels. Through the Tukey-Kramer HSD test, results revealed that differences were only significantly divergent between Explorer and Diplomats when compared to Analyst and Sentinels.

These results might indicate that certain personality traits assimilated with Explorer and Diplomat personality types may lead to heightened performance in sales, such as personability or communication skills. Hiring managers should not focus on hiring solely these personality types considering diversity is crucial for perspective and diverging client needs. However, understanding different abilities and strengths that each personality type might bring to the workplace might be of assistance in delegating tasks and assigning roles and responsibilities that highlight the qualities of each employee. These factors might also be of assistance in developing dynamic teams and assigning project members, so that groups include individuals of multiple personality types for balance and task delegation.

Table 3. Correlation Analysis of Agents Salary and its Performance Determinants

Factors	Correlation	*p*-value
Certificates	.458	< .0001
Feedback	.313	< .0001
Net Promoter Score (NPS)	.550	< .0001

Note: the Certificates variable was measured in the number of certificates each employee possesses; Feedback encompassed a numerical value of the average score from the 360-degree annual evaluation for each employee; and NPS indicates the workplace quality score given by each employee to the company.

Analysis of salaries and the variables of certificates for each employee, feedback received in annual evaluations, and the NPS received for each worker was conducted through correlation analysis. All these variables displayed statistically significant effects on salary levels, presenting *p*-values of < .0001. Correlation was positive and moderately strong for all variables, as displayed in Table 3. Certificates and NPS showed the strongest relationships to salary.

This finding reveals that skills development through acquiring different certifications is a relevant factor for employees in receiving higher compensation. Just as college degrees in Table 1, education through additional certifications appears to be an important factor for the company's choice of rewarding employees. The Human Resources department at the firm might explore the possibility of creating structured incentives for employees to pursue continuous education and training programs. The highest-influencing variable being NPS showcases that high customer satisfaction is of very high importance for the company. Incentivizing high NPS scores by prompting excellent customer service might lead employees to align with the organizational mission and operational goals. The results of such efforts would likely reflect in NPS scores provided by each interaction between customer and employees through improved customer experiences and consequently reflect in salary growth for employees, who would in turn feel motivated to provide excellent customer service.

References

JMP®, Version *17*. SAS Institute Inc., Cary, NC, 1989–2024.