Learning Guide: Reporting Spearman’s Rank Correlation in APA Style

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The **Spearman's rank correlation** coefficient (often symbolized as *r*s) stands out as a crucial **non-parametric statistic** utilized to quantify both the strength and the direction of the monotonic relationship between two ranked variables. This method offers significant advantages over Pearson's correlation, primarily because it does not mandate that the data follows a normal distribution or that the relationship must be strictly linear. Consequently, Spearman's correlation is the preferred choice for analyzing data that is ordinal in nature or interval data that exhibits considerable skewness. Researchers commonly employ this technique to evaluate the consistency of rankings, such as comparing a test subject's ranked performance across two distinct measurement periods or academic subjects.

When disseminating empirical findings in scholarly publications, adherence to the rigorous standards established by the **American Psychological Association (APA)** is not merely recommended but mandatory. This structured approach guarantees uniformity, clarity, and the necessary professional rigor required for interpreting statistical results across the scientific community. The subsequent sections outline the precise template and mandatory formatting rules essential for reporting the results of a **Spearman's correlation** analysis in compliance with **APA format** (7th Edition).

Required Components for Reporting Spearman's Coefficient

A comprehensive report of any **correlation** analysis demands that the researcher explicitly state several key pieces of information. This includes identifying the specific statistical test performed, naming the variables under investigation, detailing the calculated correlation coefficient (*r*), providing the corresponding **degrees of freedom** (df), and indicating the statistical significance level (p-value). Presenting data in this standardized structure ensures that all essential quantitative details are available, facilitating accurate interpretation and potential replication by other researchers.

To effectively integrate these findings into the narrative of a results section, the statistical findings are typically summarized both in prose and using the standardized parenthetical notation. The prose describes the relationship (e.g., positive, negative, weak, strong), while the notation provides the numerical evidence. The template below serves as the foundation for constructing clear and compliant APA-style sentences when discussing Spearman's correlation results.

Spearman's rank correlation was computed to assess the relationship between and .

There was a correlation between the two variables, r(**df**) = , p = .

Adhering to APA Numerical Formatting Rules

To uphold the integrity and compliance mandated by the **APA format**, specific rules governing the presentation of numerical data--particularly concerning rounding and decimal places--must be rigorously followed when documenting statistical outputs. These guidelines are crucial for achieving uniformity across all published research, enabling readers to quickly and unambiguously interpret the meaning of the reported statistical findings.

Researchers must pay meticulous attention to the presentation of numerical values, especially regarding the use of the leading zero and the accurate calculation of **degrees of freedom** (df). Errors in these seemingly minor details can compromise the professional quality of the academic paper. The following rules summarize the critical formatting directives specific to reporting correlational analyses.

The **p-value** (probability value) must typically be rounded to three decimal places (e.g., .043). If the test yields an extremely small probability value, it should be reported using the inequality notation: $p < .001$.
The correlation coefficient value, *r*, must always be rounded to two decimal places (e.g., .48 or -.27). No more, no less.
A crucial APA rule is the requirement to drop the leading zero for both the **p-value** and *r* whenever the value cannot mathematically exceed 1.0 (e.g., use .77 instead of 0.77, or -.25 instead of -0.25).
The **degrees of freedom** (df) are reported parenthetically immediately following the symbol *r*. For Spearman's rank correlation, df is calculated using the formula N - 2, where N represents the total number of paired observations or subjects in the analysis.
All statistical symbols that represent variables or tests (e.g., *r*, *p*, *t*, *F*) must be italicized to differentiate them clearly from surrounding non-statistical text.

Reporting Example 1: Academic Achievement

Imagine a pedagogical study where an educator sought to determine whether a student's relative academic standing in mathematics was associated with their relative standing in science. To investigate this, data was compiled for the rank of math scores and the rank of science scores for a cohort of N = 30 students within a single class. This ordinal data structure makes the **Spearman's rank correlation** the most appropriate analytical tool.

The subsequent statistical analysis yielded a Spearman's correlation coefficient of 0.48 (reported as $r = .48$), which suggests a moderate, positive relationship between the two variables. The corresponding **p-value** was calculated as 0.043. The required **degrees of freedom** are determined by subtracting 2 from the sample size (30 - 2 = 28). Given that the p-value (.043) is below the conventional alpha significance level of .05, this correlation is deemed statistically significant.

When translating these findings into a formal report, it is vital to use the precise structure and

notation specified by APA guidelines. The write-up below clearly communicates the nature and significance of the observed relationship:

Spearman's rank correlation was computed to assess the relationship between students' rank in math scores and their rank in science scores.

There was a positive correlation between the two variables, $r(28) = .48$, $p = .043$.

Reporting Example 2: Analyzing Sports Performance

In a different context, a sports scientist initiated research to explore the relationship between two crucial performance indicators for professional basketball players: points scored and rebounds collected. The investigation involved collecting data on the rank of points scored versus the rank of rebounds collected for a substantial sample of N = 50 professional athletes over a full season.

The statistical output for this analysis showed a Spearman's correlation coefficient of -0.27 (reported as $r = -.27$), which implies a weak, inverse relationship--meaning players who ranked higher in points tended to rank slightly lower in rebounds, and vice versa. The associated **p-value** was 0.026. The **degrees of freedom** (df) for this larger sample are calculated as 50 - 2 = 48. Crucially, because the p-value (.026) falls below the standard .05 significance threshold, the observed inverse **correlation** is considered statistically significant, despite its weak magnitude.

The formal APA write-up below precisely conveys both the direction and the statistical magnitude of this relationship, providing a complete summary for the reader:

Spearman's rank correlation was computed to assess the relationship between the rank of points scored and the rank of rebounds collected among professional athletes.

There was a negative correlation between the two variables, $r(48) = -.27$, $p = .026$.

Reporting Example 3: Workplace Productivity and Hours

In a business context, a management team sought to determine if the ranking of total hours worked correlated positively with the ranking of overall productivity among its workforce. Data was systematically gathered for 25 employees (N = 25) to assess this potential link between input effort and output results.

The statistical analysis revealed a Spearman's rank correlation coefficient of 0.57 ($r = .57$), which points toward a moderate and positive association between the two factors. The corresponding **p-value** was 0.039. With a sample size of N=25, the calculation for the **degrees of freedom** is straightforward: 25 - 2 = 23. Since the resulting p-value is less than .05, this outcome is accepted

as statistically significant, suggesting that higher ranks in hours worked are associated with higher ranks in productivity.

Spearman's rank correlation was computed to assess the relationship between employees' rank of hours worked and their rank of overall productivity.

There was a positive correlation between the two variables, $r(23) = .57$, $p = .039$.

Additional Resources for Statistical Reporting Mastery

Achieving mastery in the accurate presentation of statistical results is a fundamental skill necessary for academic integrity and professional research clarity. The strict guidelines of **APA format** apply broadly across various analytical techniques. Researchers are encouraged to review tutorials and reference materials that explain how to report other common **statistical tests** and procedures accurately. Consistent application of these rules ensures that your research findings are interpreted correctly and contribute effectively to the body of knowledge.