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# UNL's Wiley Journal Downloads: 2014-2020

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UNL's Wiley Journal Downloads:

2014-2020

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**INTRODUCTION:**

**Wiley Journals (UNL)**

In the fall of 2021, the Collection Strategies Committee (CSC) turned its attention to the Wiley journal package. There were numerous issues with the compilation of the Wiley data, and the analysis below should be considered a best effort at identifying the titles that comprise the Wiley package and at analyzing title usage. (If there should prove to be errors of inclusion or exclusion, the manner in which data were collected and reported would, unfortunately, make it difficult correct any errors).[*] Those with an interest in some of the myriad of discrepancies and/or inconsistencies the spreadsheets presented are invited to see Appendix A for more information.

FINDINGS:

From the spreadsheets provided, the author would conclude the following:

- The package appears to have been comprised of a fairly consistent body of journals over the years
- Very few journals appear to have been dropped from the package but retained in the data reports over the interval (It is unknown how many journals were dropped from both the package and its data reports, if any)
- Double-digit numbers of journals have been added to the package each year
- The cumulative distribution of downloads each year closely approximates the Pareto or 80/20 distribution
- Journals that have been in the package all seven years tended to hold their positions in the usage-ranking quintiles from year to year (i.e., top journals tended to stay on top)
- There was some fluctuation in position between the bottom of the top (5th) quintile and top of the next (4th) quintile
- There were a few 'flash in the pan' journals that jumped briefly into the top tier group
- A portion of the titles added to the package over the years rather quickly joined the ranks of the top journals

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\* Note: The data analyzed are reporting period totals, the author believes, so they should provide combined tallies of both html and pdf accesses. The author is unaware of the internal rules Wiley employed in its data collection, but it is possible that some amount of double-counting may have occurred, especially pre-2019 before the adoption of the COUNTER 5 standards (e.g., accessing the html and pdf of a single article during a single session could be counted as two accesses) (Wood-Doughty, Bergstrom, & Steigerwald, 2019). However, pdf accesses were consistently considerably greater than html accesses, despite html's commonly being the 'landing' page for articles, so the author is inclined to conclude that substantial double counting is unlikely to have occurred.

# The Wiley Journal Package

## 1. The Package and Its Data

When the data were reviewed, the author found that the Wiley package for the entire interval was comprised of 2,096 journals, as identified by Wiley's proprietary journal identification codes (JICs). Over the seven years, these JICs had 14,672 potential data points for downloads. Of these, 13,358 (91%) reported data. Of the remainder, 708 cells (4.8%) appear to have had missing data because of journals having been added to the package over time, 11 (0.1%) appear to have missing data due to journals having been dropped from the package, and 595 (4.1%) appear to have missing data due to changes in COUNTER standards that require vendors and publishers not to report zero-use titles. This last applies to the 2019 and 2020 data only.

The first questions to address are: What has been the composition of the package over time, and how heavily has the package been used?

| TABLE 1: Journals (JICs) and Downloads by Reporting Year | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019[*] | 2020[*] |
| Journals | 1,889 | 1,913 | 1,944 | 2,007 | 2,048 | 1,776 | 1,781 |
| Downloads | 138,815 | 147,402 | 161,547 | 185,111 | 182,888 | 213,611 | 178,362 |
| Average | 73.5 | 77.1 | 83.1 | 92.2 | 89.3 | 120.3 | 100.1 |
| Min | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Max | 6,735 | 7,815 | 9,976 | 9,616 | 6,145 | 7,489 | 5,286 |
| St Dev | 271.5 | 307.6 | 363.7 | 369.7 | 281.9 | 365.6 | 278.2 |
| Note: Decimal values rounded; Standard deviation calculated for populations rather than samples. [*]2019 and 2020 data employ a COUNTER standard that require zero-use titles be omitted; parameters here should be understood to be for the reporting portion of the package only. | | | | | | | |

Again, the 2019 and 2020 data employed a more recently adopted COUNTER standard that requires zero-use titles be omitted.

Based on past behavior of the package, a straight-line projection would estimate that there would be 2,111 and 2,116 titles in the package in 2019 and 2020, respectively, with approximately 333 unreported zero-use titles (± 6 titles) each year. The collected data for 2019 suggest: 2 journals had been dropped several years before, 282 unreported zero-use titles, and 36 journals yet to be added in 2020. The data for 2020 suggest: the same 2 dropped journals and 313 unreported zero-use titles. The estimate and the reported data are fairly close, which suggests that the Wiley package, in terms of its journals, behaves fairly consistently.

Given this consistency in the composition of the package from year to year, a second question to address would be: To what extent do the data reports present the same package? To this end, Table 2 will report the overlap between the annual spreadsheets, as well as the running total of journals that appear to have been added and dropped over the intervals reported. Again, rather than employ titles, the author employed Wiley's proprietary journal identification codes (JICs) so that errors and title changes within the interval would not distort the tallies.

As can be seen from Table 2, the Wiley package presents a bit of a moving target. In most years, this has been due almost exclusively to titles having been added to the package, but in the final

two years, this was due both to titles having been added and to the vagaries of COUNTER standards.  This latter issue could easily be corrected via zero imputation of missing data.

| Table 2: Wiley Journal Lists Reconciliation: 2014-2020 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Start Year | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019[*] | 2020[*] | Total[**] |
| 2014 | JICs | 1,889 | 1,913 | 1,944 | 2,007 | 2,048 | 1,776 | 1,781 | 2096 |
| | Overlap | | 1,888 | 1,887 | 1,887 | 1,887 | 1,634 | 1,605 | 1,887 |
| Cum. | Added | | 25 | 57 | 120 | 161 | 142 | 176 | 207 |
| | Dropped | | 1 | 1 | 0 | 0 | 255 | 284 | 2 |
| * 2019 and 2020 data employ a COUNTER standard that does not report zero-use titles; Counts do not include zero-imputation estimates | | | | | | | | | |
| ** Based on zero-imputation estimate for years 2019 and 2020 | | | | | | | | | |

From the JIC data presented in Tables 1 and 2, the author would estimate that the package has been comprised of 1,889 journals (2014) to 2,094 journals (2020), which is a bit lower than the straight-line projection above.  Unfortunately, these estimates, when compared to the lists provided to David Macaulay by Wiley, far exceed Wiley's lists (see Appendix A).  The author is uncertain how to interpret this discrepancy.

A final question concerning the composition of the package would be:  What percentages of the journals that have comprised the package over the interval have reported data for what number of years?  As can be seen by the pie chart in Table 3, the bulk of the journals have reported data for all 7 years, but about 26% have missing data.  Slightly more than half of that missing data would appear to have been due to journals being added to the package over time, and slightly less than half would appear to be attributable to the recent change in COUNTER standards.

| Table 3:  Percentage of Journals with X Years of Data |
|---|
|  |
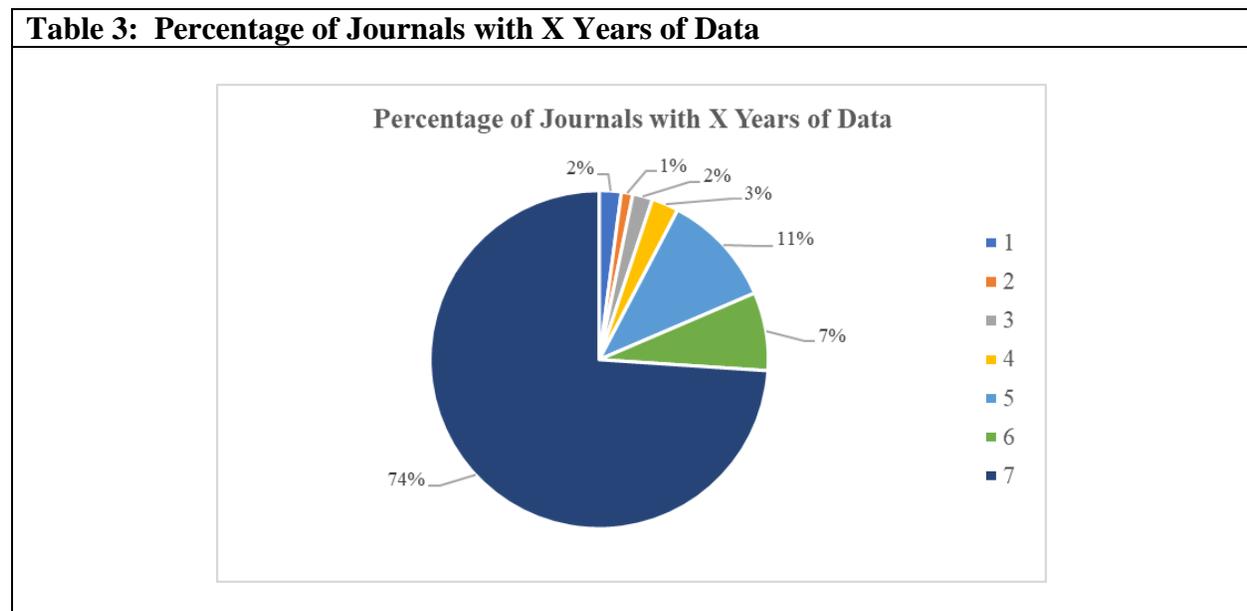
## 2. Download Distributions

The next point of interest for the Wiley package would be the distribution of downloads by journal. Did the Wiley package exhibit the sort of unequal distribution of downloads one would expect based upon library and information sciences' historical literature, or was the distribution of downloads more equal across the journals? If the latter, determining which journals to subscribe to and which to cut were the UNL Libraries to break up the package would become considerably more problematic.

**Table 4: Wiley 2014-2020: UNL Distribution of Total Downloads by Journal Quintile**



Wiley 2014-2020 Lorenz Curve:
UNL Distribution of Total Downloads by Journal Quintile
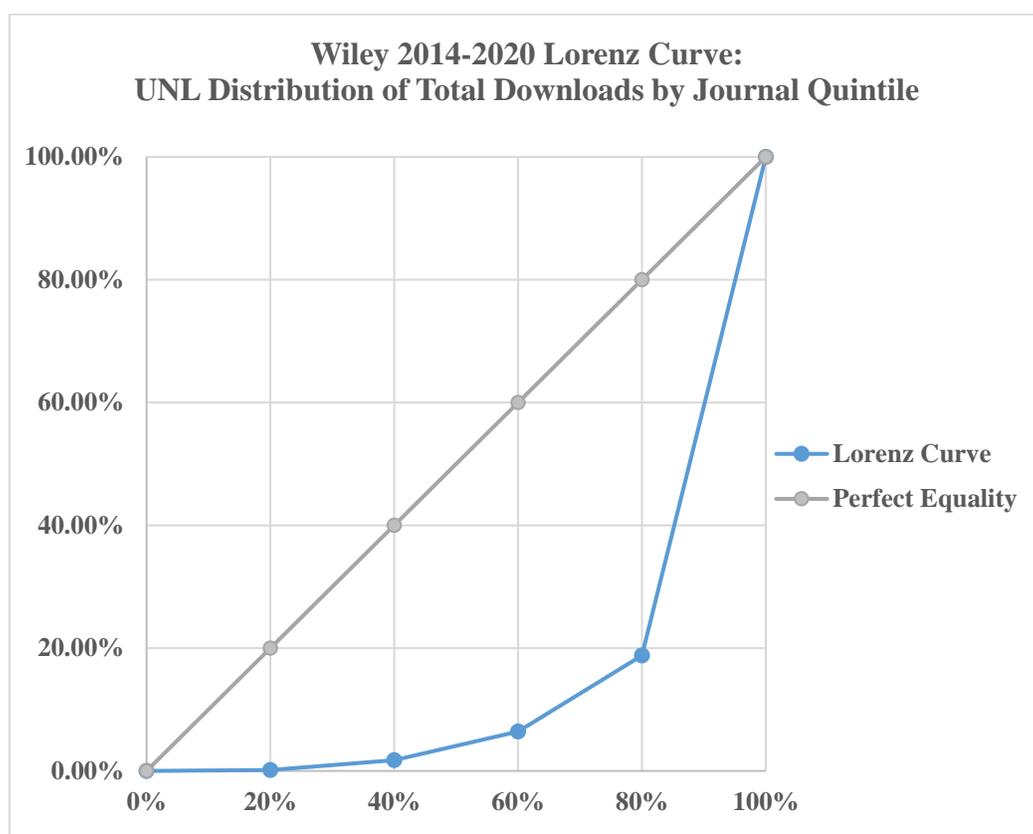
As can be seen from the figure in Table 4, the distribution of downloads for the 2014-2020 interval total can be displayed via a rough Lorenz (1905) curve, which is a widely used graphical representation of the distribution of resources (usually income or wealth) within a population or group. As can be seen by the figure, the total distribution for the interval approximates the common Pareto, or 80/20, distribution (Burrell, 1985; Trueswell, 1969). For much of the latter half of the twentieth century, this pattern in usage has frequently been used in library science to identify 'core' resources (Nisonger, 2008), and the same approach could at least in part be taken with the Wiley package, assuming the journals have consistent usage performances each year.

The distribution of total downloads across journal quintiles for UNL over the seven-year period was, as was noted, very unequal, with the top 20% of journals ($5^{th}$ quintile) accounting for a shade more than 80% of downloads (81.22%). To put the percentages in perspective: the download distribution for Wiley journals over the interval was such that just 420 of 2,096 journals accounted for 981,514 of 1,207,736 downloads. The next quintile ($4^{th}$) accounted for just 148,821. The next three quintiles (1,257 journals) produced just 77,401 downloads. In fact, the $1^{st}$ quintile over the seven-year interval produced just 2,002 downloads, a mere 4.8 downloads per journal and 0.7 per journal per year.

One could, of course, wonder whether this distribution of usage held true for every year in the interval. What is true for the whole may not necessarily be true for the parts (i.e., the fallacy of division), and there may have been some fluctuations in how the University drew content from Wiley's journals. However, as Table 5 below shows, whatever fluctuations there were were exceedingly minor. The concentration in usage for the top quintile fluctuated from 81.24% to 84.05% of usage. Thus, in no year did the concentration of usage become better than 80/20.

**Table 5: Wiley 2014-2020: UNL Distribution of Total Downloads by Journal Quintile by Year**



Wiley 2014-2020 Lorenz Curves: UNL Distribution of Downloads by Journal Quintile by Year
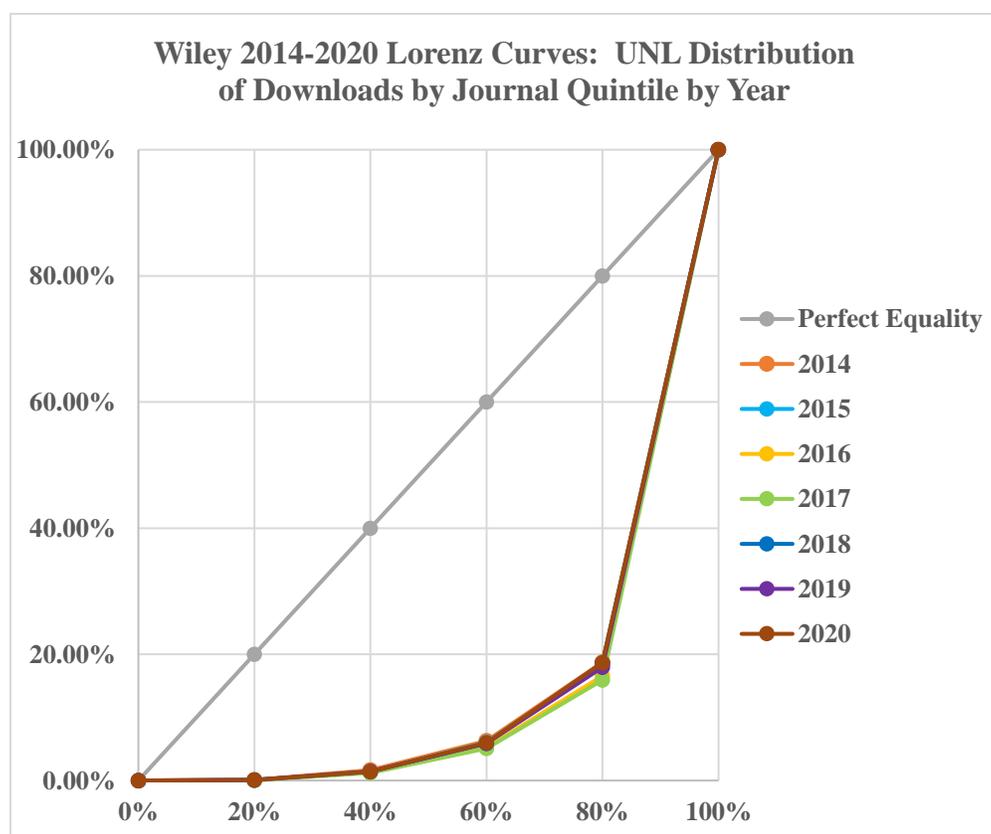
Thus, one can feel fairly safe in assuming that the distribution of downloads will be unequal and will persistently be about 80/20 for the $5^{th}$ quintile. The next quintile ($4^{th}$) should account for roughly 12% downloads. The remaining three quintiles (1,257 JICs) should consistently produce a mere sliver (less than 8%) of any year's downloads.

## 3. Consistency of Journal Usage Ranks

In order to make useful and accurate data-driven decisions about future subscriptions, the UNL Libraries need the data we analyze to be indicative of UNL patrons' actual preferences as expressed through consistent usage or lack of usage. For those interested, in economics this approach is aligned with Revealed Preference Theory (RPT), which aims to infer the preferences of individuals or institutions by observing and empirically analyzing real purchase or utilization habits (Samuelson, 1938, 1948). Hopefully, the Wiley data reveal that UNL has had solid preferences over the years, that is to say, top-performing journals in one year prove to be top journals in every year. If the data do not reveal consistently expressed preferences, then the UNL Libraries may have to treat vendor data as too statistically noisy to be useful.

In order to test whether the usage data could be usefully employed to determine which journals the UNL Libraries ought to subscribe to in the event that the Wiley journal package was broken up, the author employed the rank-ordered quintiles of the section above to look at the strength of the correlations between years. One could think of these quintiles (Q1-Q5) in much the same way that US economists and pollsters group citizens by socio-economic characteristics into classes (e.g., upper, upper-middle, middle, working, and lower).

Essentially, this section of analysis will be looking into whether the quintiles remain consistent and then look into whether the upper (Q5) class journals stay upper class across all years. If so, then the UNL Libraries will be able to comfortably conclude that a high-use journal in one year is likely to be a high-use journal in any year and should be subscribe to and the rest of the journals may be safely cut.

For the initial analysis, the technique employed will be Goodman and Kruskal's Gamma, which is a measure of rank correlations used for collapsed ordinal values, i.e., ordinal variables that have only a few values or scores. As with other measures of correlation, possible values range from negative one (–1), which indicates 100% negative association or perfect inversion, to one (+1), which indicates 100% positive association or perfect agreement. A value of zero (0), of course, indicates an absence of correlation (Goodman & Kruskal, 1954; Healey, 2009).

Because titles were added into the package over the years, which complicates the comparison of years, the author will analyze how well correlated were journals present in all seven years (n = 1,887). Added (207) and dropped (2) titles will be discussed separately.

As Table 6 shows, the journals' placement within the ranked quintiles has been very consistent. The between-year correlations over the interval have been extremely strong (Gamma range: .832-.948). For the 1,887 journals that have been available in the package for all seven years, the top journals (Q5) were the top journals, the bottom journals (Q1) were the bottom journals, and

the bulk of what little variability there was mostly appeared in the middle quintiles (review Appendix B for more information).  Of course, one point of potential concern is that, when looking over rows' correlation coefficients from left to right, it would appear that there has been a steady degradation in the strength of the correlations over time.  Another point of concern, not touched upon in Table 6 but evident in Appendix B, is that there have been a few journals that appeared in the top quintile briefly and then dropped out.  'Flash in the pan' journals, one might say.

| **Table 6: Goodman-Kruskal Gamma Coefficients:** **UNL Ranked-Group Wiley Journal Usage  (N = 1,887, p < 0.0005)** | | | | | | |
|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| 2014 | .922 | .900 | .898 | .873 | .851 | .832 |
| 2015 | | .933 | .927 | .914 | .888 | .871 |
| 2016 | | | .938 | .923 | .902 | .878 |
| 2017 | | | | .948 | .922 | .900 |
| 2018 | | | | | .940 | .924 |
| 2019 | | | | | | .945 |

As can be seen from Table 7, 'Flash in the pan' journals in the Wiley package do exist, but they do not seem to be much of an issue.  Over the interval, there were 574 journals who appeared in the top quintile (Q5) at least once.  Of those just over 40% appeared only in Q5, and just under 40% appeared in either Q5 or Q4.  One would suspect that some of this variability was produced by minor fluctuations in the download counts of journals present near the Q4-Q5 border.

**Table 7: Wiley Journal Top (Q5) Quintile Variability: Ranges and Frequencies (N = 574 and 4,018)**



| Quintile Ranges | % Journals | Quintile Values | % Value Frequency |
|---|---|---|---|
| Q5 | 41.5% | Q5 | 66.9% |
| Q5-Q4 | 39.5% | Q4 | 26.8% |
| Q5-Q3 | 13.2% | Q3 | 4.5% |
| Q5-Q2 | 3.5% | Q2 | 1.0% |
| Q5-Q1 | 2.3% | Q1 | 0.7% |
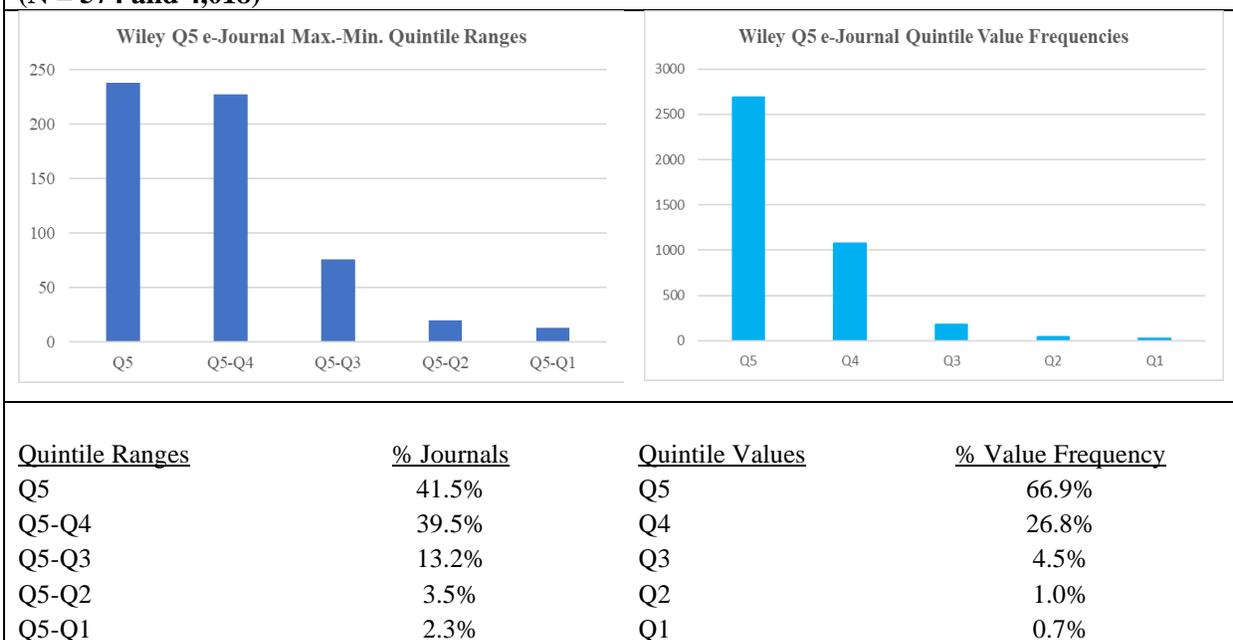
Of the remaining journals, 13% fluctuated between Q3 and Q5, and a mere handful could be classed as true 'flash in the pan' journals (i.e., having fluctuated between Q1 or Q2 and Q5). So, again, it would appear that the top Wiley journals for UNL have pretty consistently been the top journals each and every year.

While there has been little variability in the journals as a whole, one might still wonder just how stable and consistent the journals' quintile ranks have been. As one can see from the righthand side of Table 7, the answer would be 'very consistent.' The 574 JICs that have made an appearance in Q5 over the interval produced 4,018 rank valuations. Of these, 67% have been Q5. For the remaining 1/3 of the data, Q4 was reported nearly 27% of the time, and Q3-Q1 just over 6% of the time. In fact, Q1 comprised less than 1% of the reported values.

As was the case above, the reported Wiley download data suggest that the behavior of the journal package and its individual journals is very stable and consistent, and the UNL Libraries should feel fairly comfortable in drawing conclusions about the usage of the package and the journals. The one point of uncertainty, if the UNL Libraries were to break up the package and subscribe to the Q5 journals individually or as a smaller sub-package, would be whether also to subscribe to some of the top performing Q4 journals as well. It might we worth exploring whether the demand for Q1-Q3 and some Q4 journals could be met via other avenues.

The final item to address would be the 207 journals that were added into the package 2015-2020. Were any of the journals added over the interval journals that the UNL Libraries should have kept an eye on?

| Table 8: Wiley Journals: Quintile Ranks of Added Titles (N = 207 JICs, 741 Rankings) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Years | | | Rank Frequencies | | | | |
| Available | Q5 | Q4 | Q3 | Q2 | Q1 | Rankings | JICS |
| 6 | 41 | 14 | 16 | 12 | 67 | 150 | 25 |
| 5 | 15 | 24 | 36 | 29 | 56 | 160 | 32 |
| 4 | 30 | 24 | 20 | 58 | 120 | 252 | 63 |
| 3 | 4 | 13 | 11 | 27 | 68 | 123 | 41 |
| 2 | 6 | 1 | 2 | 9 | 2 | 20 | 10 |
| 1 | 7 | 6 | 5 | 13 | 5 | 36 | 36 |
| **Totals** | **103** | **82** | **90** | **148** | **318** | **741** | **207** |

As can be seen in Table 8, there were a number of journals among the 207 added that would have been of interest to the UNL Libraries. Wiley added 10 to 63 journals to the package, depending upon the year, and these journals produced 741 rankings. Of these, about 13.9% were Q5 rankings, and 11.1% were Q4 rankings. Of course, for the remainder, 75% of the rankings were in the Q1-Q3 range. Unfortunately, the added journals do not seem to be as consistent in their behavior as were the journals analyzed above. A number of journals appear to have begun their careers in the package as Q1-Q3 journals and then climbed quickly into the Q5 group. As a result, if the UNL Libraries were to attempt to break up the package, the Libraries would still have to continue to watch Wiley's offerings for new and acquired journals, give these titles 1-3 years to prove themselves, and then add a percentage of the new Wiley offerings to the UNL Libraries' Wiley subscriptions.

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Nisonger, T. E. (2008). The "80/20 rule" and core journals. *The Serials Librarian*, *55*(1-2), 62-84.

Samuelson, P. A. (1938).  A note on the pure theory of consumers' behaviour.  *Economica*. New Series. *5*(17): 61–71. doi:10.2307/2548836. JSTOR 2548836.

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Trueswell, R. L. (1969). Some Behavioral Patterns of Library Users: The 80/20 Rule. *Wilson Library Bulletin*, *43*(5), 458-461.

Wood-Doughty, A., Bergstrom, T., & Steigerwald, D. G. (2019). Do Download Reports Reliably Measure Journal Usage? Trusting the Fox to Count Your Hens?  *College & Research Libraries, 80*(5), 694-719.

**APPENDIX A**

NOTE ON THE JOURNAL LISTS:

Casey Hoeve and David Macaulay were able to draw COUNTER reports using then-current standards (COUNTER 4 [JR1] for 2014-2018 data and COUNTER 5 [JR3] for 2019-2020 data). Review of the spreadsheets discovered inconsistencies in the title lists, so David Macaulay requested title lists from Wiley (2016-2018). Unfortunately, these lists were inconsistent with the lists of titles comprising the COUNTER reports. As a result, the author had to merge the spreadsheets semi-manually using Wiley's proprietary journal identification codes (JIC).

| Appendix A: Table 1: Composition of the Wiley Spreadsheets: Titles and Journal ID Codes (JICs) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Years | | | |
| SOURCE | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019* | 2020* |
| Wiley | Titles | | | 1,482 | 1,465 | 1,490 | | |
| | JIC | | | 1,482 | 1,465 | 1,490 | | |
| JR1 | Titles | 2,356 | 2,387 | 2,427 | 2,510 | 2,554 | | |
| COUNTER | JIC | 1,889 | 1,913 | 1,944 | 2,007 | 2,048 | | |
| JR3 | Titles | | | | | | 1,902 | 1,817 |
| COUNTER | JIC | | | | | | 1,846 | 1,781 |
| * The COUNTER (5) standard employed requires zero-use journals not be reported. | | | | | | | | |

When attempting to merge the COUNTER spreadsheets, using Wiley's JICs instead of titles or ISSNs proved preferable because the codes appear to remain consistent through changes in titles, title variants, and title errors (e.g. *WorkingUSA*, *Working USA*, and the later title *Journal of Labor and Society* were coded WUSA throughout).

**Appendix B**

NOTE: VARIATION IN QUINTILE RANKINGS

An issue unaddressed by the summary table above (Table 6) is the exact distribution of the journals in the year-vs-year comparisons.  Those interested may consult this appendix, in which the year-vs-year data are presented as crosstabulations and as bar graphs showing agreement and disagreement between years.  This battery of tables and graphs shows that low-use, middling-use, and high-use titles tended to be fairly consistent in their behavior for the UNL Libraries and that the bulk of the variability in journals' quintile ranks tended to appear in the middle quintiles.
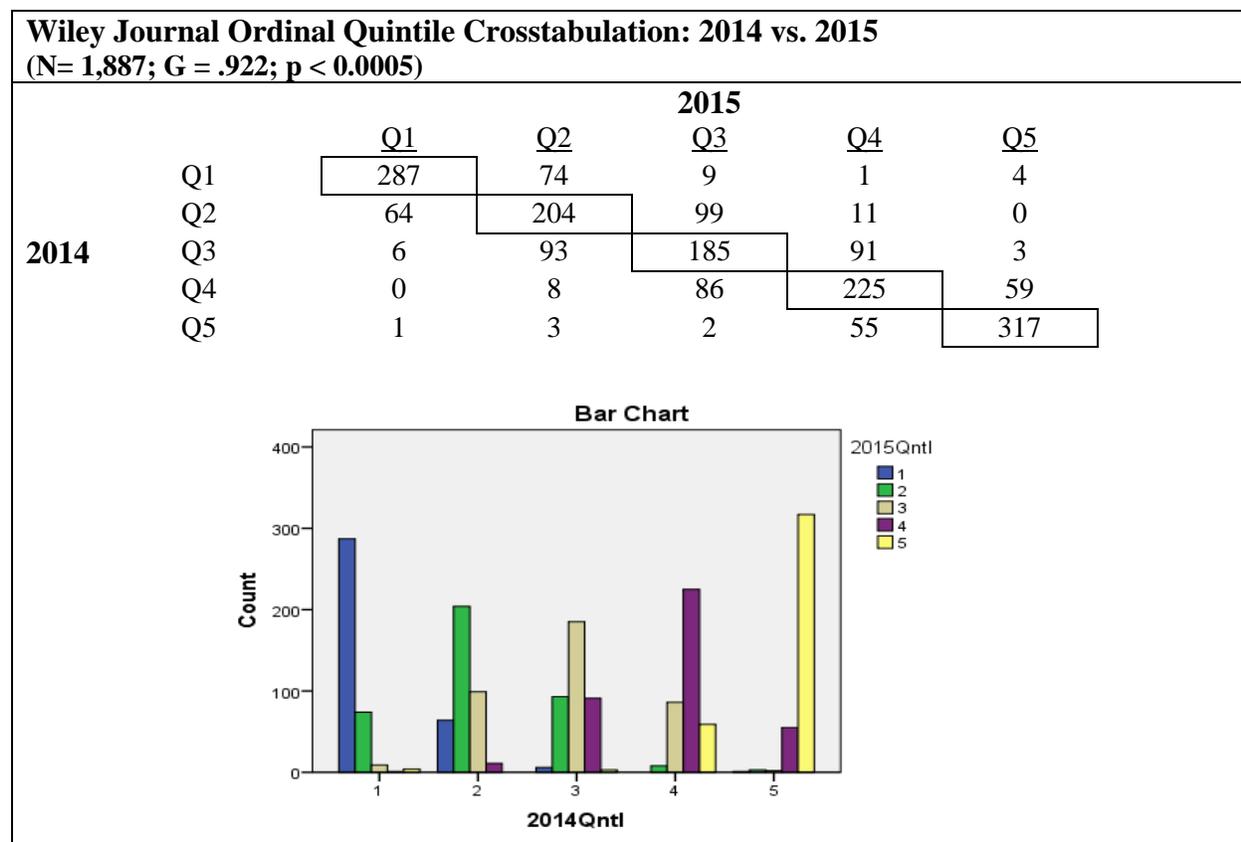
**Wiley Journal Ordinal Quintile Crosstabulation: 2014 vs. 2015**
**(N= 1,887; G = .922; p < 0.0005)**

| | | 2015 | | | | |
|---|---|---|---|---|---|---|
| | | Q1 | Q2 | Q3 | Q4 | Q5 |
| | Q1 | 287 | 74 | 9 | 1 | 4 |
| | Q2 | 64 | 204 | 99 | 11 | 0 |
| **2014** | Q3 | 6 | 93 | 185 | 91 | 3 |
| | Q4 | 0 | 8 | 86 | 225 | 59 |
| | Q5 | 1 | 3 | 2 | 55 | 317 |



In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2014 was a Q3 title in 2015).  Values outside the outlined cells tally the titles that strayed from the earlier year's positions.  The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2014 vs. 2016**
**(N= 1,887; G = .900; p < 0.0005)**

| 2014 | | 2016 | | | | |
|---|---|---|---|---|---|---|
| | | Q1 | Q2 | Q3 | Q4 | Q5 |
| | Q1 | 276 | 79 | 14 | 3 | 3 |
| | Q2 | 66 | 194 | 99 | 19 | 0 |
| | Q3 | 4 | 93 | 179 | 96 | 6 |
| | Q4 | 1 | 20 | 82 | 215 | 60 |
| | Q5 | 1 | 1 | 12 | 52 | 312 |

Bar Chart

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2014 was a Q3 title in 2016). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2014 vs. 2017**
**(N= 1,887; G = .898; p < 0.0005)**

|  |  | 2017 | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 248 | 102 | 18 | 4 | 3 |
|  | Q2 | 63 | 192 | 103 | 20 | 0 |
| **2014** | Q3 | 8 | 86 | 184 | 96 | 4 |
|  | Q4 | 1 | 12 | 75 | 220 | 70 |
|  | Q5 | 2 | 1 | 8 | 54 | 313 |



Bar Chart

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2014 was a Q3 title in 2017). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2014 vs. 2018**
**(N= 1,887; G = .873; p < 0.0005)**

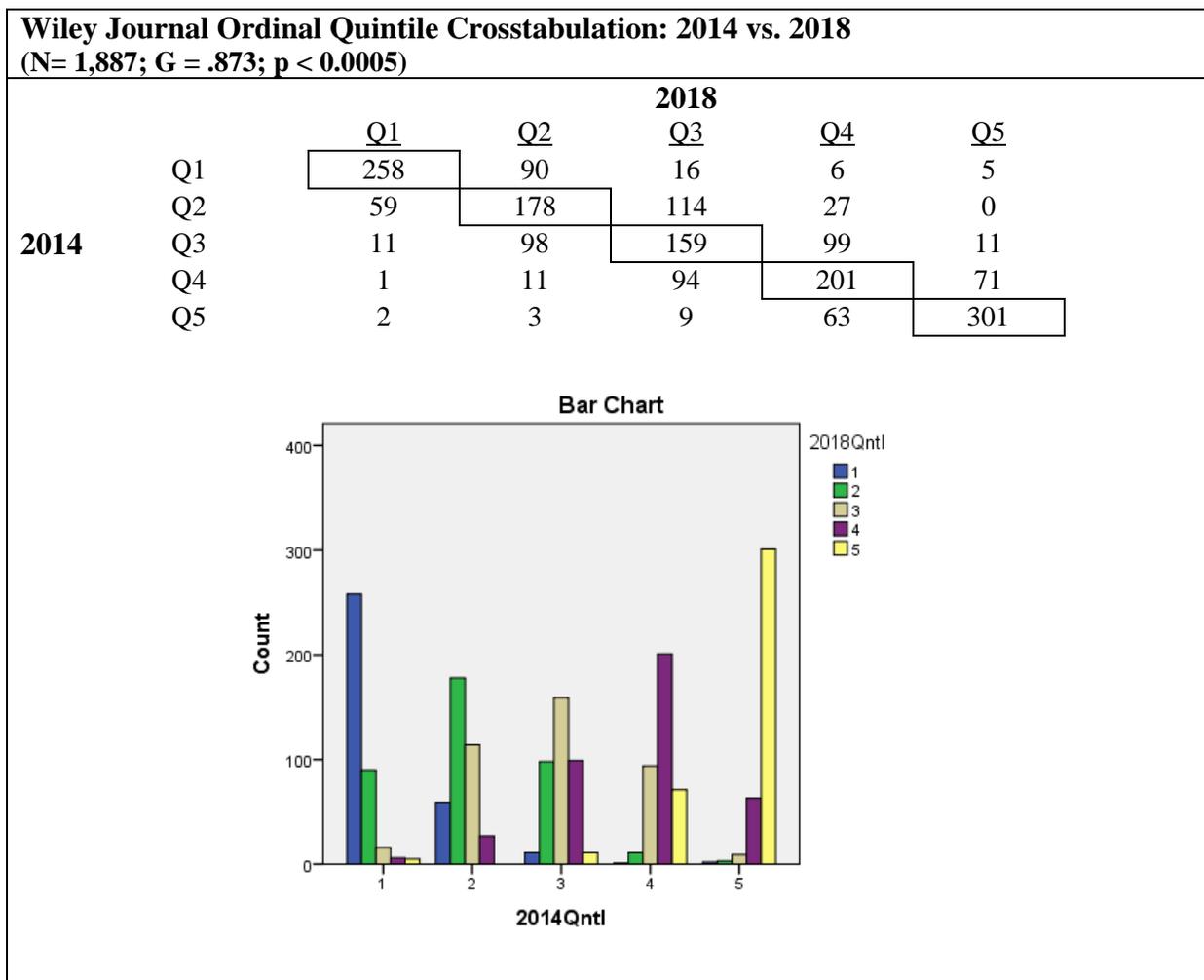|        |    | 2018 | | | | |
|--------|----|------|------|------|------|------|
|        |    | Q1   | Q2   | Q3   | Q4   | Q5   |
|        | Q1 | 258  | 90   | 16   | 6    | 5    |
|        | Q2 | 59   | 178  | 114  | 27   | 0    |
| **2014** | Q3 | 11   | 98   | 159  | 99   | 11   |
|        | Q4 | 1    | 11   | 94   | 201  | 71   |
|        | Q5 | 2    | 3    | 9    | 63   | 301  |

Bar Chart



In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2014 was a Q3 title in 2018). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2014 vs. 2019***
**(N= 1,887; G = .851; p < 0.0005)**

|  |  | 2019* | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 253 | 82 | 27 | 10 | 3 |
|  | Q2 | 80 | 170 | 102 | 25 | 1 |
| **2014** | Q3 | 18 | 94 | 165 | 90 | 11 |
|  | Q4 | 6 | 17 | 76 | 205 | 74 |
|  | Q5 | 2 | 6 | 11 | 60 | 299 |

**Bar Chart**



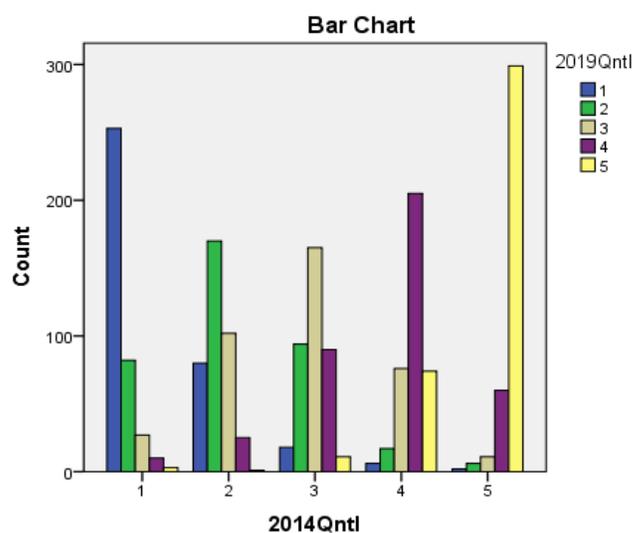* 2019 data employs zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2014 was a Q3 title in 2019). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2014 vs. 2020[*]**
**(N= 1,887; G = .832; p < 0.0005)**

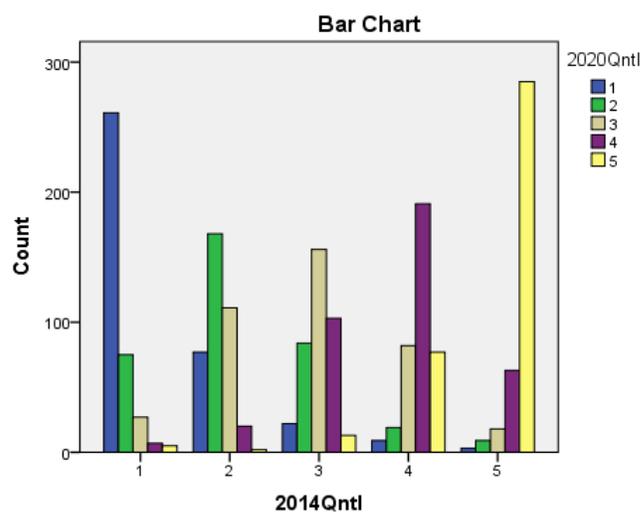| | | 2020[*] | | | | |
|---|---|---|---|---|---|---|
| | | Q1 | Q2 | Q3 | Q4 | Q5 |
| | Q1 | 261 | 75 | 27 | 7 | 5 |
| | Q2 | 77 | 168 | 111 | 20 | 2 |
| **2014** | Q3 | 22 | 84 | 156 | 103 | 13 |
| | Q4 | 9 | 19 | 82 | 191 | 77 |
| | Q5 | 3 | 9 | 18 | 63 | 285 |



Bar Chart

[*] 2020 data employs zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2014 was a Q3 title in 2020). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2015 vs. 2016**
**(N= 1,887; G = .933; p < 0.0005)**

|  |  | 2016 | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 277 | 74 | 7 | 0 | 0 |
|  | Q2 | 68 | 207 | 94 | 13 | 0 |
| **2015** | Q3 | 3 | 92 | 193 | 92 | 1 |
|  | Q4 | 0 | 14 | 89 | 218 | 62 |
|  | Q5 | 0 | 0 | 3 | 62 | 318 |



In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2015 was a Q3 title in 2016). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.
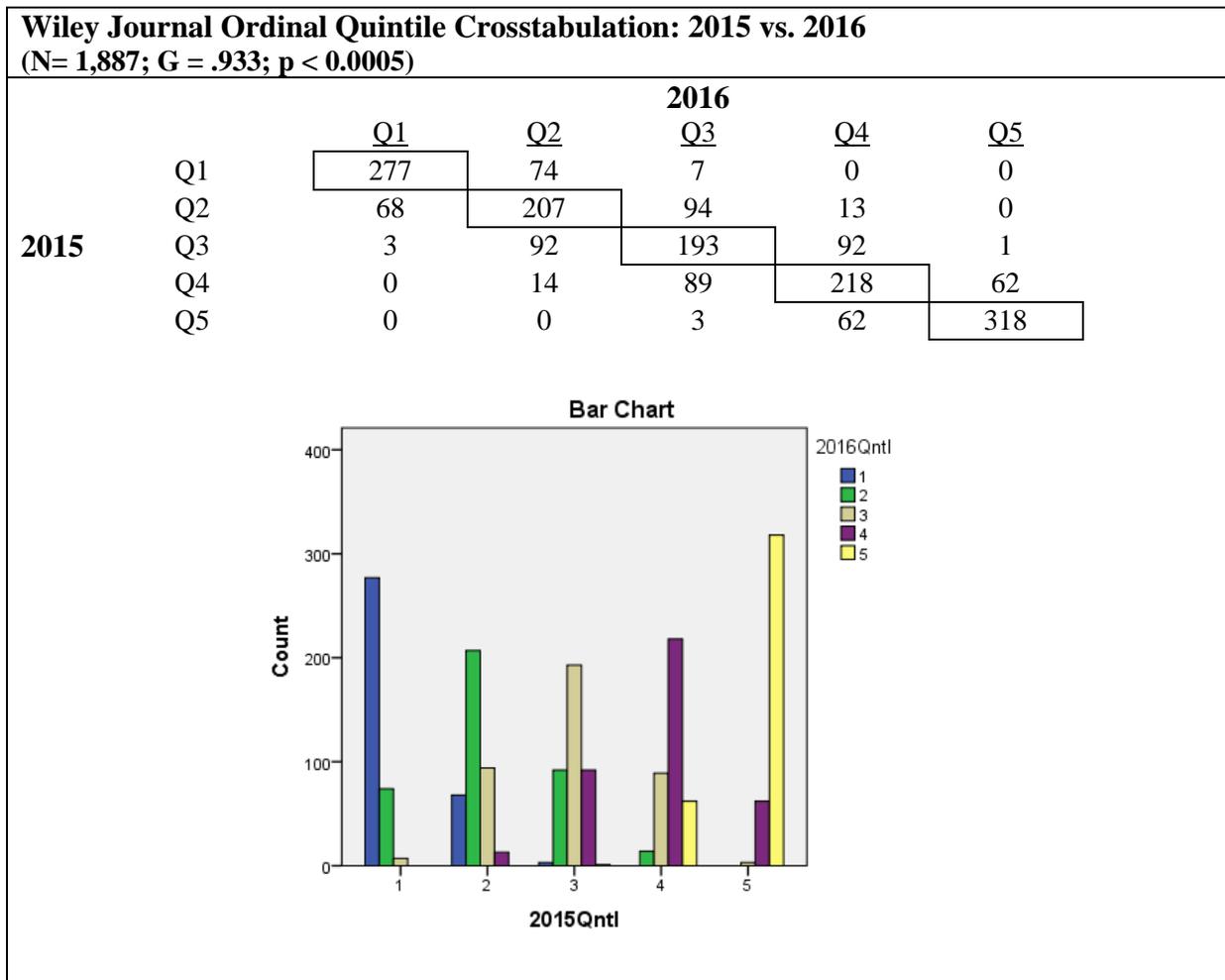
**Wiley Journal Ordinal Quintile Crosstabulation: 2015 vs. 2017**
**(N= 1,887; G = .927; p < 0.0005)**

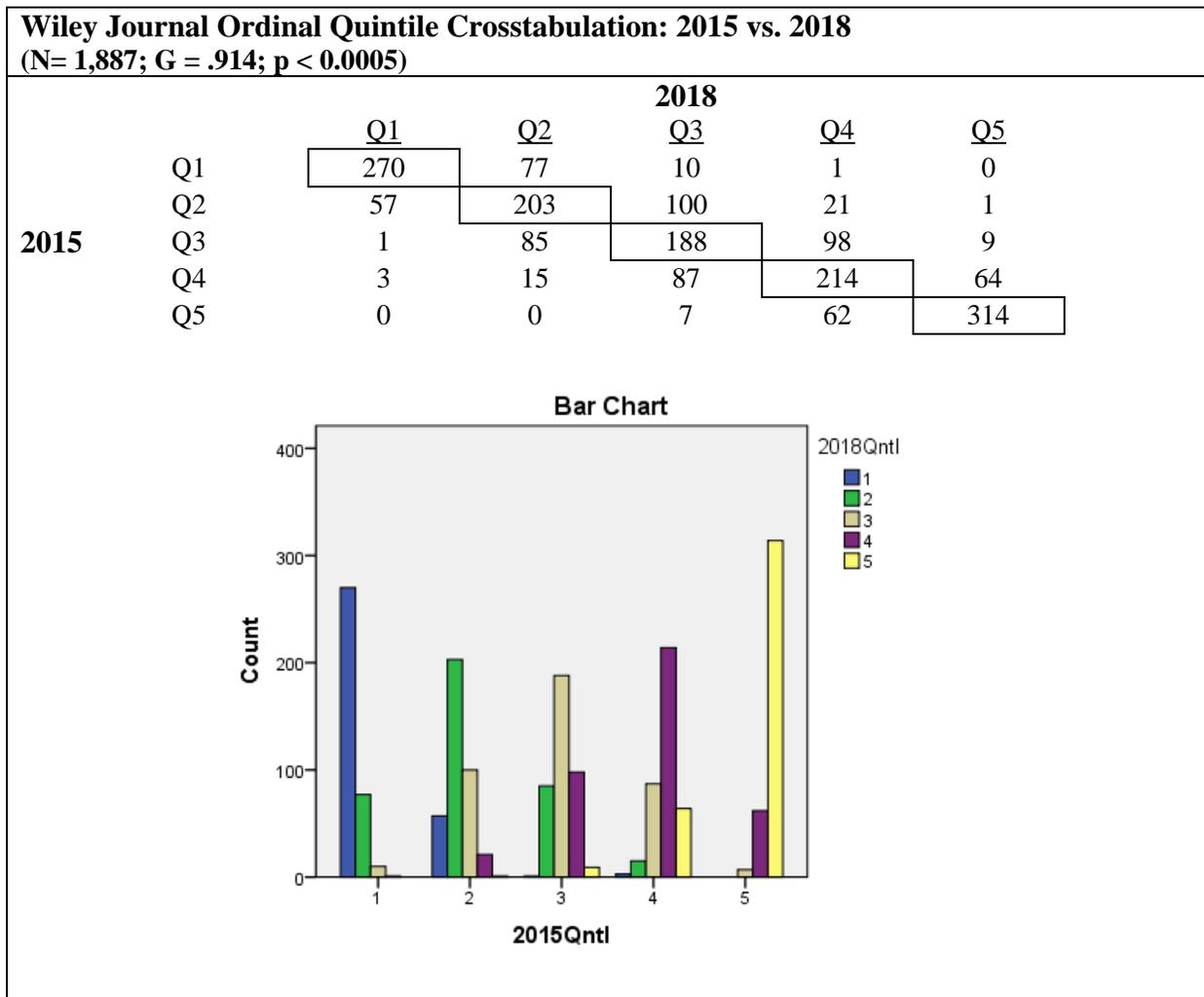|  |  | 2017 | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 263 | 91 | 3 | 1 | 0 |
|  | Q2 | 55 | 205 | 106 | 16 | 0 |
| **2015** | Q3 | 2 | 82 | 195 | 96 | 6 |
|  | Q4 | 2 | 14 | 80 | 225 | 62 |
|  | Q5 | 0 | 1 | 4 | 56 | 322 |



Bar Chart

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2015 was a Q3 title in 2017). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2015 vs. 2018**
**(N= 1,887; G = .914; p < 0.0005)**

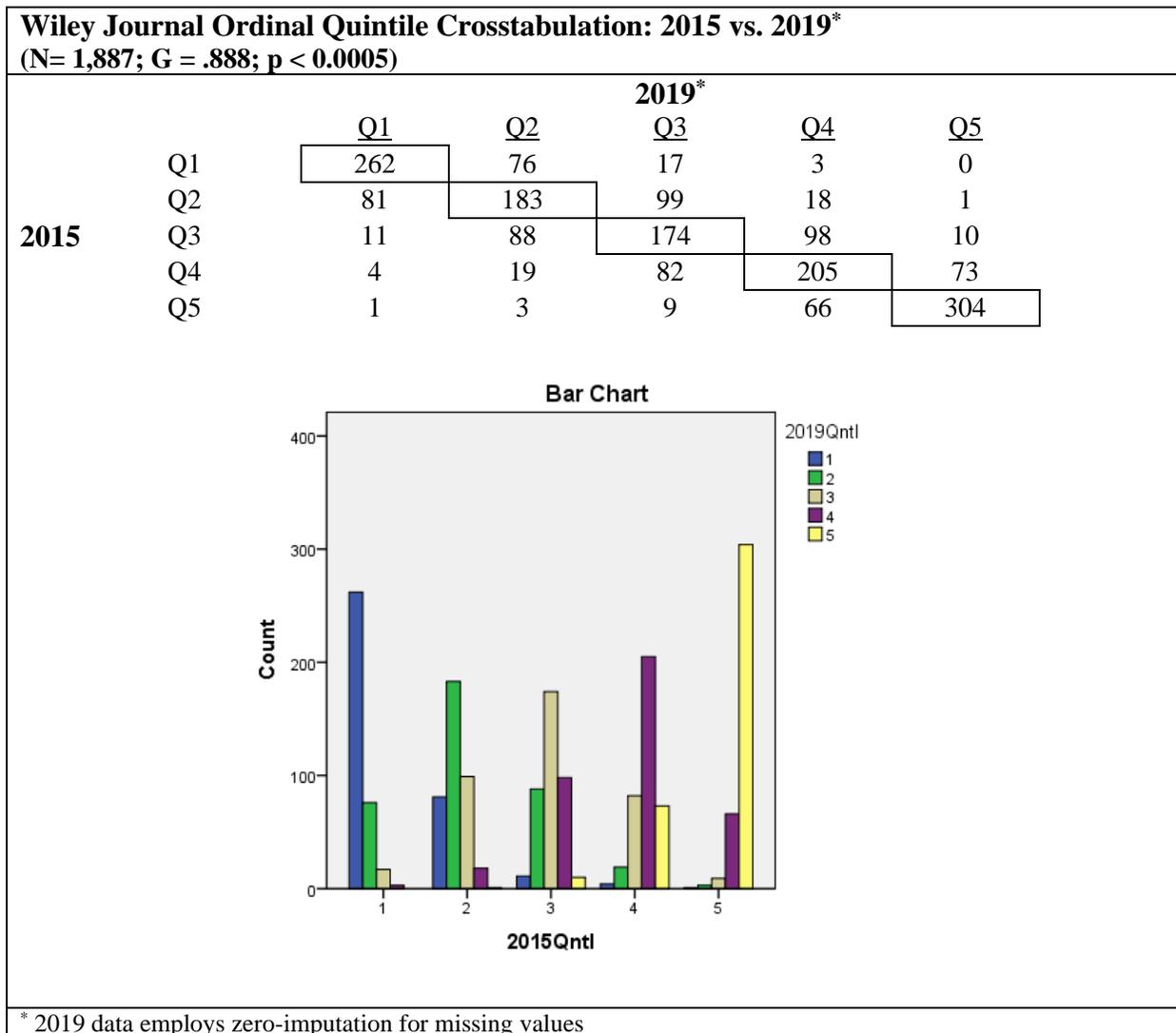| | | 2018 | | | | |
|---|---|---|---|---|---|---|
| | | Q1 | Q2 | Q3 | Q4 | Q5 |
| | Q1 | 270 | 77 | 10 | 1 | 0 |
| | Q2 | 57 | 203 | 100 | 21 | 1 |
| **2015** | Q3 | 1 | 85 | 188 | 98 | 9 |
| | Q4 | 3 | 15 | 87 | 214 | 64 |
| | Q5 | 0 | 0 | 7 | 62 | 314 |



Bar Chart

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2015 was a Q3 title in 2018). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2015 vs. 2019***
**(N= 1,887; G = .888; p < 0.0005)**

|  |  | 2019* | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 262 | 76 | 17 | 3 | 0 |
|  | Q2 | 81 | 183 | 99 | 18 | 1 |
| **2015** | Q3 | 11 | 88 | 174 | 98 | 10 |
|  | Q4 | 4 | 19 | 82 | 205 | 73 |
|  | Q5 | 1 | 3 | 9 | 66 | 304 |



Bar Chart

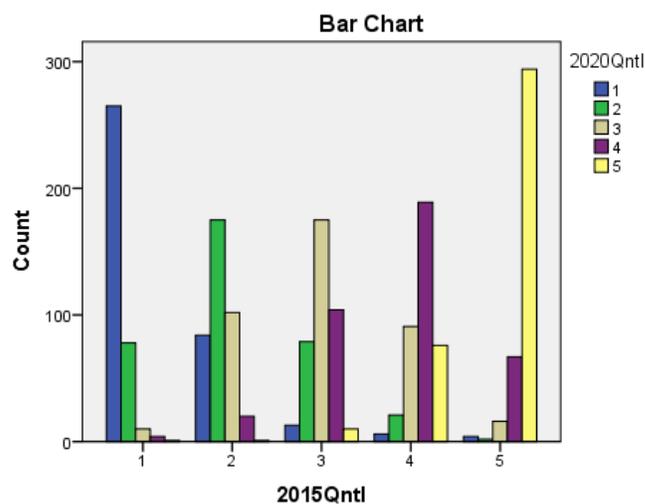* 2019 data employs zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2015 was a Q3 title in 2019). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2015 vs. 2020[*]**
**(N= 1,887; G = .871; p < 0.0005)**

|  |  | 2020[*] | | | | |
|---|---|---|---|---|---|---|
|  |  | <u>Q1</u> | <u>Q2</u> | <u>Q3</u> | <u>Q4</u> | <u>Q5</u> |
|  | Q1 | 265 | 78 | 10 | 4 | 1 |
|  | Q2 | 84 | 175 | 102 | 20 | 1 |
| **2015** | Q3 | 13 | 79 | 175 | 104 | 10 |
|  | Q4 | 6 | 21 | 91 | 189 | 76 |
|  | Q5 | 4 | 2 | 16 | 67 | 294 |



Bar Chart

[*] 2020 data employs zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2015 was a Q3 title in 2020). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.
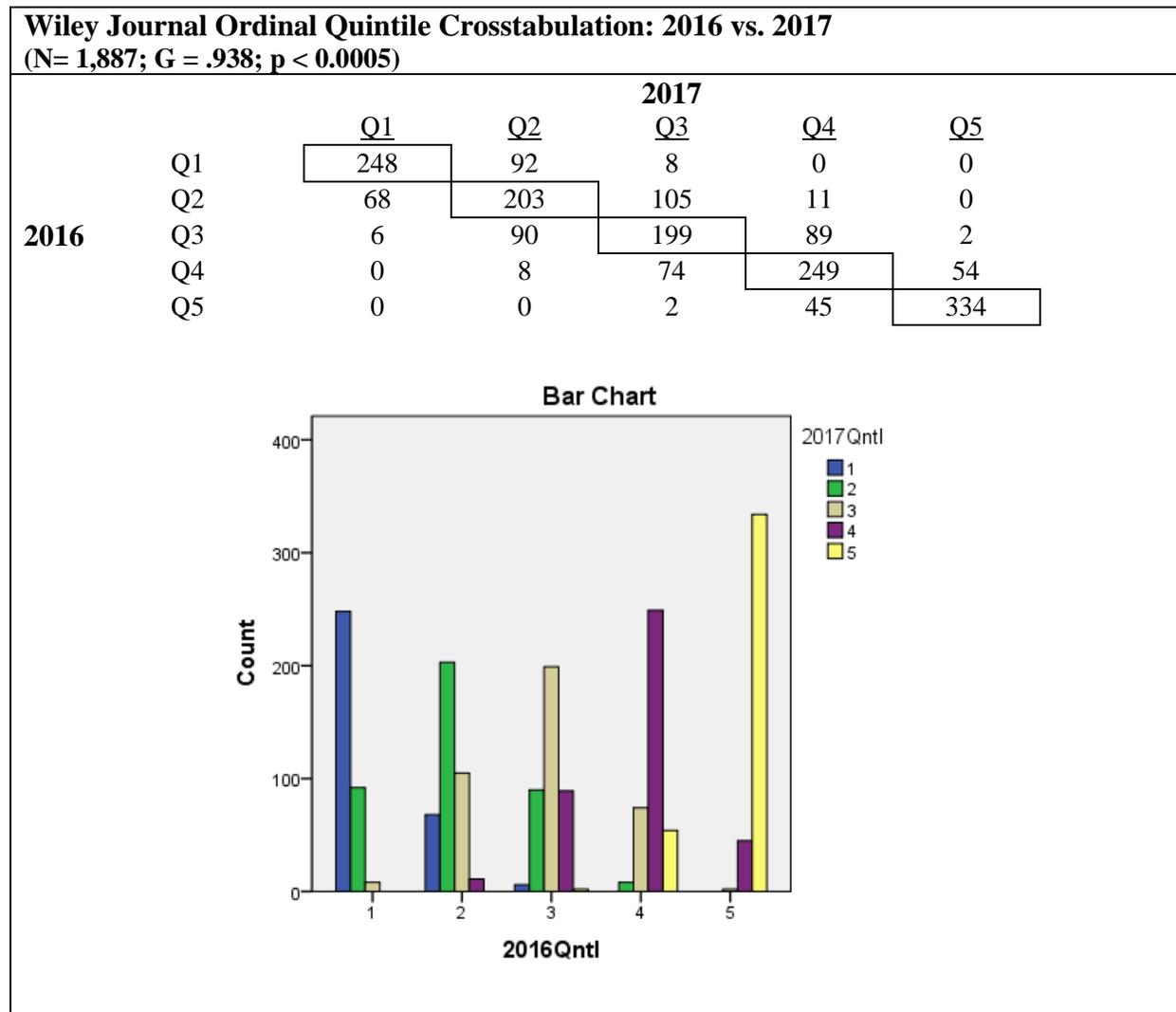
**Wiley Journal Ordinal Quintile Crosstabulation: 2016 vs. 2017**
**(N= 1,887; G = .938; p < 0.0005)**

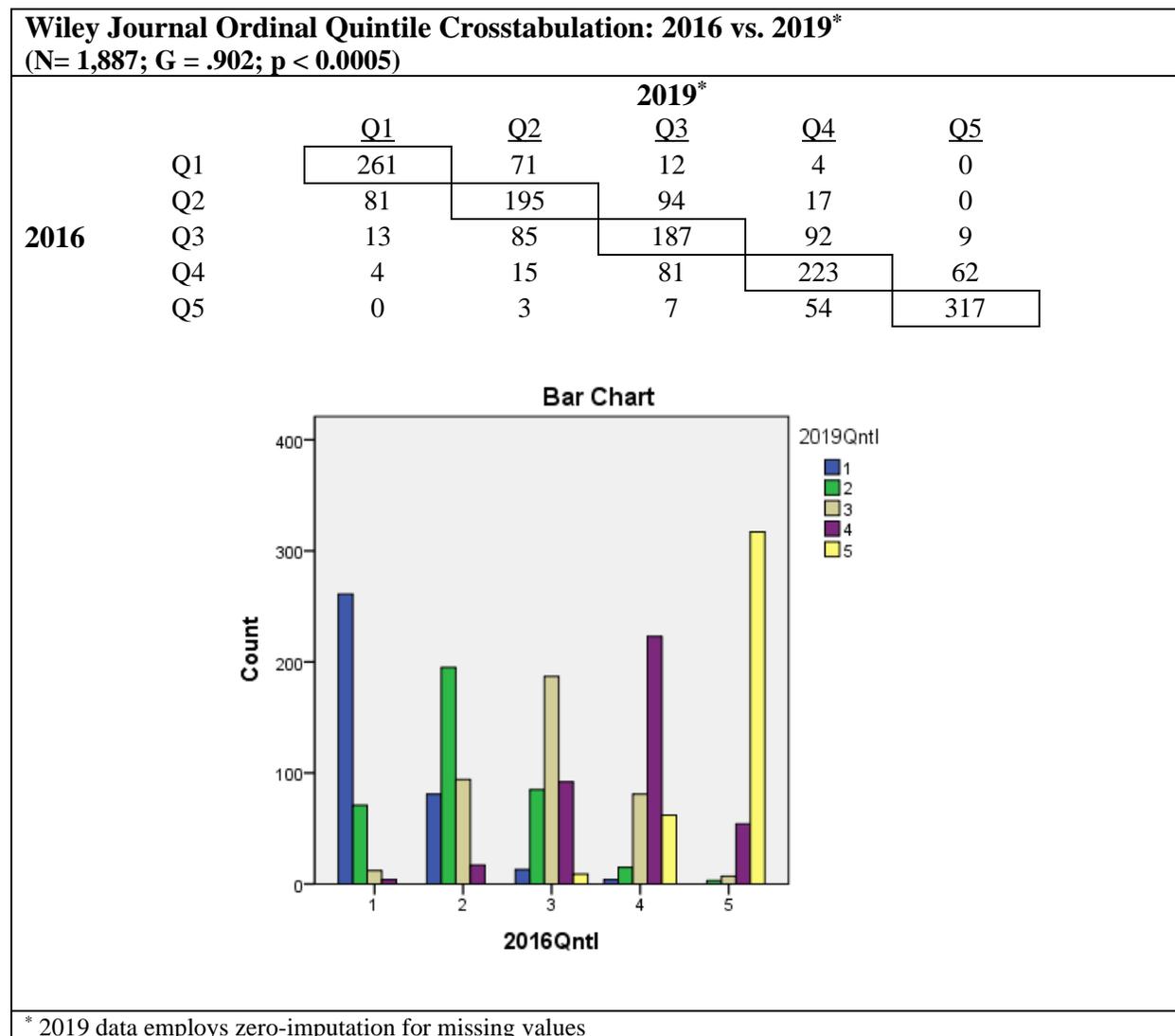| | | 2017 | | | | |
|---|---|---|---|---|---|---|
| | | Q1 | Q2 | Q3 | Q4 | Q5 |
| | Q1 | 248 | 92 | 8 | 0 | 0 |
| | Q2 | 68 | 203 | 105 | 11 | 0 |
| **2016** | Q3 | 6 | 90 | 199 | 89 | 2 |
| | Q4 | 0 | 8 | 74 | 249 | 54 |
| | Q5 | 0 | 0 | 2 | 45 | 334 |



In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2016 was a Q3 title in 2017). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2016 vs. 2018**
**(N= 1,887; G = .923; p < 0.0005)**

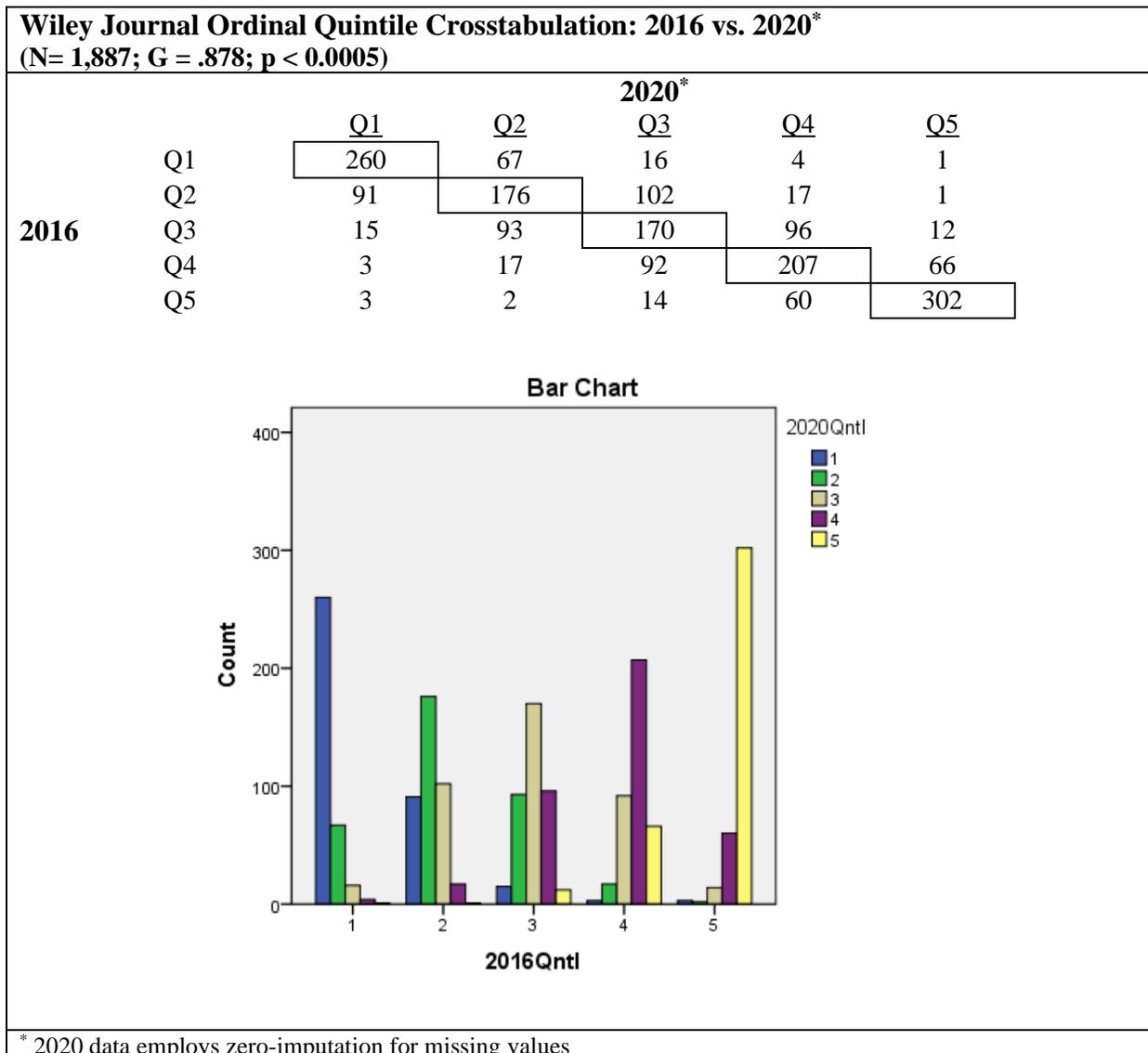|  |  | 2018 | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 263 | 80 | 4 | 1 | 0 |
|  | Q2 | 61 | 197 | 108 | 21 | 0 |
| **2016** | Q3 | 7 | 91 | 191 | 88 | 9 |
|  | Q4 | 0 | 11 | 85 | 235 | 54 |
|  | Q5 | 0 | 1 | 4 | 51 | 325 |



Bar Chart

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2016 was a Q3 title in 2018). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2016 vs. 2019[*]**
**(N= 1,887; G = .902; p < 0.0005)**

|  |  | 2019[*] | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 261 | 71 | 12 | 4 | 0 |
|  | Q2 | 81 | 195 | 94 | 17 | 0 |
| **2016** | Q3 | 13 | 85 | 187 | 92 | 9 |
|  | Q4 | 4 | 15 | 81 | 223 | 62 |
|  | Q5 | 0 | 3 | 7 | 54 | 317 |



Bar Chart

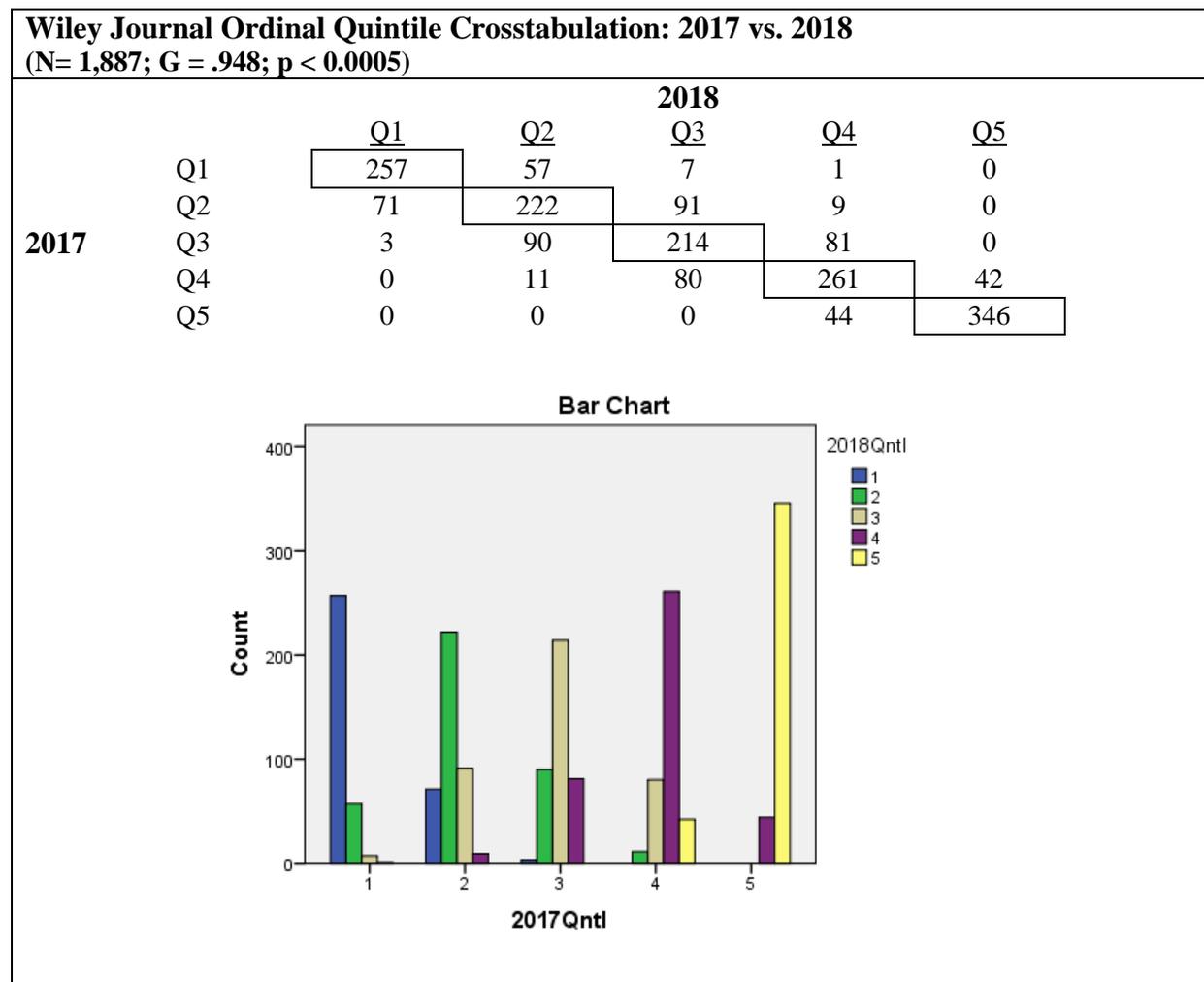[*] 2019 data employs zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2016 was a Q3 title in 2019). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2016 vs. 2020***
**(N= 1,887; G = .878; p < 0.0005)**

|  |  | **2020*** | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 260 | 67 | 16 | 4 | 1 |
|  | Q2 | 91 | 176 | 102 | 17 | 1 |
| **2016** | Q3 | 15 | 93 | 170 | 96 | 12 |
|  | Q4 | 3 | 17 | 92 | 207 | 66 |
|  | Q5 | 3 | 2 | 14 | 60 | 302 |

**Bar Chart**



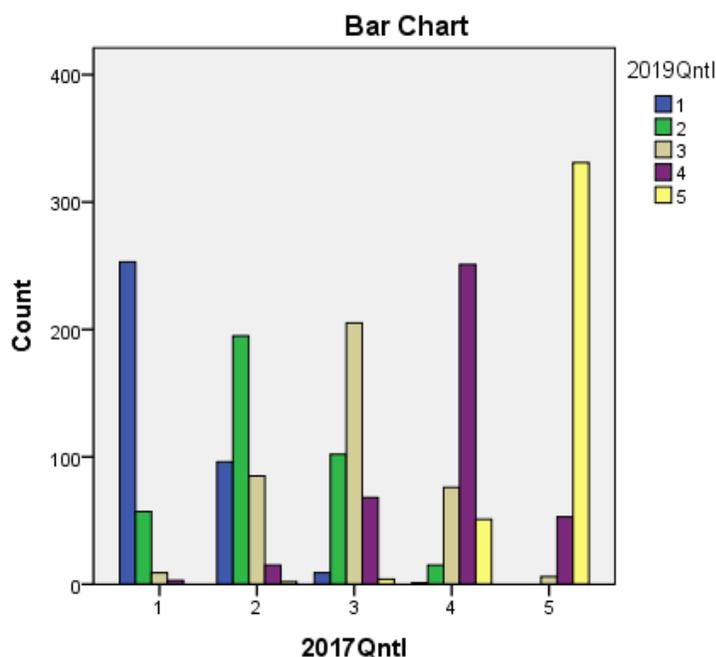* 2020 data employs zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2016 was a Q3 title in 2020). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2017 vs. 2018**
**(N= 1,887; G = .948; p < 0.0005)**

|  |  | 2018 | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 257 | 57 | 7 | 1 | 0 |
|  | Q2 | 71 | 222 | 91 | 9 | 0 |
| **2017** | Q3 | 3 | 90 | 214 | 81 | 0 |
|  | Q4 | 0 | 11 | 80 | 261 | 42 |
|  | Q5 | 0 | 0 | 0 | 44 | 346 |



Bar Chart

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2017 was a Q3 title in 2018). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2017 vs. 2019***
**(N= 1,887; G = .922; p < 0.0005)**

|  |  | **2019*** | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 253 | 57 | 9 | 3 | 0 |
|  | Q2 | 96 | 195 | 85 | 15 | 2 |
| **2017** | Q3 | 9 | 102 | 205 | 68 | 4 |
|  | Q4 | 1 | 15 | 76 | 251 | 51 |
|  | Q5 | 0 | 0 | 6 | 53 | 331 |



Bar Chart

* 2019 data employs zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2017 was a Q3 title in 2019). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2017 vs. 2020***
**(N= 1,887; G = .900; p < 0.0005)**

|  |  | 2020* | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 256 | 49 | 11 | 5 | 1 |
|  | Q2 | 100 | 186 | 94 | 11 | 2 |
| **2017** | Q3 | 12 | 101 | 187 | 83 | 5 |
|  | Q4 | 3 | 19 | 90 | 227 | 55 |
|  | Q5 | 1 | 0 | 12 | 58 | 319 |
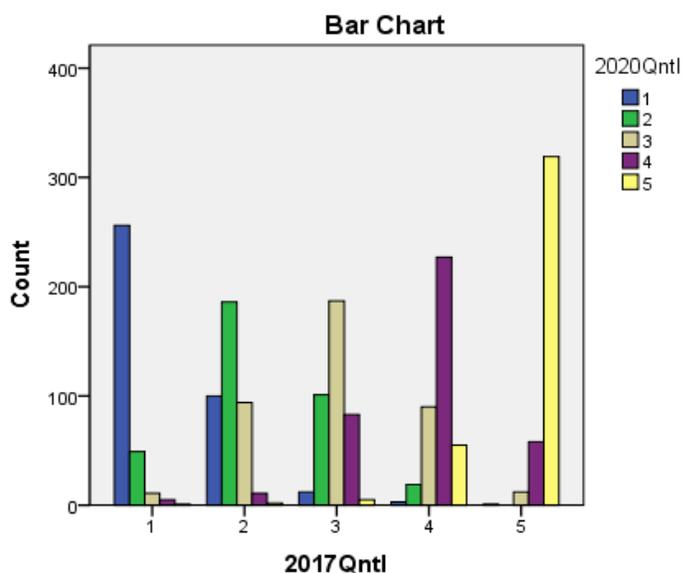


Bar Chart

* 2020 data employs zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2017 was a Q3 title in 2020).  Values outside the outlined cells tally the titles that strayed from the earlier year's positions.  The bar chart provides a visualization of the journals' movements from the earlier year's positions.

**Wiley Journal Ordinal Quintile Crosstabulation: 2018 vs. 2019[*]**
**(N= 1,887; G = .940; p < 0.0005)**

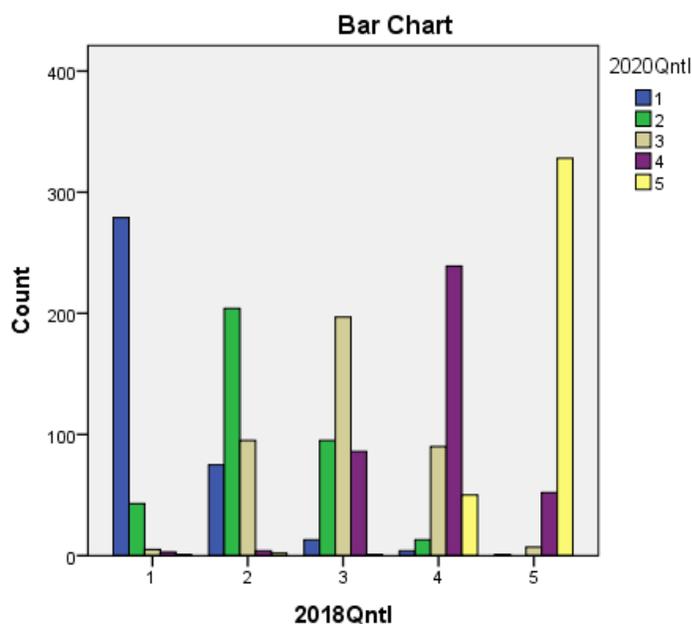|  |  | **2019[*]** | | | | |
|---|---|---|---|---|---|---|
|  |  | Q1 | Q2 | Q3 | Q4 | Q5 |
|  | Q1 | 272 | 53 | 5 | 1 | 0 |
|  | Q2 | 75 | 216 | 79 | 10 | 0 |
| **2018** | Q3 | 11 | 86 | 216 | 76 | 3 |
|  | Q4 | 1 | 14 | 78 | 256 | 47 |
|  | Q5 | 0 | 0 | 3 | 47 | 338 |
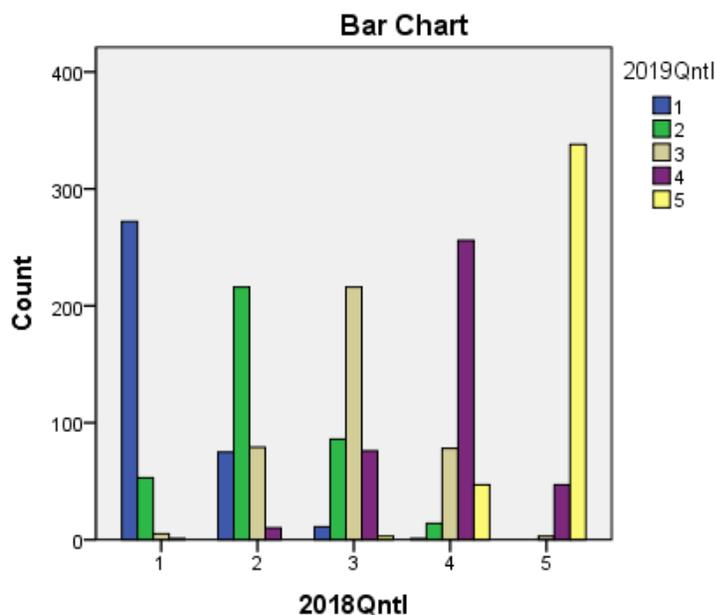


[*] 2019 data employs zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2018 was a Q3 title in 2019).  Values outside the outlined cells tally the titles that strayed from the earlier year's positions.  The bar chart provides a visualization of the journals' movements from the earlier year's positions.

| Wiley Journal Ordinal Quintile Crosstabulation: 2018 vs. 2020[*] | | | | | |
|---|---|---|---|---|---|
| **(N= 1,887; G = .924; p < 0.0005)** | | | | | |

| | | **2020[*]** | | | | |
|---|---|---|---|---|---|---|
| | | Q1 | Q2 | Q3 | Q4 | Q5 |
| | Q1 | 279 | 43 | 5 | 3 | 1 |
| | Q2 | 75 | 204 | 95 | 4 | 2 |
| **2018** | Q3 | 13 | 95 | 197 | 86 | 1 |
| | Q4 | 4 | 13 | 90 | 239 | 50 |
| | Q5 | 1 | 0 | 7 | 52 | 328 |



**Bar Chart**

[*] 2020 data employs zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2018 was a Q3 title in 2020). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.
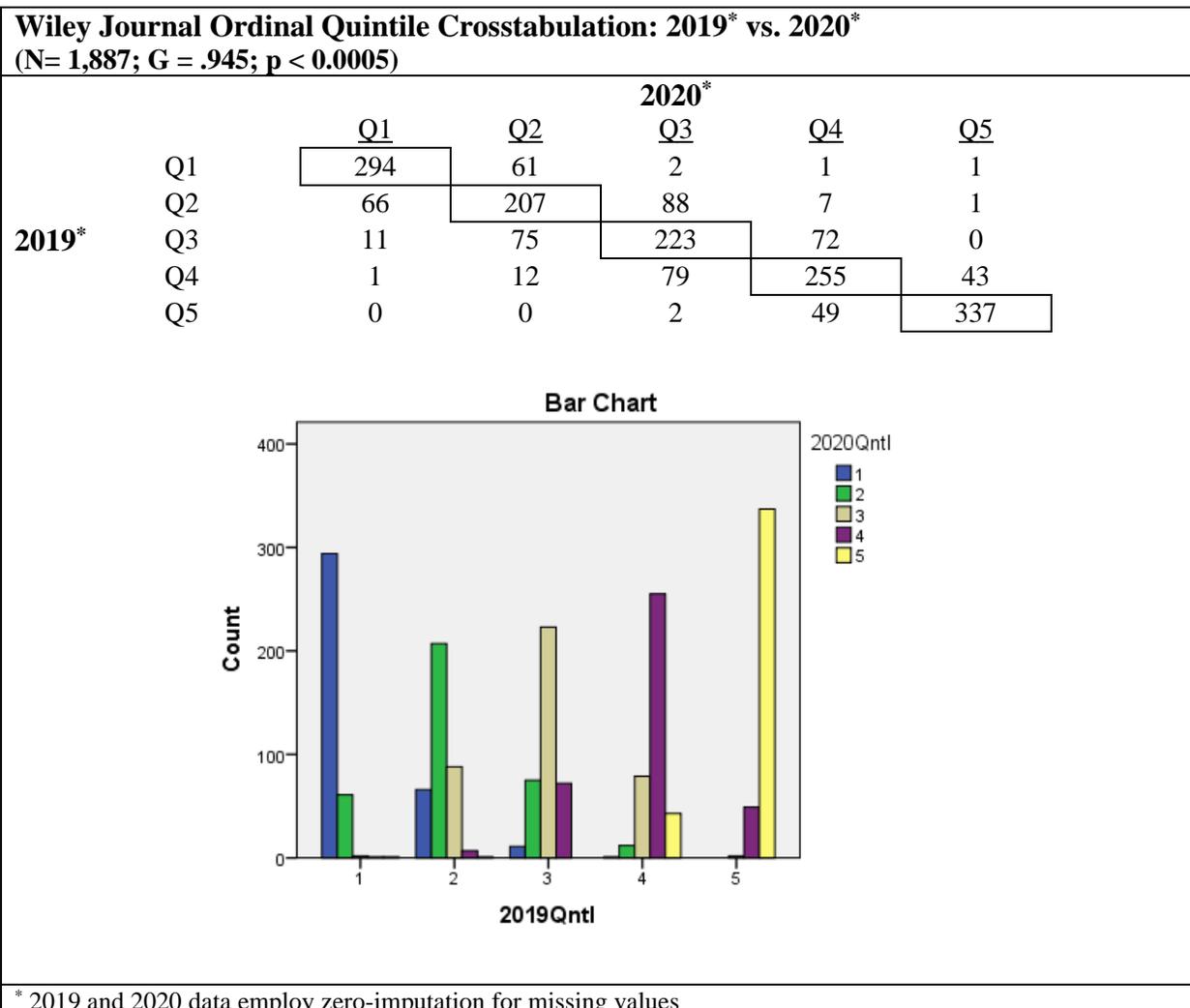
**Wiley Journal Ordinal Quintile Crosstabulation: 2019\* vs. 2020\***
**(N= 1,887; G = .945; p < 0.0005)**

| | | 2020\* | | | | |
|---|---|---|---|---|---|---|
| | | Q1 | Q2 | Q3 | Q4 | Q5 |
| | Q1 | 294 | 61 | 2 | 1 | 1 |
| | Q2 | 66 | 207 | 88 | 7 | 1 |
| **2019\*** | Q3 | 11 | 75 | 223 | 72 | 0 |
| | Q4 | 1 | 12 | 79 | 255 | 43 |
| | Q5 | 0 | 0 | 2 | 49 | 337 |



Bar Chart

\* 2019 and 2020 data employ zero-imputation for missing values

In reading the crosstabulations throughout this appendix, the reader should understand values in the outlined cells to indicate the number of titles whose positions remained constant from the earlier to the later year (i.e., a Q3 title in 2019 was a Q3 title in 2020). Values outside the outlined cells tally the titles that strayed from the earlier year's positions. The bar chart provides a visualization of the journals' movements from the earlier year's positions.