**RAStaff**

**Sample Only**

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**I. Basic Input Parameters (Constant between both scenarios)**

This User Guide describes the values that the user should enter on the Input worksheet to produce the Output results described in the Final Report. The assumptions behind the Input parameters are described in the Final Report.

Scenario One models the current situation at the University – high RA staff turnover and low productivity. Scenario Two models lower staff turnover and a faster learning curve*.*

To focus on the impact that changes in turnover and productivity have, the user should leave all other values for the input parameters constant between the two scenarios. In other words, for both scenarios, first enter the same numbers for the following input variables. (The user may freely change all yellow-coded cells on the Input worksheet to model other scenarios).

All research product parameters are expressed in quantity produced per year.

# Faculty Publications

* FacTenure: Enter number of faculty members by tenure level (assistant, associate and full professors).
* FacOutput: Enter number of research products (articles, books, field research projects and data analysis projects) each professor in each tenure level completes per year. So each assistant professor finishes 5 articles, 40% of a book, 3 field research projects, and 3 analysis sets a year.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Articles | Books | Field Research | Analysis |
| Assistants | 35 | 5 | 0.4 | 3 | 3 |
| Associates | 23 | 8 | 0.5 | 5 | 4 |
| Full Profs | 42 | 3 | 0.3 | 2 | 2 |

CtrCapacity: Enter here the percentage of annual faculty publications that are produced by central research services. In order words, percentage of annual publications that are not produced by the RAs. For example, 30% of the analytical data sets for faculty are produced by centralized statisticians, not RAs.

|  |  |  |  |
| --- | --- | --- | --- |
| Articles | Books | Field Research | Analysis |
| 20% | 10% | 10% | 30% |

Ideal RA Output: Enter here the number of research products that a fully trained and productive RA should produce per year. According to this scenario, an ideal RA should write half a book a year. This is the standard against which the productivity of actual RAs is judged. This productivity rate can differ from the FacOutput rate, as they are treated as independent in the model.

|  |  |  |  |
| --- | --- | --- | --- |
| Articles | Books | Field Research | Analysis |
| 6 | 0.5 | 2 | 4 |

Degree Allocation: Enter here the percentage of each RA skill type (articlewriters, bookwriters, field researchers, and data analysts) needed by educational degree. (Each category must sum to 100%). This is based on staff pyramids similar to consulting firms. For example, the salary / job description grid of the University says that of the RAs writing articles, 50% should have BA, 25% MBA, and 25% PhD degrees.

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| --- | --- | --- | --- | --- |
|  | Article-writers | Books | Field Research | Analysis |
| BA | 50% | 40% | 40% | 50% |
| MBA | 25% | 30% | 30% | 25% |
| PhD | 25% | 30% | 30% | 25% |

Quarterly Output Enter here the percentage of annual publications that faculty produce in each academic quarter. (University Q1 = July to August; Q2 = Sept to Dec, etc. ) (This must sum to 100%). For example, of the 8 articles that associate professors write each year, they will do 18% of the articles in the summer, 24% in the fall, etc. The first two quarters should be lower due to vacation and University holiday periods.

|  |  |  |  |
| --- | --- | --- | --- |
| Q1 | Q2 | Q3 | Q4 |
| 18% | 24% | 29% | 29% |

Starting Staff Table: Enter here the number of previously hired RAs for each degree and skill type who are on staff at the start of Year 1 of the model. (For example, if Year 1 starts on July 1, 2003, then these would be the RAs hired in July 2001 and July 2002 who are still with the University. The user shouldn’t include the RAs from those hiring dates who have already left). These RAs are divided into those who started one and two years ago due to their different productivity and turnover rates).

|  |  |  |
| --- | --- | --- |
| StartingStaff | RAOnStaff2YearsAgo | RAOnStaff1YearAgo |
| BA Articlewriters | 2 | 4 |
| MBA Articlewriters | 1 | 2 |
| PhD Articlewriters | 2 | 3 |
| BA Bookwriters | 1 | 2 |
| MBA Bookwriters | 0 | 1 |
| PhD Bookwriters | 2 | 2 |
| BA Field Researchers | 1 | 2 |
| MBA Field Researchers | 0 | 1 |
| PhD Field Researchers | 2 | 2 |
| BA Analysts | 2 | 4 |
| MBA Analysts | 1 | 2 |
| PhD Analysts | 2 | 3 |

Salary Table: Enter here the annual gross salary each RA receives according to educational degree. This is the amount charged directly to faculty research budgets for each RA on staff.

|  |  |
| --- | --- |
|  | AnnualSalaryAnalysis |
| BASalary | $20,000 |
| MBASalary | $30,000 |
| PhDSalary | $40,000 |

Benefits: Enter the cost of the employee benefits (health insurance, vacation) that all RAs receive as a straight percentage of their annual salary. This amount is paid for by University administration, not by faculty.

|  |  |
| --- | --- |
| Benefits | 23% |

Training Cost Analysis: Enter the cost of start-up training received by new RAs in their first quarter. The training is specific to product type. This amount is paid for by University administration, not by faculty.

|  |  |
| --- | --- |
|  | TrainingCostAnalysis |
| Articlewriter | $300 |
| Bookwriter | $100 |
| Field Researcher | $150 |
| Analyst | $150 |

Hiring Cost Analysis: Enter here the percentage of new RAs recruited by human resources department vs. directly by faculty (which must sum to 100%) and the associated overhead cost (in HR staff time) per new RA. This amount is paid for by University administration, not by faculty.

|  |  |  |
| --- | --- | --- |
| RecruitingAnalysis | RecruitmentPercent | RecruitmentCostPerRA |
| HumanResource | 60% | $500 |
| Faculty | 40% | $200 |

Space Analysis: Enter here the percentage of all RAs on payroll who will be assigned an office space in the University vs. RAs who will be working from home or dormitory (which must sum to 100%) and the associated overhead cost of allocated office space. This amount is paid for by University administration, not by faculty.

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| --- | --- | --- |
| SpaceAnalysis | OfficeSpaceAllocation | OfficeSpaceCost |
| Available | 66% | $750 |
| NotAvailable | 34% | $200 |

PercentHire Parameter: This parameter gives the user the flexibility to reduce the number of new RAs hired to less than the number needed if the associated costs exceed the annual University budget. This is a quicker way to conduct sensitivity analysis than changing all the other input paramaters. 100% here means that you hire all the RAs that the model says you need, which for simplicity’s sake we will do for the scenario testing.

|  |  |
| --- | --- |
| PercentHire | 100% |

### III. Scenario Testing (Input Streams)

Turnover Analysis: On “Input” worksheet, enter here the percentage of new RAs (for each degree and product type) expected to leave the University after completing one, two, or three years in that position. (Each type should sum to 100%). From Scenario I to Scenario II, the number of RAs leaving within the first year decreases (improved turnover). For example, in Scenario I, of all new BA articlewriters hired during the course of the model, 50% are expected to leave by the end of their first year; 30% by the end of their second year; and the remaining 20% after their third year, so that none will be left four years after the original hire date.

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| --- | --- | --- | --- | --- | --- | --- |
|  | Scenario I | | | Scenario II | | |
| Turnover Analysis | RALeavYr1 | RALeav Yr2 | RALeav Yr3 | RALeavYr1 | RALeav Yr2 | RALeav Yr3 |
| BA Article | 50% | 30% | 20% | 20% | 60% | 20% |
| MBA Article | 70 | 25 | 5 | 30 | 40 | 30 |
| PhD Article | 40 | 30 | 30 | 30 | 40 | 30 |
| BA Book | 40 | 30 | 30 | 25 | 50 | 25 |
| MBA Book | 60 | 25 | 15 | 30 | 40 | 30 |
| PHD Book | 35% | 35% | 30% | 25% | 40% | 35% |

For simplicity’s sake, use same values for analysts as for articlewriters, and same values for field researchers and book writers. (Analysts and articlewriters have similar profiles, as each type of product can be completed in a shorter time than a book or field research project, so the RAs there tend to get more satisfaction quickly and learn faster, so may tend to leave faster.)

Productivity Table:

Enter here the percentage of the ideal RA product output that new RAs can produce. This should increase periodically each quarter as they move up the learning curve. (For simplicity’s sake, use same values for analysts as for articlewriters, and same values for field researchers and book writers.)

(From Scenario I to Scenario II, the speed with which RAs move up the learning curve increases, in other words, they achieve 100% ideal productivity one quarter sooner than in Scenario II). For example, under Scenario I, if under IdealRAOutput we have said that an ideal RA produces 6 articles a year, then 25% on the productivity table for BA level articlewriters would mean they write 1.5 articles a year and 100% the full 6 articles. Higher degree degree level RAs should achieve 100% more quickly, and reaching 100% on longer-term projects such as books should take more time for all RA levels.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ScenI | Y1Q1 | Y1Q2 | Y1Q3 | Y1Q4 | Y2Q1 | Y2Q2 | Y2Q3 | Y2Q4 | Y3Q1 | Y3Q2 | Y3Q3 | Y3Q4 |
| BA Article | 25 | 25 | 50 | 50 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 |
| MBA Article | 25 | 50 | 60 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| PhD Article | 25 | 50 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| BA Book | 25 | 25 | 25 | 25 | 50 | 50 | 50 | 50 | 75 | 75 | 100 | 100 |
| MBA Book | 25 | 25 | 50 | 50 | 75 | 75 | 75 | 75 | 100 | 100 | 100 | 100 |
| PHD Book | 25 | 50 | 50 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ScenII | Y1Q1 | Y1Q2 | Y1Q3 | Y1Q4 | Y2Q1 | Y2Q2 | Y2Q3 | Y2Q4 | Y3Q1 | Y3Q2 | Y3Q3 | Y3Q4 |
| BA Article | 25 | 35 | 50 | 75 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| MBA Article | 30 | 50 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| PhD Article | 40 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| BA Book | 25 | 25 | 25 | 25 | 50 | 55 | 65 | 70 | 80 | 100 | 100 | 100 |
| MBA Book | 25 | 25 | 50 | 50 | 75 | 75 | 80 | 100 | 100 | 100 | 100 | 100 |
| PHD Book | 30 | 55 | 60 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

### IV. Output

If you look on the “Annual Summary” worksheet, you should get the below results for both scenarios. On an annual basis the impact of the improved turnover and productivity is clear. To produce the same amount of required RA product output, as compared to Scenario I staffing and costs, in general Scenario II requires less new and total RAs on the payroll each year at lower salary and overhead costs.

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| --- | --- | --- | --- | --- | --- | --- |
| Annual Basis | Year 1 |  | Year 2 |  | Year 3 |  |
|  | Scen I | Scen II | Scen I | Scen II | Scen I | Scen II |
| New RAs Hired | 782 | 729 | 79 | 15 | 271 | 239 |
| Total RAs on Payroll | 826 | 773 | 504 | 567 | 490 | 449 |
| Salary Costs ($million) | $21.8 | 20.3 | 13.6 | 14.9 | 13.9 | 12.6 |
| Overhead ($million) | 7.3 | 6.8 | 4.3 | 4.7 | 4.5 | 4.0 |