HR Analytics 1: HR Metrics & Analytics
Fall 2022
38:533:616:01

KEY POINTS

Instructor: Professor Michael Sturman, Ph.D., SPHR

Class Time: Monday, 4:30-7:10

Office Hours
- Monday/Wednesday 2:00-4:00
- You can also make an appointment to meet with me. Please contact me by emails, preferably with 2 or 3 possible times (in order of preference, if any).
- Meetings can be held by Zoom if that is easier.

Technology: The class is supported in Canvas. Note that the Canvas platform has instructions and tutorial to help you (see https://canvas.rutgers.edu/students/).

E-mail: michael.sturman@rutgers.edu

Textbook:
(Required) *Investing in People: Financial Impact of Human Resource Initiatives*
Wayne F. Casio, John W. Boudreau, & Alexis A. Fink. Pearson Education, Inc. 3rd Edition (2019). ISBN: 978-1586446123 (I'd recommend purchasing the paperback. The book is also available online through the Rutgers library system.)

Readings: Readings should be accessible through the library system as well as the Canvas course webpage.

Grading: All grading involves either assignments within Canvas or documents "handed in" to me through the Canvas system.

COURSE DESCRIPTION

This course is designed to introduce students to the fundamental logic, metrics, and methods necessary to conducting HR analytics. Organizations are increasingly relying on HR Analytics to improve decision-making in human resources, and ultimately contribute more effectively to organizational effectiveness. HR practitioners need to be skilled in understanding (1) the types of problems that can be addressed using HR analytics, (2) how to analyze and interpret human resource data, (3) how to evaluate the validity of those analyses, and (4) how to communicate analytical and statistical results in a way to influence decisions. The course is designed to teach basic HR Analytics skills and critical thinking skills with respect to HR decision-making. The course will involve data analysis and statistics, but its emphasis is on application and real-world problem solving.

COURSE OBJECTIVES

Upon successfully completing this course, students should be capable of the following:
- Relating the importance of using data-based reasoning to support HR decision-making
- Engaging in critical thinking, translating how human resource issues and questions can be tested
- Performing basic data analyses to answer human resource questions
- Conducting summary statistics, correlation analysis, and regression analysis to answer human resource questions
- Communicate, in writing and orally, the meaning and implications of HR analytics

MY TEACHING PHILOSOPHY

My goal, quite simply, is for you to learn. I want you coming out of this class knowing how to "do things" with HR Analytics that you did not know going into this course. I know people come to the course with different comfort levels with respect to their prior HR background, their comfort and knowledge of statistics, as well as their skills in using Excel. It is my view that it is my job to teach you how to engage in analytics. If you don't know how to do something with Excel, or how to conduct a particular type of analysis, I should teach you. If I don't cover what you need in a lecture, I should have. If there is something you need to know and I didn't cover it, you should therefore ask about it in class (as, chances are, others will be similarly confused) or office hours.

I also think your education is more important than a schedule set up months ahead of time. It is more important to me that you learn than it is for me to show that I can enforce deadlines. If you will be late with an assignment, I would rather you do the assignment and hand it in late, rather than you not do the assignment. I give an assignment so you can learn from it, not to enforce a deadline or just have something with which to rationalize a grade. In my view, your learning from the assignment is more important than an arbitrary deadline. So, while I have the option of lowering your grade if it is late (and, honestly, I generally do not do that unless it gets extreme or it becomes a pattern), I would still rather you do the assignment than not. While the end-of-semester deadline is fixed (I can't accept assignments after December 16, or Module V on or after December 21, because I have to get everything graded and final grades entered into the system), I will take any late assignment up to and including on December 16, and I will never lower any assignment's grade more than one full letter grades for being late.

Finally, I fully recognize the continued chaos that continues to reign. If something happens and you need some help or accommodation, please ask. I can't help you learn if I don't know what challenges you are facing. I will sincerely try to accommodate problems that arise so that you can come out of this class truly understanding and being able to apply HR Analytics.

SMLR LEARNING OBJECTIVES

This course is designed to help students attain the following specific SMLR learning objectives:

I) Written & Oral Communication — Communicate effectively at a level and in modes appropriate to an entry level professional.
- Communicate complex ideas effectively, in standard written English
- Analyze and synthesize information and ideas from multiple sources to generate new insights
- Produce high quality executive summaries
- Make an argument using contemporary and/or historical evidence
- Present ideas and arguments in a logical and effective way

II) Quantitative, Qualitative, and Analytical Skills — Apply appropriate quantitative and qualitative methods for research workplace issues.
- Formulate, evaluate, and communicate conclusions and inferences from quantitative information
- Apply quantitative methods to analyze data for HR decision making including cost-benefit analyses, ROI, etc. (HRM)
- Apply qualitative methods appropriately, alone and in combination with quantitative methods

III) Research Skills — Demonstrate an ability to collect, analyze and synthesize information to make logical and informed decisions impacting the workplace. Use evidence to evaluate hypotheses, theories and approaches to workplace issues.
- Analyze and synthesize information and ideas from multiple sources to generate new insights
- Assess and critique relevant evidence and research findings
- Use evidence-based analysis to appraise the validity of various hypotheses, theories, and approaches to workplace issues

V) Understanding Context — Evaluate the context of workplace issues, public policies, and management decisions
- Analyze issues related to business strategies, organizational structures, and work systems
- Analyze issues related to the selection, motivation, and development of talent in a local and global context (HRM)

VI) Application — Demonstrate an understanding of how to apply knowledge necessary for effective work performance
- Apply concepts and substantive institutional knowledge, to understanding contemporary developments related to work
- Understand the legal, regulatory and ethical issues related to their field
- Understand the internal and external alignment and measurement of human resource practices (HRM)

VIII) Diversity, Equity, and Inclusion — Evaluate the context of workplace issues, public policies, and management decisions.
- Analyze issues related to business strategies, organizational structures, and work systems
- Analyze issues related to the selection, motivation, and development of talent in a local and global context

GRADING

Material	Weight

Reading Assignments: **(20%)**

For most weeks, there will be a reading and a corresponding homework assignment. The reading and assignment will be provided in the module in the week before it is due (so, the reading and reading assignment for Week 2 will be provided in Week 1's module). All assignments should be written in double-spaced; 12-point font; Times New Roman; 1-inch margins.

Participation: **(10%)**

Students are expected to come to class prepared, including having completed all the readings assigned for the day and corresponding homework assignments. As a high-level elective, your participation will be critical to the success of the class.

Analytical Workbook:

Students will be expected to regularly work on workbook using data provided on the hypothetical company, *Mr. Macky's Cajun Cuisine*. Information about the company and the data will be provided in class. There are four modules due at various points during the semester, and the fifth module is due during finals period (please refer to due dates in our course schedule). Each module provides a series of exercises and analytics that you will need to compute and solve. The modules address different areas of analytics, and each module moves from simpler analyses to more complex analyses. Nonetheless, all statistical analyses can be conducted using Excel's Analysis Toolpak add-in. Depending on your own skills, you can import the data into a statistical package and conduct your analyses with such tools as well.

Note I have provided due dates for the assignments, but you may want to work on them and hand them in before the due date, as you will be able to revise and resubmit your answers (see below):

Module 1: Summary Information (Due end of Week #5 — 10/10)   **(10%)**

You will conduct analytics that provide basic foundational information about Mr. Macky's. In this module, you will find out summary information about current employees, employees who had been employed by Mr. Macky's over the past few years, and on the various restaurant units of the restaurant chain. Information determined in this Module will help set up analyses for future modules.

Module 2: Performance & Turnover (Due during Week #9 — 11/7)   **(15%)**

Module 2 pushes you to consider in detail the effects associated with managerial performance ratings, and particularly to examine the relationship between job performance ratings and unit performance. The module then moves into considering the predictors and consequences of employee turnover. This includes by modeling how turnover rates relate to unit performance, as well as developing turnover models to predict the likelihood that individual employees will leave the organization.

Module 3: Engagement, Diversity & Selection (Due end of Week #12 — 12/5) **(15%)**
In Module 3, you will explore issues associated with engagement, diversity, and selection. This module will have you explore issues associated with the measure of employee engagement. It will also examine how successful Mr. Macky's has been in its selection efforts, both in terms of the performance ratings of those hired and the diversity of its recruitment and compensation practices. You will also look into what options Mr. Macky's has with respect to the design of a new selection system and explore ways that Mr. Macky's can improve the quality of its managerial hires. You will also help evaluate the different selection devices and their relative effectiveness.

Module 4: Employee Development & Compensation (Due Week #14 — 12/12) **(15%)**
In Module 4, you will engage in HR Analytics associated with employee development and compensation. Although Mr. Macky's does not provide much in the way of training, you can look at how employees develop within the organization. In this module, you will explore how much value there is to the organization in accumulating organizational experience. You will also try to understand how the company rewards performance and how effective their compensation practices are for incentivizing future performance and retaining high performers.

(Optional: Revise and Resubmit) For Modules 1-4, after each part submitted, I will endeavor to provide you with grades within one week. The grading will indicate which questions were answered incorrectly. You can then revise and resubmit your responses. The grade for resubmission will replace your initial grade of each module only if it is higher than the initial grade (which it should be, because you shouldn't change any correct answers). Although the resubmission is optional and you may choose not to resubmit your response, I encourage you to review your response for learning purposes. Modules *may be resubmitted more than one time if desired*. The last day to hand in resubmissions is December 16.

Module 5: Cross-Functions and Big Picture (Due on 12/21) **(15%)**
Module 5 covers all aspects of analytics covered in the course. It includes questions related to individual functions covered in the earlier modules, as well as analytics associated with multiple functional areas. It also provides questions related to the overall impact of various HR functions. Note that with Module 5, you will *not* be able to revise and resubmit your answers to improve your grade.

FINAL GRADES

Final grades will be computed mathematically based on the aforementioned weighting and the scores on the various grade elements. Final grades for the class will be determined as follows:

90-100	A
85-89.9	B+
80-84.9	B
75-79.9	C+
70-74.9	C
< 70	F

COURSE INFORMATION, POLICIES, AND RESOURCES

Course Website:

The course Canvas website (http://canvas.rutgers.edu/) will be the primary mechanism that I will use to communicate information to the entire class outside of lecture. All class material, lecture slides, readings, assignments, and grades will all be available on the course website.

Computer Use:

This class will make extensive use of Excel and the Data Analysis Add-In. Please make sure you can use the Data Analysis tools.

For Windows: https://support.office.com/en-us/article/load-the-analysis-toolpak-in-excel-6a63e598-cd6d-42e3-9317-6b40ba1a66b4%23OfficeVersion=Windows

For Mac: https://support.office.com/en-us/article/load-the-analysis-toolpak-in-excel-6a63e598-cd6d-42e3-9317-6b40ba1a66b4#OfficeVersion=MacOS

Note that Excel 2011 or earlier version on the MAC operating system will not feature the Data Analysis add-in. To install the most updated version of Excel, please visit http://software.rutgers.edu to download and install via your Rutgers NetID account.

Assignment Policy:

Readings should be completed by the beginning of class each week. Please hand in all assignments through the Canvas system. Assignments handed in after class (or handed in to my office during class) *may* be marked down (although I usually do not do this). Note, however, that up until the final course deadline, no assignment will be marked down more than one letter grades. Thus, it is far better to hand in an assignment, even if it is very late, than to get a zero on it. It is always better to at least hand an assignment in late than not hand it in at all. Due to university constraints, though, all assignments due over the course of the semester must be handed in on or by December 16 to allow me to get grades completed in time. Also, please see my *Teaching Philosophy* above.

Academic Integrity:

All students enrolled in this course are responsible for abiding by the guidelines outlined in the University's Academic Integrity Policy. You can find the full policy at http://academicintegrity.rutgers.edu/. In particular, the principles of academic integrity require that a student do the following:

- *Properly acknowledge and cite all use of the ideas, results, or words of others.*
- *Properly acknowledge all contributors to a given piece of work.*
- *Make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.*
- *Obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.*
- *Treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.*
- *Uphold the canons of the ethical or professional code of the profession for which he or she is preparing.*

Accommodation:

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: https://ods.rutgers.edu/students/documentation-guidelines. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at https://ods.rutgers.edu/.

Student-Wellness Services

Rutgers provides several resources to assist student who may be experiencing distress or mental health concerns. The following are some of the resources that are available to you if you need them.

Counseling, ADAP & Psychiatric Services (CAPS)
(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ www.rhscaps.rutgers.edu/
CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)
(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/
The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services
(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / https://ods.rutgers.edu/
The Office of Disability Services works with students with a documented disability to determine the eligibility of reasonable accommodations, facilitates and coordinates those accommodations when applicable, and lastly engages with the Rutgers community at large to provide and connect students to appropriate resources.

Scarlet Listeners: **(732) 247-5555 / http://www.scarletlisteners.com/**
Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.

LECTURE TOPICS AND ASSIGNMENTS

Week #1: **Introduction and Statistics Review**
(9/12)

Week #2: **HR Review (from an Analytics Perspective)**
(9/19)

> **Readings:**
> - Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 1)
> - Hammonds, K. H. (2005). Why we hate HR. *Fast Company*, August 2005, Issue 97, 41-47.
> - Milligan, S. (2018). HR 2025: Reach new heights by becoming a trusted advisor. *HR Magazine¸* November/December, 30-38.
>
> **DUE:**
> - **Reading Assignment #1**

Week #3: **Scientific Method, Hypothesis Testing, and Evidence-Based**
(9/26) **Management**

<mark>NOTE: Because of Rosh Hashanah on 9/26, there will not be an in-person class this week. Instead, the content or Week 3 will be online asynchronous.</mark>

> **Class content:**
> - There are 3 online lectures this week (each 30-40 minutes), available on the Canvas website
> - There are 2 online quizzes, also available on the Canvas website. The quizzes represent the equivalent of participation for this week's class.
>
> **Readings:**
> - Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 2)
> - Schwab, D. P. (2004). *Research Methods for Organizational Studies*. Lawrence Erlbaum Associates: Mahwah, NJ. (Chapter 1)
>
> **DUE:**
> - **Reading Assignment #2**

Week #4: **Metrics and Measures**
(10/3)

       Readings:
- Fink, A. A., & Sturman, M. C. (2017). "HR Metrics and Talent Analytics." In D. Collings, K. Mellahi, & W. F. Cascio (Eds.) *The Oxford Handbook of Talent Management*, pp. 375-395. Oxford University Press.

       DUE:
- **Reading Assignment #3**

Week #5: **The Value of Employee Performance**
(10/10)

       Readings:
- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 9)

       DUE:
- **Reading Assignment #4**
- **Workbook:** *Module 1*

Week #6: **Estimating the Value of Human Resource Interventions**
(10/17)

       Readings:
- DiClaudio, M. (2019). People analytics and the rise of HR: How data, analytics and emerging technology can transform human resources (HR) into a profit center. *Strategic HR Review*, 2, 42-46.

       DUE:
- **Reading Assignment #5**

Week #7: **Costing Absenteeism and Turnover**
(10/24)

       Readings:
- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 4)
- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 5)

       DUE:
- **Reading Assignment #6**

Week #8 **Predicting Turnover**
(10/31)

      Reading:
- Harbert, T. (2020). The people puzzle. *HRMagazine*, 65(4), 39-45.
- Ramamurthy, K. N., Singh, M., Yu, Y., Aspis, J., Iames, M., Peran, M., & Held, Q. S. (2015). A talent management tool using propensity to leave analytics. *IEEE International Conference on Data Science and Advanced Analytics*, 1-10.

      DUE:
- **Reading Assignment #7**

Week #9: **Engagement and Attitude Metrics**
(11/7)

      Reading:
- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 6)
- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 7)
- Tyler, K. (2020). Full Measure. *HRMagazine,* 65(4), 69-73.

      DUE:
- **Reading Assignment #8**
- **Workbook:** *Module 2*

Week #10 **EEO and Diversity Analytics**
(11/14)

      Reading:
- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 8)
- Nagele-Piazza, L. (2020). The importance of pay equity. *HRMagazine,* 65(1), 16-18.

      DUE
- **Reading Assignment #9**

Week #11: **Staffing Analytics**
(11/21)

      Readings:
- Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 10)
- Zielinski, D. (2020). All eyes on AI. *HRMagazine*, 65(2), 23-27.

      DUE:
- **Reading Assignment #10**

Week #12: Training Evaluation and Quasi-Experiments
(11/28)

> ### Readings:
> - Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 11)
> - Russ-Eft, D., & Preskill, H. (2005). In search of the Holy Grail: Return on Investment in Human Resource Development. *Advances in Developing Human Resources*, 7, 71-85.
>
> ### DUE:
> - **Reading Assignment #11**
> - **Workbook: *Module 3***

Week #13: Compensation Analytics
(12/5)

> ### Readings:
> - Montan, L., Palotas, Z., & Tinajero, A. (2014). How to incent performance using advanced analytics, *Workspan*, May, 39-43.
> - Sturman, M. C., & McCabe, D. (2008). Choosing whether to lead, lag, or match the market: The case of Punk's Backyard Grill, a start-up restaurant. *Journal of Human Resources in Hospitality and Tourism*, 7, 85-97.
>
> ### DUE:
> - **Reading Assignment #12**

Week #14: Future of HR and Wrap Up
(12/12)

> - Cascio, W. F., Boudreau, J. W., & Fink, A. A. (2019). *Investing in People* (3rd edition). Pearson Education: Upper Saddle River, NJ. (Chapter 12)
> - Tobenkin, D. (2019). The robots are coming. *HRMagazine*, Spring, 58-64.
>
> ### DUE:
> - **Reading Assignment #13**
> - **Workbook: *Module 4***

Post-Class Due Dates
December 16
> - **Last day to hand in late reading assignments**
> - **Last day to resubmit Workbook Modules**

December 21
> - **Workbook: Module 5**