

## **Review of Melissa Whatley's *Introduction to Quantitative Analysis for International Educators***

Jessica Schueller\*

*Miami University, USA*

\* Corresponding author: [schueljd@miamioh.edu](mailto:schueljd@miamioh.edu)  
Address: Miami University, 501 E. High Street, Oxford, OH, USA

---

### **Introduction**

With international higher education (IHE) professionalizing as a field, many graduate programs focusing on the study of international and comparative higher education have been established across the globe. The new generation of students educated in these programs are commonly designated as scholar-practitioners (Streitwieser & Ogden, 2016), and this population was a key target group for Melissa Whatley's new book *Introduction to Quantitative Analysis for International Educators*. The book introduces "international educators to the basics of quantitative analysis and how it can be used to inform and to assess their work in the field" (Whatley, 2022, p. vii).

By providing scholar-practitioners with a field-specific approach to using quantitative analysis in IHE, the text contributes to the practice, teaching, and research of comparative and international higher education. Overall, Whatley's book serves the broader IHE community by putting forth an introductory, practice-based approach to quantitative analysis that will be attractive to students in introductory statistics courses and to more advanced researchers.

### **Overview of the Book**

The first four chapters of the book introduce the researcher to beginner topics, such as data collection, types of variables, differences between descriptive and inferential statistics, measures of central tendency and variability, as well as hypothesis testing. Chapter 5 covers the one-way ANOVA and chi-square tests of independence, and Chapter 6 overviews correlation. Then chapters 7-9 delve into more advanced regression topics and quasi-experimental research, which Whatley argues is likely to increase in the near future (p. 165).

The final chapter 10 explains to readers how quantitative articles should be structured and what should be included in each section – a tremendous resource for early career scholars and graduate students, though perhaps not as relevant to practitioners. The book rounds out with useful appendices of critical values, answers to the practice questions, an overview of IHE journals, a glossary of key terms, and a bibliography of all referenced empirical literature and statistical guidebooks.

For instructors, there is a companion site (Whatley, n.d.) that includes prepared slides of all the book's chapters, as well as quick links to the sample datasets used throughout the text. On the site, Whatley also lists corrections or amendments to the text and maintains a list of data sources in IHE research. Along with these timesaving materials, the sample datasets and practice problems allow this text to anchor quantitative research methods courses focused on IHE.

### **An Innovative and Timely Contribution to International Higher Education**

The book considers the specificities of conducting quantitative research in IHE, and in doing so, it outlines the tools and strategies international educators have to explore the dynamics of their practice from a quantitative perspective. As an expansive yet succinct text, this book sets the stage for the next generation of research methods education in IHE studies—one that requires a field-specific, applied approach.

The examples from empirical IHE research that are integrated into each chapter to explain concepts and for use in the practical examples and exercises set the book apart as distinct to the study of IHE. The "Practice Problems" at the end of each chapter are exemplary in illustrating the concepts presented. Whatley walks readers through a variety of research scenarios in international education, from comparing the GPA differences between study abroad and non-study abroad students, to correlations of the quality of international students' friendship networks and students' feelings of social connectedness. These international education practice examples are the richest contributions of the book and what sets it apart from other introductory statistics textbooks.

Beyond the practice examples, each chapter lists further research articles from IHE that have used the topic presented in that chapter (e.g. correlation) in the "Recommended Reading" section. These example articles from IHE for each statistical analysis topic are a gold mine for seeing the methods implemented in practice, including how the concepts and results are presented and described. This element is surely advantageous also for even more advanced researchers, who can use vetted example articles to review when drafting manuscripts.

Discussion of the intricacies of conducting certain analyses offers a rich context for budding and more experienced international educators to think critically about how they are using data to make decisions. Through this, the author establishes why a distinct text on quantitative methods is necessary for global education practitioners.

### **Advancing Criticality in Quantitative Research in International Higher Education**

The book has numerous strengths and I also saw one main area of improvement that could be considered for the next edition. To advance the rigorous use of quantitative methods in IHE research, it could incorporate a more detailed introductory discussion that situates quantitative analysis within higher education research methodologies, introduces critical approaches to quantitative research, and details data sources and research designs specific to IHE.

The introduction could benefit from onboarding the three different research communities in social science (Tashakkori et al., 2020), the importance of leading with research questions, and deciding when a quantitative approach would be deemed as appropriate. This is critical to avoid the 'methodolatry' of being a wholly 'quantitative' or 'qualitative' researcher that seeks to lead with their method of choice instead of the most appropriate approach based on the research questions they have (Janesick, 1994). As White (2017) emphasizes, "undue attachment to preference for particular methods ... limits the range of research questions you can address and can also prevent you from fully developing your skills as a researcher" (p. 96). Such a re-framing would make clear that the quantitative approach is just one option in the analytical toolbox available to international scholar-practitioners. A revised introduction could also incorporate critical approaches to quantitative research. As Whatley herself argues in the preface, "international educators must also think more broadly in their critical approaches to analyzing and assessing the field" (Whatley, 2022, p. vii). To keep up with the cutting-edge developments in statistical analysis, introducing the student researcher to Critical Quantitative (e.g. Wells & Stage, 2015) and QuantCrit (e.g. Pérez Huber et al., 2018) from the start would bring them up to speed on the state-of-the-art in quantitative research and ensure they avoid potential pitfalls in designing studies, especially ones that attempt to better understand equity and access in IHE.

In addition, IHE-specific data sources and designs could be emphasized. Whatley has begun a list of secondary quantitative data sources in IHE on her companion site, and beyond adding this list to the book, the advantages and disadvantages of each source could be parsed out, as well as overall the limits of primary and secondary data in IHE. This

explanation could take into consideration the unique needs of international educators in accessing data (particularly from one's own institution) and the unique challenges of common datasets (e.g. OECD, UNESCO), institutional data (e.g. low sample sizes and/or response rates) and data types (e.g. using Rasch analysis for Likert data; Boone, 2016). A discussion of comparative research in IHE could also prove fruitful, especially since most of it uses large-scale quantitative analysis (Kosmützky & Krücken, 2014). Finally, how statistical analysis can be integrated into mixed methods research with examples could round out this section (e.g., Doyle et al., 2022; Whatley & Stich, 2021). Other quantitative adjacent methods like social network analysis, which are increasingly used in international higher and comparative education research, could also be included. Further, quantitative research designs common in IHE could be discussed in more depth, such as addressing the singular value of descriptive research and statistics, which can and sometimes should stand on their own (Loeb et al., 2017; White, 2017).

Early on in the book, Whatley claims that “descriptive statistics are limited to describing a particular sample, and researchers are often interested in conducting analyses that generalize to a larger population”—while a valid assumption, it is critical to emphasize the importance of descriptive statistics to beginning researchers (Loeb et al., 2017). Descriptive statistics can stand on their own, and depending on the research question, it may be more appropriate to use descriptive statistics combined with qualitative data than to force an inferential analysis. Another example is the list of survey design recommendations (Whatley, 2022), which is useful since many IHE practitioners must create their own surveys without the help of a survey methodologist. However, such do-it-yourself survey creation can undoubtedly impact the results of the institutional-level research commonly undertaken by IHE's scholar-practitioners. A few texts, such as the one by Andres (2012) could be recommended as additional resources for independently designing surveys. At the same time, such methods-focused instruction may be a little too advanced for an introduction.

### **Conclusion: A TrailBlazer**

Melissa Whatley's *Introduction to Quantitative Analysis for International Educators* provides an advanced introduction to conducting robust quantitative research in international higher education. In preparing to write this review, I used this book while working through a thesis research project and can confidently state that it is a helpful reference for emerging scholars of IHE. While aimed at the novice scholar-practitioner, the use of empirical examples to illustrate each of the statistical techniques will also interest the more advanced international education researcher. While the book is an excellent resource for scholars, readers should be aware that the book starts from an assumption that researchers have already decided to conduct quantitative analysis (rather than presenting a discussion of when quantitative is the appropriate method) and the book may be less approachable for those without a solid training or background in quantitative research or international education data sources.

There is no doubt this book is destined for a second edition as it becomes a mainstay in methods courses in the ever-growing number of graduate programs in IHE across the world. The second edition could be made more accessible to the broad range of practitioners and scholars who work in this field by leaning less on hand calculations of formulas. To Whatley's point, “As international education professionalizes as a field, it is increasingly essential that scholars, practitioners, and other individuals in international education are able to use quantitative data to assess, evaluate, and critically examine international education activities and practices—both at individual institutions and on broader scales” (Whatley, 2022, p. vii). There will continue to be demand for more IHE-specific instruction, and Whatley's *Introduction to Quantitative Analysis for International Educators* provides a blueprint for future methods textbooks in the field.

### **References**

- Andres, L. (2012). *Designing and doing surveys*. Sage.
- Boone, W. J. (2016). Rasch analysis for instrument development: Why, when, and how? *CBE Life Sciences Education*, 15(4), Article cbe.16-04-0148. <https://doi.org/10.1187/cbe.16-04-0148>
- Doyle, J., Edwards, D., & Haddow, A. (2022). Applying mixed methods research in large-scale programs: Tracing the long-term outcomes of development scholarship alumni. *Journal of Studies in International Education* 0(0). <https://doi.org/10.1177/10283153221126246>

- Janesick, V.J. (1994). The dance of qualitative research design: Metaphor, methodolatry, and meaning. In N.K. Denzin & Y.S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 209–210). Sage.
- Kosmützky, A., & Krücken, G. (2014). Growth or steady state? A bibliometric focus on international comparative higher education research. *Higher Education*, 67(4), 457–472.
- Loeb, S., Dynarski, S., McFarland, D., Morris, P., Reardon, S., & Reber, S. (2017). *Descriptive analysis in education: A guide for researchers* (NCEE 2017-4023). National Center for Education Evaluation and Regional Assistance.  
<http://files.eric.ed.gov/fulltext/ED573325.pdf>
- Pérez Huber, L., Vélez, V. N., & Solórzano, D. (2018). More than “papelitos:” a QuantCrit counterstory to critique Latina/o degree value and occupational prestige. *Race Ethnicity and Education*, 21(2), 208–230.
- Streitwieser, B. & Ogden A.C. (2016). *International higher education's scholar-practitioners: Bridging research and practice*. Symposium Books.
- Tashakkori, A., Burke Johnson, R., & Teddlie, C. (2020). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Sage.
- Wells, R. S., & Stage, F. K. (2015). Past, present, and future of critical quantitative research in higher education. *New Directions for Institutional Research*, 2014(163), 103–112.
- Whatley, M., & Stich, A. E. (2021). From exclusive to inclusive: A mixed-methods investigation of study abroad participation and practices. *The Journal of Higher Education*, 92(1), 140–167.
- Whatley, M. (2022). *Introduction to quantitative analysis for international educators*. Springer International Publishing.
- Whatley, M., & Stich, A. E. (2022). Pushing the integration envelope: A network analysis of study abroad website content. *Journal of Mixed Methods Research*, 16(3), 350–372.
- Whatley, M. (n.d.). Introduction to quantitative analysis for international educators – Companion site.  
<https://sites.google.com/view/melissa-whatley-ph-d/home/introduction-to-quantitative-methods-for-internationaleducators>
- White, P. (2017). *Developing research questions* (2nd ed.). Bloomsbury Academic Press.
-