Validity and Reliability in Built Environment Research

A Selection of Case Studies

Edited by Vian Ahmed, Alex Opoku, Ayokunle Olanipekun and Monty Sutrisna

Validity and Reliability in Built Environment Research

> "This provides a welcome addition to the literature on research methods in the built environment and should be useful for students at all levels".
>
> **Dr. Mark Addis**
> *London School of Economics and Political Science*

This book aims to guide researchers who are engaged in social science and built environment research through the process of testing the reliability and validity of their research outputs following the application of different methods of data collection.

The book presents case studies that emphasize reliability and validity in different examples of qualitative, quantitative and mixed method data sets, as well as covering action research and grounded theory. The reader is guided through case studies that demonstrate:

- An understanding of the reliability and validity approaches from social science and built environment perspectives in alignment with the relevant research philosophies, approaches and data collection strategies
- Real research projects that have been conducted by expert researchers on topics such as Lean, BIM, Housing and Sustainability to answer specific or evolving questions in relation to the reliability and validity of research
- A simple and easy method that students at Masters and PhD levels can relate to in order to adopt a sound reliability and validity approach to their research

This book is the essential guide for researchers at undergraduate and postgraduate level who need to understand how to validate the quality of the empirical tests they conduct using different techniques. The book will also be a great asset to supervisors from different backgrounds who need a refresher on this key aspect of the research cycle.

Vian Ahmed has over 25 years of industrial and academic experience in the United Kingdom and overseas. During her employment at the University of Salford (2004–2018), she took on a number of management positions, and became

Professor in the Built Environment in 2010. She was the Director of the Online Doctoral Programme at the School of the Built Environment (2004–2016) and the Director of Postgraduate Research (2007–2016). Her previous books include: *Research Methodology in the Built Environment* (2016), and *Leadership and Sustainability in the Built Environment* (2015).

Alex Opoku is an Associate Professor in Quantity Surveying & Construction Management at the College of Engineering, University of Sharjah, UAE. He is a Fellow of the UK Higher Education Academy (FHEA), Chartered Quantity Surveyor (MRICS) and Chartered Construction Manager (MCIOB) with many years of teaching and learning experience in the UK Higher Education sector and the UK construction industry.

Ayokunle Olubunmi Olanipekun is a Postdoctoral Research Fellow in Construction Management in the School of Built Environment at Massey University, New Zealand. He has professional academic experience in higher education institutions in Nigeria, Australia and New Zealand since 2011. He is Fellow of the UK Higher Education Academy and a Professional Member of the Nigerian Institute of Quantity Surveyors (NIQS).

Monty Sutrisna is Professor of Construction and Project Management and the Head of School – School of Built Environment at Massey University, New Zealand. With professional experience in both industry and academia in the United Kingdom, Australia, New Zealand and Indonesia for about 20 years, he has been championing close collaboration between industry and academia to achieve synergy. He is a Fellow of the UK Higher Education Academy, a Fellow of the Australian Institute of Building, a fellow of the Royal Institution of Chartered Surveyors and also a member of the Institution of Civil Engineers, Chartered Institute of Building and Chartered Institution of Civil Engineering Surveyors.

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Contributors

Editors

Vian Ahmed is a Senior Fellow of the UK Higher Education and a Fellow of the Chartered Institute of Building. She has gathered over 25 years of industrial and academic experience in the United Kingdom and overseas. She is currently a Professor in the Industrial Engineering Department at the American University of Sharjah and the Director of Teaching and Learning Alternative Delivery for the College of Engineering. She obtained a (BEng.) in Civil Engineering, (MSc) and (PhD) in Construction. She has broad expertise in teaching at undergraduate and postgraduate levels, with expertise in construction project management and IT. She has over 30 graduated PhD students within the Built Environment discipline, covering different research themes such as sustainability, energy saving, intelligent designs, Building Information Modelling, PPP/PFI, e-learning, disaster and resilience management. She has chaired and organized a number of national and international workshops and seminars and secured a number of research grants, with more than 100 refereed journal and conference papers.

Alex Opoku is an Associate Professor in Quantity Surveying & Construction Management at the University of Sharjah, UAE. He is a Fellow of the UK Higher Education Academy (FHEA), Chartered Quantity Surveyor (MRICS) and Chartered Construction Manager (MCIOB) with many years of teaching and learning experience in the UK Higher Education sector and the UK construction industry.

Ayokunle Olubunmi Olanipekun is a Senior Lecturer in Quantity Surveying in the School of Architecture and Built Environment, University of Wolverhampton, UK. He has professional academic experience in higher education institutions in Nigeria, Australia and New Zealand since 2011. He is Fellow of the UK Higher Education Academy and a Professional Member of the Nigerian Institute of Quantity Surveyors (NIQS)

Monty Sutrisna is Professor of Construction and Project Management and the Head of School – School of Built Environment at Massey University, New Zealand. With professional experience in both industry and academia in the

United Kingdom, Australia, New Zealand and Indonesia for about 20 years, he has been championing close collaboration between industry and academia to achieve synergy. He is a Fellow of the UK Higher Education Academy, a Fellow of the Australian Institute of Building, a fellow of the Royal Institution of Chartered Surveyors and also a member of the Institution of Civil Engineers, Chartered Institute of Building and Chartered Institution of Civil Engineering Surveyors.

Authors

Ahmad Saad is an Engineering System Management MSc graduate from the College of Engineering at the American University of Sharjah, with a Bachelor Degree in Electrical Engineering. He is currently working as a Data Engineering Analyst in one of the major consulting companies in the UAE.

Alia Al Sadawi is a doctoral candidate doing her PhD in Engineering System Management. She has completed a bachelor's degree in Electronics Engineering from Ajman University and Master degree in Engineering Systems Management from The American University of Sharjah in 2016. Her research interests include engineering management, smart cities management and advanced decision-making analysis.

Ayman Alzaatreh is an Associate Professor of Statistics at the American University of Sharjah. He has a PhD in Statistics, BSc and MSc in Mathematics. He has more than 12 years of teaching experience in the United States and overseas. His current research interest focuses on distribution theory, statistical inference of probability models, multivariate weighted distribution and data mining. He has more than 50 referred journal and conference publications and chaired and organized number of international conferences and workshops.

Ayomikun Solomon Adewumi completed a doctorate in Architecture and Urban planning at University of Dundee, United Kingdom in July 2020. The thesis explored how urban sustainability can be delivered at the neighbourhood scale of spatial planning through the adoption of indicators. Prior to this, he had both Bachelor of Technology (B.Tech) and Master of Technology (M.Tech) degrees in Architecture at the Federal University of Technology Akure, Nigeria. To date, he has published 3 journal articles and presented a conferences and workshops. He is a Fellow of the Higher Education Academy (FHEA). Currently, he lectures at London South Bank University, United Kingdom.

Tahani Alnaqbi is postgraduate researcher at Engineering System Management in the College of Engineering at the American University of Sharjah and conducting a research in innovative solutions regarding the water scarcity issues in the UAE region. She is also working with the Government of Sharjah as the Head Manager of the Building Permits Section since 2015. In 2018, she was awarded Honorary Best Leading Manager in the organization.

Her future aspirations include working as an Engineer who introducing artificial intelligence to develop the urban development in the UAE.

Nikita Kasianov is an Engineering System Management MSc graduate from the College of Engineering at the American University of Sharjah, with a Bachelor Degree in Civil Engineering. Upon graduation, Nikita worked as a site engineer on a number of projects within the construction industry including the construction of a concrete laboratory and recreation facilities.

Heba Khlaif is an Engineering System Management MSc student in the College of Engineering at the American University of Sharjah, with a Bachelor Degree in Industrial Engineering and prior experience in project management & cargo commercial product development.

Dumiso Moyo is a Chartered Town Planner (MRTPI) and a Senior Fellow of the Higher Education Academy (SFHEA). He is author of the book *Explaining the Low-income Housing Dilemma in Sub-Saharan Africa*. Currently, he is a Lecturer at the University of Dundee, United Kingdom, and researches on cities in sub-Saharan Africa.

Malick Ndiaye is an Associate Professor in the American University of Sharjah. He has a PhD in Operations Research from the University of Bourgogne, France. He has worked for King Fahd University of Petroleum and Minerals (KFUPM) and the Management Mathematics Program at the University of Birmingham, United Kingdom. His research areas cover operations research, supply chain management and location theory and its applications to GIS. His research has received grants funded by the Capital Region of Brussels, Belgium; the University of Birmingham; and KFUPM. He is a Certified Supply Chain Professional from the American Association for Operations Management (APICS) and a qualified APICS trainer.

Edoghogho Ogbeifun is a Senior Lecturer in the Department of Civil Engineering, University of Jos and Research Fellow in the Postgraduate School of Engineering Management, University of Johannesburg. He has over 35 years work experience in the built environment development. He is a Professional civil engineer, Council for the Regulation of Engineering in Nigeria (COREN) and an accredited Facilities Professional (AFP) of the South African Facilities Management Association.

Vincent Onyango is a Lecturer and researcher at the University of Dundee's Department of Architecture and Urban Planning and leads the degree programme Environmental Sustainability. His research focuses on the interface between the natural and built environments, covering environmental assessments, integrated environmental planning and management, with greater interest in processes and methodologies towards unifying the broader and more integrative issues of sustainability and environmental governance. He has recently undertaken research on the effectiveness and design of

Scotland's policies on greenhouse gas emissions in relation to new houses, marine planning, and implications for multi-use of the oceans.

Jan-Harm C. Pretorius is a trained Baldrige (USA) and South African Excellence Foundation (SAEF) assessor. He worked at the South African Atomic Energy Corporation (AEC) as a Senior Consulting Engineer for 15 years. He is currently a Professor and Head of School: Postgraduate School of Engineering Management in the Faculty of Engineering and the Built Environment, University of Johannesburg.

Sara Saboor is a Doctoral Candidate in Engineering System Management program at the American University of Sharjah. She has an engineering background with Bachelor's in Electrical Engineering (Electronics) and Master's degree in Electrical Engineering (Telecommunication) from the National University of Sciences and Technology (NUST), one of the top universities in Pakistan and recognized worldwide. She works as a Graduate teaching/research assistant at the American University of Sharjah. Her research interests include engineering management, strategic management, HR management and advanced decision-making analysis.

Hasan Saleh is a graduate student in the Engineering Systems Management program at the American University of Sharjah. He holds a bachelor degree in civil engineering since 2016 and has started his career in the construction industry upon graduation. He shifted to facilities management in 2017 and has been working to utilize his knowledge and skills in this field.

Willie Tan is tenured Professor, Department of the Built Environment, College of Design and Engineering, National University of Singapore. He specializes in geomatics, urban management and project finance. He is Editor of the World Scientific Series on the Built Environment and an editor of Spatial Science. He has written books on research methods and project finance.

Dana Yazbak is an Engineering System Management MSc student in the College of Engineering at the American University of Sharjah, with a Bachelor Degree in Civil Engineering and prior experience in Demand & Supply Planning with the Cosmetic Supply Chain Industry.

Yajian Zhang worked as a Research Fellow in National University of Singapore from 2017 to 2019. His research interests include managing large infrastructure projects and sustainable urban development. Currently, he is pursing another graduate degree in information systems.

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As editors, we would like to thank all our colleagues and students who have contributed to our research journey and topped up our realization of the importance of the validity and reliability of research outputs. We also thank all the authors who have contributed chapters that made this book a reality, and for their patience while surviving the challenges that COVID-19 imposed upon them and us. We thank our families who supported us while taking time out to produce this book.

Last but not the least, we would also like to thank Routledge publishers for helping us realize our long-term ambition to produce this book, and understanding the existing need for sharing examples of some of the good practices for the validity and reliability of research in engineering and the built environment.

Vian Ahmed
Alex Opoku
Ayokunle Olanipekun
Monty Sutrisna

Introduction

This book aims to guide researchers who are engaged in social science and built environment research through the thought process of testing the reliability and validity of the research outputs following the application of different methods of data collection. This book is very much inspired by our recently published book on Research Methodology in the Built Environment: A Selection of Case Studies (2016), which gathered a number of case studies that illustrate the thought process of applying different research methods by using examples of qualitative, quantitative and mixed method research as well as action research and grounded theory. However, the book did not look into the final stages of the research, hence the reliability and validity of the results, which is of great importance to any research. Therefore, to achieve the intended aim of this book, the reader will be guided through show-casing quality research that demonstrates;

- A simplified understanding of the reliability and validity approaches from the social science and built environment prospective in alignment with the relevant research philosophies, approaches and data collection strategies. The book will be structured in a form of a selection of case studies that bring together a comprehensive range of different scenarios that cover various data collection strategies such as; qualitative, quantitative, mixed methods research etc.
- An overview of different case scenarios that have been formed by researchers within social science and built environment disciplines, to answer specific or evolving questions in relation to the reliability and validity of research in a simple and easy way that students at Masters and PhD levels can relate to. The book will address the fundamental issues that researchers must identify in order to adapt a sound reliability and validity approach.

Validity and Reliability are integral parts of any social science research in order to judge the quality of its research design and to test the quality of any empirical tests that have been adapted. The authors have observed a large number of dissertation and thesis at Postgraduate and Undergraduate levels that pay little attention to this aspect of the study, raising many questions about the integrity of the research. The authors have also observed that a large number of PhD thesis