Data Journalism in Indonesia in the Time of Hoaxes

Adek Roza

A thesis submitted in fulfilment of the requirements
for the degree of Doctor of Philosophy
Faculty of Arts and Social Sciences
University of Technology Sydney

2022

Certificate of Original Authorship

I, Adek Roza, declare that this thesis is submitted in fulfilment of the requirements for the award of Doctor of Philosophy in the School of Communication, Faculty of Arts and Social Sciences, at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This research is supported by the Australian Awards Scholarship organised by Australian Government Department of Foreign Affairs and Trade

Signature of student: Production Note:
Signature removed prior to publication.

Date: 3rd July 2022

Acknowledgements

I would like to thank the Australian Government for supporting my doctoral research through an Australia Award Scholarship and University of Technology Sydney (UTS) International staff who worked tirelessly to ensure my research journey went smoothly.

Words cannot express my gratitude to my principal supervisor, Dr Catriona Bonfiglioli, for her invaluable guidance, patience, and feedback. I would also like to thank my co-supervisor, Dr Anne Kruger, for sharing her knowledge to enrich my thesis.

This endeavour would not have been possible without the guidance and support from the UTS Graduate Research School staff, the research office at the Faculty of Arts and Social Sciences and the FASS IT team, and staff at UTS Library.

I could not have undertaken this journey without my academic colleagues in the UTS Higher Degree Research workspace and Scholar Centre. I also thank my Indonesian friends who were on hand anytime for help.

I am indebted to my research participants, who generously allocated their time, shared valuable knowledge, and facilitated my data collection.

I would acknowledge the editorial assistance of professional editor Dr Terry Fitzgerald in giving this thesis a final shape.

I would be remiss in not mentioning my family. It was my parents who always put education first and my siblings who always encouraged me to study. I dedicated this work to my wife, Nur, and my children, Kirana and Bianka. Their love and belief in me have sustained my spirits and motivation.

Contents

Certificate of Original Authorship ..... **i**

Acknowledgements ..... **ii**

List of Figures and Tables ..... **vii**

Abstract **10**

Chapter 1 Introduction: The Internet, Hoaxes, and the Media in Indonesia **12**

1.1 When Data Goes Viral 12
1.2 Context of this Study 14
The Case of Ratna Sarumpaet *14*
Research on Journalism and Data Journalism in Indonesia *18*
The Emergence of Data Journalism *19*
1.3 Motivation for the Study 20
1.4 Aim and Scope 21
1.5 Significance of the Study 22
1.6 Overview of the Study 22

Chapter 2 Literature Review **27**

2.1 Literature Search Strategies and Scope 28
2.2 Data Journalism: Origin and Definition 29
2.3 Why Data Journalism? 32
2.4 Challenges in Adopting Data Journalism 34
Politic: Access to Data *34*
Economy: News Outlets Financial Capacity *35*
2.5 Collaboration and the Roles of Other Institutions 37
2.6 Changes in Newsroom and Journalistic Cultures 38
2.7 Field Theory Perspective 39
2.8 Gaps in Research 41
2.9 Conclusion 43

Chapter 3 Theoretical Background and Conceptual Framework **45**

3.1 Theoretical Background 46
Field and the Journalistic Field *47*
New Agents *51*
Habitus *52*
Capital *54*
3.2 Why Bourdieu? To Avoid Being Internalistic and To Focus on the Micro-Level 55
3.3 Conceptual Framework 58
Digital Disruption *58*
Disinformation *59*
Discipline of Verification *62*
Data Journalism *63*
News Values *65*
Public Relations *67*
3.4 The Relationship Between the Theory and Concepts, and How It Is Used in This Study 68

3.5 Conclusion 71

Chapter 4 Research Design and Methodology 72

4.1 Capturing the Local Context 72
4.2 Case Study Research 73
4.3 Sampling 74
Legacy Media *75*
Newer Online News Media: The Newcomers *76*
Government Agencies: Beyond the Journalistic Field *77*
4.4 Data Generation 77
Sources *77*
The Internet 77
Interviews 79
Institutional Documents 79
Ethics and Arm's Length Recruitment *80*
Selection of Participants: Diversity *81*
Interview Questions *85*
Conducting the Interviews: Rules to Apply *86*
Data Management *88*
4.5 Data Analysis 88
Coding *88*
Interrater Reliability *90*
4.6 Conclusion: The Challenges and Limits of the Methodology 92

Chapter 5 Contemporary Media in Indonesia: From State Control to Market Mechanism… 94

5.1 Applying the Propaganda Model 95
Media Ownership and Profit Orientation *95*
Advertising *100*
Sourcing *104*
Flak *107*
Old-School Flak 107
Lawful Flak 109
Anti-Communism and Fear *111*
5.2 Conclusion 112

Chapter 6 Facing Digital Disruption: The Entry of New Players in the Journalistic Field, Social Media, the Spread of Hoaxes, and Data Journalism 114

6.1 Entry of New Players to the Field and Their Impact on the Old Players 116
6.2 The Fight for Traffic and the Diminished Quality of Journalism 122
6.3 Spread of Hoaxes 125
Political Hoaxes *127*
Hoaxes Targeting Government Programs and Agencies *131*
Impact of Hoaxes on News Media *133*
6.4 Data Journalism to Distinguish Journalism 134
6.5 Discussion 139
6.6 Conclusion 143

Chapter 7 Content Analysis of Selected Data Journalism Projects 145

7.1 Content Analysis of Each News Media Outlet 146
Kompas.com *146*
Tempo.co *152*
Katadata.co.id *157*

Tirto.id *162*
Lokadata.id *166*
7.2 Discussion 171
Topic, Tone, and Creator of the Infographics *171*
Data in Infographics *175*
Data Presentation, Visualisation Features, and Infographic Formats *177*
Distinction and Collaboration *179*
7.3 Conclusion 181

Chapter 8 The Big Old Machines: Data Journalism in Legacy Media Outlets. 184

8.1 Kompas.com 187
Politics and Public Policy: Scarcity in Historical Data *188*
Economics: Relying on the Existing Resources *189*
Institutions and Fields: Paid Courses from Other Agencies *190*
Organisation-Level Dynamics: The Ad Hoc Team *192*
Cultural History, and Technology and News: "We Do Not Want the Technology to Destroy Us" *193*
8.2 Tempo.co 195
Politics and Public Policy: A Need for a One-Door Data Policy *196*
Economics: "Everyone Does Everything" *198*
Institutions and Fields: Training and Collaboration *200*
Organisation-Level Dynamics: The Appetisers *202*
Cultural History, and Technology and News: "Issue-Driven" *203*
8.3 Discussion 205
8.4 Conclusion 209

Chapter 9 The Newcomers: Data Journalism in Newer Online News Media Outlets…….. 211

9.1 Katadata.co.id 215
Politics and Public Policy: Our Problem Is the Availability of Data *217*
Economics: Combining Data Skills and Journalistic Skills *218*
Institutions and Fields: Fight for Talents *221*
Organisation-Level Dynamics: Adjusting Organisational Structures *223*
Cultural History, and Technology and News: Driven by Data *225*
9.2 Tirto.id 227
Politics and Public Policy: Government Data as Not Suitable for Investigative Stories . *228*
Economics: Many Tools, Lack of Human Resources *230*
Institutions and Fields: A Journalist Has To Learn Data Skills *231*
Organisation-Level Dynamics: There Are Many Ways To Tell a Story *232*
Cultural History, Technology, and News: Driven by Current Affairs *233*
9.3 Lokadata.id 234
Politics and Public Policy: There is Always an Alternative to Replacing Missing Data . *236*
Economics: A New Business Model *237*
Institution and Fields: Human Resources for Client-Based Projects *238*
Organisation-Level Dynamics: The Editorial Team Is the "General" *240*
Cultural History and Technology and News: The Visual Element Is the Spearhead *241*
9.4 Discussion 243
9.5 Conclusion 247

Chapter 10 Beyond the Journalistic Field: The Government Agencies 249

10.1 Indonesiabaik.id and Finance Media 251
10.2 Responses to Disinformation and Data Presentation 254
10.3 Capacity Building and Human Resources 258

10.4 Planning, Work Process, and Data Validity 261
10.5 Access to Data 263
10.6 Discussion 265
10.7 Conclusion 267

Chapter 11 Conclusion 270

11.1 Data To Differentiate Journalism Content From Other Content 271
11.2 Challenges and Opportunities in Adopting Data Journalism 273
11.3 Changes in the Newsroom and Beyond the Journalistic Field 276
11.4 Mapping the Adoption of Data Journalism in Indonesia 277
11.5 Recommendations 279
Future Research 279
Expanding Business Scope 280
Government To Improve Access to Data 281
Donor Agencies To Provide Business Development Training 281

Appendix 1 Ethical Clearance to Conduct Research 283

Appendix 2 Participants Information Sheet and Consent Form 284

Appendix 3 Selected Interview Data 287

References 304

List of Figures and Tables

Figures

Figure 2.1 Selected Research Publications on Data Journalism Between 2011 and 2021 29
Figure 2.2 A Typology of Computer-Assisted Reporting, Data Journalism, and Computational Journalism 31
Figure 3.1 The Field of Cultural Production Within the Field of Power 49
Figure 3.2 Screenshot From the Interview Between Atta Halilintar and President Joko Widodo 62
Figure 3.3 The Conceptual Framework of This Study 70
Figure 5.1 Advertising Spending at Four Media Platforms in Indonesia from 1997 to 2019 (IDR Billion) 101
Figure 5.2 The Biggest Advertisers in 2019 (USD Million) 103
Figure 5.3 Recommendations Issued by the Indonesian Press Council in 2018 by Complainants 111
Figure 6.1 A Screenshot of AJI Surabaya's (the Surabaya Branch of the Alliance of Independent Journalists) Twitter 125
Figure 6.2 Growth in the Use of the Internet by the Indonesian Population 126
Figure 6.3 Screenshots from Facebook Posts 129
Figure 6.4 Screenshots from Facebook and Twitter Posts 130
Figure 6.5 Screenshots from Facebook Posts 130
Figure 6.6 Minister of Finance Sri Mulyani Clarifies a Hoax on Her Instagram Account 132
Figure 6.7 An Infographic Published by Katadata.co.id Responding to Hoaxes 137
Figure 6.8 An Infographic Published by Katadata.co.id Clarifying Debate Over Economic Turmoil in Indonesia in 2015 138
Figure 7.1 A Screenshot from Kompas Website 147
Figure 7.2 A Screenshot from Kompas Website 148
Figure 7.3 A Screen Capture from Tempo Homepage Showing Tabs, Including "Grafis" (Blurred) and "Indeks" 152
Figure 7.4 The Index Page to Search Previous Stories on Tempo 153
Figure 7.5 A Screen Capture from Katadata's Homepage Showing The "Jurnalisme Data" Tab 158
Figure 7.6 Screen Capture from Katadata's "Jurnalisme Data" Page 158
Figure 7.7 A Screen Capture from Tirto Homepage Showing "Infografik" Index 163
Figure 7.8 Main Menu on Lokadata's Homepage 167
Figure 7.9 Infographics in Lokadata's Multimedia Page 168
Figure 7.10 The Number of People Involved in Each Infographic 174
Figure 10.1 Homepage of Indonesiabaik.id (Left) and Media Keuangan E-magazine (Right) 253
Figure 10.2 Capture of Disinformation (Left) Made by Rizal Ramli and His Clarification (Right) 255
Figure 10.3 Infographic from Indonesiabaik.id Debunking Hoaxes About Sinovac Covid-19 Vaccine Roll Out in Indonesia 257
Figure 11.1 Map of the Adoption of Data Journalism in Indonesia 279

Tables

Table 3.1 Types of Misinformation and Disinformation 61
Table 3.2 Definitions of Data Journalism 65
Table 3.3 List of Contemporary News Values 66
Table 4.1 List of Interviewees 83

Table 4.2 List of Questions to Answer This Research Questions 86
Table 4.3 Coding Framework for Analysing Data-Driven Journalism Work 89
Table 5.1 Indonesia's Media and Digital Conglomerates 97
Table 5.2 Violence Against Journalism (2015–2019) 108
Table 5.3 Perpetrators of Violence Against Journalism (2015–2019) 109
Table 5.4 Complaints Lodged to The Press Council 110
Table 5.5 Complaint Resolution 110
Table 6.1 List of Participants who are Quoted in This Chapter 115
Table 6.2 The Overall Indonesian Facebook Page by the Number of Likes 121
Table 6.3 Top Ten Indonesian News Media and Non-News Media Brand on Facebook by the Number of Likes 121
Table 7.1 Ten Infographics from Kompas 148
Table 7.2 Topic of Infographics from Kompas 149
Table 7.3 Roles and Number of People Involved in the Production of Infographics in Kompas 150
Table 7.4 Sources of Data and Their Occurrences in Ten Infographics from Kompas 150
Table 7.5 Sources in Kompas's infographics 150
Table 7.6 Types of Data and Their Occurrences in Ten Infographics from Kompas 151
Table 7.7 Visual Resources and Their Occurrences in Ten Infographics from Kompas 151
Table 7.8 Ten Infographics from Tempo 153
Table 7.9 Topic of Infographics from Tempo 154
Table 7.10 Tone of Infographics from Tempo 154
Table 7.11 Roles and Number of People Involved in the Production of Infographics in Tempo 155
Table 7.12 Data Sources and Their Occurrences in the Production of Infographics in Tempo 155
Table 7.13 Sources in Tempo's Infographics 156
Table 7.14 Types of Data and Their Occurrences in Ten Infographics from Tempo 156
Table 7.15 Visual Resources and Their Occurrences in Ten Infographics from Tempo 157
Table 7.16 Ten Infographics from Katadata 159
Table 7.17 Topic of Infographics from Katadata 159
Table 7.18 Tone of Infographics from Katadata 160
Table 7.19 Roles and Number of People Involved in the Production of Infographics in Katadata 160
Table 7.20 Sources of Data and Their Occurrences in Ten Infographics from Katadata 161
Table 7.21 Sources in Katadata's Infographics 161
Table 7.22 Types of Data and Their Occurrences in Ten Infographics from Katadata 162
Table 7.23 Visual Resources and Their Occurrences in Ten Infographics from Katadata 162
Table 7.24 Ten Infographics from Tirto 163
Table 7.25 Topic of Infographics from Tirto 164
Table 7.26 Tone of Infographics from Tirto 164
Table 7.27 Roles and Number of People Involved in the Production of Infographics in Tirto 165
Table 7.28 Sources of Data and Their Occurrences in Ten Infographics from Tirto 165
Table 7.29 Sources of Infographics from Tirto 165
Table 7.30 Types of Data and Their Occurrences in Ten Infographics from Tirto 166
Table 7.31 Visual Resources and Their Occurrences in Ten Infographics from Tirto 166
Table 7.32 Ten Infographics from Lokadata 168
Table 7.33 Topic of Infographics from Lokadata 169
Table 7.34 Tone of Infographics from Lokadata 169
Table 7.35 Roles and People Involved in the Production of Infographics in Lokadata 170
Table 7.36 Types of Data and Their Occurrences in Ten Infographics from Lokadata 171
Table 7.37 Visual Resources and Their Occurrences in Ten Infographics from Lokadata 171
Table 7.38 Topic of Infographics 172
Table 7.39 Infographic's Tone 174
Table 7.40 The Number of People Involved in Each Infographic by News Outlet 175
Table 7.41 Data Sources from 50 Infographics 176

Table 7.42 Number of Sources in 50 Infographics 176
Table 7.43 Types of Data in 50 Infographics 177
Table 7.44 Visual Resources 178
Table 7.45 Narrative in Infographics 178
Table 7.46 Sharing Buttons 178
Table 7.47 Tone of Infographics Based on Topic 180
Table 7.48 Roles and People Involved in Producing 50 Infographics 181
Table 8.1 Research Participants Quoted in This Chapter 186
Table 9.1 Research Participants from Katadata, Tirto, and Lokadata 213
Table 9.2 Katadata's Production Team 223
Table 10.1 List of Participants Quoted in This Chapter 250

Abstract

News media outlets in Indonesia have been struggling to maintain their businesses and roles in society in these challenging times. News outlets have dealt with the digital disruption that has been decimating the news industry during the past ten years. In that period, Indonesia has also held three contentious elections – the presidential elections of 2014 and 2019 and the Jakarta gubernatorial election of 2017 – all of which were affected by hoaxes and disinformation on social media platforms. Hence, news media outlets striving to find sustainable business models are now facing a complex information ecosystem that demands rigorous verification.

This thesis examines how local Indonesian media outlets have adopted data journalism to fight against hoaxes and disinformation and to support their businesses. It also explores how some government institutions have implemented data journalism skills to improve their websites and public communications. Through a thematic analysis of rich natural data, semi-structured interviews, and a case study of five online news outlets, this research has revealed the changes brought by data journalism in Indonesian newsrooms and how agents outside the journalistic field are influencing the development of data journalism.

After presenting the current news media situation in Indonesia as a background and applying the propaganda model, this study demonstrated the challenges the news industry players faced in the wake of the digital disruption caused by the arrivals of new players in the journalistic field. The established players have been forced to improve their journalism products by adopting data journalism. As well, the impact of the government's micro-level policy and human resources on data availability is a key obstacle to the performance of data journalism. Yet, these obstacles are not discouraging journalists. News outlets that are not affiliated with legacy media organisations appear to have greater capacity to adapt to the new journalistic genres.

This thesis offers a picture of the dynamics of news production in Indonesia: the emerging new roles in the newsroom, the supporting roles that have become

instrumental, and how journalists need to distribute their authority and renegotiate journalistic doxa to maintain their journalistic cultural capital and at the same time strengthen their economic capital. On a macro level, this research has identified interactions between news outlets, technology companies, not-for-profit organisations, and government institutions crucial to the adoption of data journalism.

This study's findings provide a timely critique of the role of journalism in Indonesia against a backdrop of digital disruption of the news industry in an era of disinformation. This thesis suggests that rather than competing with social media in terms of speed and productivity, news media need to embrace journalistic cultural capital, including intelligent commentary, accuracy, and clarity. It also encourages news outlets and their journalists to deploy technology and collaborate to improve the quality of their work and to initiate new business models.

Keywords: Indonesia's news media, data journalism, digital disruption, hoaxes and disinformation, field theory, government public relations.