

Contents

<i>List of Figures</i>	ix
<i>List of Tables</i>	x
<i>List of Boxes</i>	xi
<i>About the Author</i>	xii
<i>Preface</i>	xiii
1 Introduction	1
1.1 The web: technology, history and governance	1
1.2 Examples of online computer-mediated interaction	5
1.3 Cyberspace, virtual communities and online social networks	7
1.3.1 Cyberspace	8
1.3.2 Virtual communities	10
1.3.3 Online social networks	12
1.4 Disciplinary approaches to researching the web	13
1.5 Construct validity of web data	16
1.6 Shaping force or social tool?	16
1.7 Conclusion	17
I WEB SOCIAL SCIENCE METHODS	19
2 Online research methods	21
2.1 Dimensions and modes of online research	21
2.2 Online surveys	25
2.2.1 Sampling: basics	26
2.2.2 Types of Internet surveys	27
2.2.3 Online surveys: process and ethics	28
2.2.4 Online survey example: election studies and election polls	29
2.2.5 Other issues	30
2.3 Online interviews and focus groups	31
2.3.1 Types of online interviews	31
2.3.2 Online interviews: process and ethics	32
2.3.3 Online focus groups	33
2.3.4 Other issues	34
2.4 Web content analysis	35
2.4.1 Quantitative web content analysis	35
2.4.2 Qualitative web content analysis	38
2.4.3 Web content used in data preparation	40

2.5	Social media network analysis	40
2.6	Online experiments	40
2.6.1	Online laboratory experiments	40
2.6.2	Online field experiments	41
2.6.3	Online natural experiments	41
2.7	Online field research	41
2.8	Digital trace data: ethics	43
2.9	Conclusion	46
3	Social media networks	48
3.1	Social networks: concepts and definitions	48
3.1.1	An example school friendship network	51
3.2	Social network analysis	55
3.2.1	Social relations and social networks	55
3.2.2	Statistical analysis of social networks	58
3.3	Social media networks	61
3.3.1	Representing online interactions as interpersonal networks	61
3.3.2	Threaded conversations	65
3.3.3	Social network sites	69
3.3.4	Microblogs	72
3.4	Social networks, information networks and communication networks	73
3.4.1	Flows of information and attention	74
3.5	SNA metrics for the example school friendship network (advanced)	75
3.5.1	Node-level SNA metrics	75
3.5.2	Network-level SNA metrics	76
3.6	Conclusion	77
4	Hyperlink networks	78
4.1	Hyperlink networks: background	78
4.1.1	Motives for sending, and benefits of receiving, hyperlinks	79
4.1.2	Hyperlink network nodes, ties and boundaries	80
4.2	Three disciplinary perspectives on hyperlink networks	82
4.2.1	Citation hyperlink networks	82
4.2.2	Issue hyperlink networks	83
4.2.3	Social hyperlink networks	83
4.2.4	Comparing the disciplinary perspectives	84
4.3	Tools for hyperlink network research	86
4.3.1	Web crawlers	86
4.3.2	Historical web data	91
4.3.3	Blogs	92
4.4	Conclusion	94

II	WEB SOCIAL SCIENCE EXAMPLES	95
5	Friendship formation and social influence	97
5.1	Homophily in friendship formation	97
5.1.1	Measurement issues	97
5.1.2	Friendship formation in Facebook	99
5.1.3	Online dating	101
5.2	Social influence	103
5.2.1	Identifying social influence	103
5.2.2	Social influence in social media	105
5.3	Conclusion	110
6	Organisational collective behaviour	111
6.1	Collective behaviour on the web: background	111
6.2	Collective action and public goods	113
6.2.1	Hyperlink networks as information public goods	113
6.3	Networked social movements	114
6.4	Conclusion	118
7	Politics and participation	119
7.1	Visibility of political information	119
7.1.1	Power laws and politics online	119
7.2	Social and political engagement	123
7.2.1	Web use and social capital	123
7.2.2	Political engagement	127
7.3	Political homophily	129
7.3.1	Divided they blog	130
7.4	An introduction to power laws (advanced)	132
7.5	Conclusion	136
8	Government and public policy	138
8.1	Delivery of information to citizens	138
8.1.1	Government hyperlink networks	139
8.2	Government authority	142
8.2.1	Civil unrest	143
8.2.2	Internet censorship	144
8.3	Public policy modelling	146
8.3.1	The mapping principle	146
8.3.2	The macroeconomics of a virtual world	147
8.4	Conclusion	147
9	Production and collaboration	149
9.1	Peer production and information public goods	149
9.1.1	Peer production	150
9.1.2	Information public goods	152

9.2	Scholarly activity and communication	156
9.2.1	Webometric measures of scholarly output and impact	156
9.2.2	Reconfiguring access to scholarly information and expertise	158
9.3	Network structure and achievement	159
9.3.1	Identifying a 'network effect' in outcomes	159
9.3.2	Structural holes in Second Life	160
9.4	Conclusion	162
10	Commerce and marketing	163
10.1	Distribution of product sales	163
10.1.1	Power laws and superstars	164
10.1.2	Evidence for the Long Tail	166
10.2	Influence in markets	168
10.2.1	Referrals from friends	169
10.2.2	Ratings systems	171
10.2.3	Recommender systems	173
10.3	Conclusion	173
	<i>References</i>	175
	<i>Index</i>	191