

# Social Networks And Health Models Methods And Applications

Influence and Behavior Analysis in Social Networks and Social Media  
Egocentric Network Analysis  
Social Networks and Health  
The Oxford Handbook of Health Communication, Behavior Change, and Treatment Adherence  
Exponential Random Graph Models for Social Networks  
Models for Social Networks With Statistical Applications  
Algebraic Models for Social Networks  
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An Introduction to Exponential Random Graph Modeling  
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Models and Methods in Social Network Analysis  
Social Network Analysis and Education  
Social Monitoring for Public Health  
Social Networks and Travel Behaviour  
Social Media Data Mining and Analytics  
Social Support and Physical Health

## Influence and Behavior Analysis in Social Networks and Social Media

The book should be of interest to all researchers interested in using social network methods.

## Egocentric Network Analysis

In this book, leading methodologists address the issue of how effectively to apply the latest developments in social network analysis to behavioural and social science disciplines. Topics examined include: ways to specify the network contents to be studied; how to select the method for representing network structures; how social network analysis has been used to study interorganizational relations via the resource dependence model; how to use a contact matrix for studying the spread of disease in epidemiology; and how cohesion and structural equivalence network theories relate to studying social influence. The book also offers some statistical models for social support networks.

## Social Networks and Health

This text presents a key to understanding how ideas, products and opinions take off and spread throughout society - referred to as the diffusion of innovation - and provides a means to estimate how fast or slow that spread occurs. The diffusion of innovations occurs among individuals in a social system, and the pattern of communications among these individuals is a social network. The network determines how quickly innovations diffuse and the timing of each individual's adoption. The book thus analyses how social networks structure the diffusion of innovation.

### **The Oxford Handbook of Health Communication, Behavior Change, and Treatment Adherence**

This volume introduces the basic concepts of Exponential Random Graph Modeling (ERGM), gives examples of why it is used, and shows the reader how to conduct basic ERGM analyses in their own research. ERGM is a statistical approach to modeling social network structure that goes beyond the descriptive methods conventionally used in social network analysis. Although it was developed to handle the inherent non-independence of network data, the results of ERGM are interpreted in similar ways to logistic regression, making this a very useful method for examining social systems. Recent advances in statistical software have helped make ERGM accessible to social scientists, but a concise guide to using ERGM has been lacking. An Introduction to Exponential Random Graph Modeling, by Jenine K. Harris, fills that gap, by using examples from public health, and walking the reader through the process of ERGM model-building using R statistical software and the statnet package.

### **Exponential Random Graph Models for Social Networks**

In the summer of 2002, the Office of Naval Research asked the Committee on Human Factors to hold a workshop on dynamic social network and analysis. The primary purpose of the workshop was to bring together scientists who represent a diversity of views and approaches to share their insights, commentary, and critiques on the developing body of social network analysis research and application. The secondary purpose was to provide sound models and applications for current problems of national importance, with a particular focus on national security. This workshop is one of several activities undertaken by the National Research Council that bears on the contributions of various scientific disciplines to understanding and defending against terrorism. The presentations were grouped in four sessions " Social Network Theory Perspectives, Dynamic Social Networks, Metrics and Models, and Networked Worlds " each of which concluded with a discussant-led roundtable discussion among the presenters and workshop attendees on the themes and issues raised in the session.

### **Models for Social Networks With Statistical Applications**

This book presents recent developments on the theoretical, algorithmic, and application aspects of Big Data in Complex and Social Networks. The book consists of four parts, covering a wide range of topics. The first part of the book focuses on data storage and data processing. It explores how the efficient storage of data can fundamentally support intensive data access and queries, which enables sophisticated analysis. It also looks at how data processing and visualization help to communicate information clearly and efficiently. The second part of the book is devoted to the extraction of essential information and the prediction of web content. The book shows how Big Data analysis can be used to understand the interests, location, and search history of users and provide more accurate predictions of User Behavior. The latter two parts of the book cover the protection of privacy and security, and emergent applications of big data and social networks. It analyzes how to model rumor diffusion, identify misinformation from massive data, and design intervention strategies. Applications of big data and social networks in multilayer networks and multiparty systems are also covered in-depth.

### **Algebraic Models for Social Networks**

Participatory Health through Social Media explores how traditional models of healthcare can be delivered differently through social media and online games, and how these technologies are changing the relationship between patients and healthcare professionals, as well as their impact on health behavior change. The book also examines how the hospitals, public health authorities, and inspectorates are currently using social media to facilitate both information distribution and collection. Also looks into the opportunities and risks to record and analyze epidemiologically relevant data retrieved from the Internet, social media, sensor data, and other digital sources. The book encompasses topics such as patient empowerment, gamification and social games, and the relationships between social media, health behavior change, and health communication crisis during epidemics. Additionally, the book analyzes the possibilities of big data generated through social media. Authored by IMIA Social Media working group, this book is a valuable resource for healthcare researchers and professionals, as well as clinicians interested in using new media as part of their practice or research. Presents a multidisciplinary point of view providing the readers with a broader perspective Brings the latest case studies and technological advances in the area, supported by an active international community of members who actively work in this area Endorsed by IMIA Social Media workgroup, guaranteeing trustable information from the most relevant experts on the subject Examines how the hospitals, public health authorities, and inspectorates are currently using social media to facilitate both information distribution and collection

### **Research Methods in Social Network Analysis**

This timely book focuses on influence and behavior analysis in the broader context of social network applications and social media. Twitter accounts of telecommunications companies are analyzed. Rumor sources in finite graphs with boundary

effects by message-passing algorithms are identified. The coherent, state-of-the-art collection of chapters was initially selected based on solid reviews from the IEEE/ACM International Conference on Advances in Social Networks, Analysis, and Mining (ASONAM '17). Chapters were then improved and extended substantially, and the final versions were rigorously reviewed and revised to meet the series standards. Original chapters coming from outside of the meeting round out the coverage. The result will appeal to researchers and students working in social network and social media analysis.

### **Diffusion in Social Networks**

Since the publication of Herbert Spencer's *Principles of Sociology* in 1875, the use of social structure as a defining concept has produced a large body of creative speculations, insights, and intuitions about social life. However, writers in this tradition do not always provide the sorts of formal definitions and propositions that are the building blocks of modern social research. In its broad-ranging examination of the kind of data that form the basis for the systematic study of social structure, *Research Methods in Social Network Analysis* marks a significant methodological advance in network studies. As used in this volume, social structure refers to a bundle of intuitive natural language ideas and concepts about patterning in social relationships among people. In contrast, social networks is used to refer to a collection of precise analytic and methodological concepts and procedures that facilitate the collection of data and the systematic study of such patterning. Accordingly, the book's five sections are arranged to address analytical problems in a series of logically ordered stages or processes. The major contributors define the fundamental modes by which social structural phenomena are to be represented; how boundaries to a social structure are set; how the relations of a network are measured in terms of structure and content; the ways in which the relational structure of a network affects system actors; and how actors within a social network are clustered into cliques or groups. The chapters in the last section build on solutions to problems proposed in the previous sections. This highly unified approach to research design combined with a representative diversity of viewpoints makes *Research Methods in Social Network Analysis* a state-of-the-art volume.

### **Social Networks and Health**

Public health thrives on high-quality evidence, yet acquiring meaningful data on a population remains a central challenge of public health research and practice. Social monitoring, the analysis of social media and other user-generated web data, has brought advances in the way we leverage population data to understand health. Social media offers advantages over traditional data sources, including real-time data availability, ease of access, and reduced cost. Social media allows us to ask, and answer, questions we never thought possible. This book presents an overview of the progress on uses of social monitoring to study public health over the past decade. We explain available data sources, common methods, and survey research on social monitoring in a wide range of public health areas. Our examples come from topics such as disease

surveillance, behavioral medicine, and mental health, among others. We explore the limitations and concerns of these methods. Our survey of this exciting new field of data-driven research lays out future research directions.

### **Participatory Health Through Social Media**

During the last 25 years, life expectancy at age 50 in the United States has been rising, but at a slower pace than in many other high-income countries, such as Japan and Australia. This difference is particularly notable given that the United States spends more on health care than any other nation. Concerned about this divergence, the National Institute on Aging asked the National Research Council to examine evidence on its possible causes. According to *Explaining Divergent Levels of Longevity in High-Income Countries*, the nation's history of heavy smoking is a major reason why lifespans in the United States fall short of those in many other high-income nations. Evidence suggests that current obesity levels play a substantial part as well. The book reports that lack of universal access to health care in the U.S. also has increased mortality and reduced life expectancy, though this is a less significant factor for those over age 65 because of Medicare access. For the main causes of death at older ages -- cancer and cardiovascular disease -- available indicators do not suggest that the U.S. health care system is failing to prevent deaths that would be averted elsewhere. In fact, cancer detection and survival appear to be better in the U.S. than in most other high-income nations, and survival rates following a heart attack also are favorable. *Explaining Divergent Levels of Longevity in High-Income Countries* identifies many gaps in research. For instance, while lung cancer deaths are a reliable marker of the damage from smoking, no clear-cut marker exists for obesity, physical inactivity, social integration, or other risks considered in this book. Moreover, evaluation of these risk factors is based on observational studies, which -- unlike randomized controlled trials -- are subject to many biases.

### **Health Behavior**

Harness the power of social media to predict customer behavior and improve sales Social media is the biggest source of Big Data. Because of this, 90% of Fortune 500 companies are investing in Big Data initiatives that will help them predict consumer behavior to produce better sales results. *Social Media Data Mining and Analytics* shows analysts how to use sophisticated techniques to mine social media data, obtaining the information they need to generate amazing results for their businesses. *Social Media Data Mining and Analytics* isn't just another book on the business case for social media. Rather, this book provides hands-on examples for applying state-of-the-art tools and technologies to mine social media - examples include Twitter, Wikipedia, Stack Exchange, LiveJournal, movie reviews, and other rich data sources. In it, you will learn: The four key characteristics of online services-users, social networks, actions, and content The full data discovery lifecycle-data extraction, storage, analysis, and visualization How to work with code and extract data to create solutions How to use Big Data to make accurate customer predictions How to personalize the social media experience using machine

learning Using the techniques the authors detail will provide organizations the competitive advantage they need to harness the rich data available from social media platforms.

### **Social and Economic Networks**

An in-depth, comprehensive and practical guide to egocentric network analysis, focusing on fundamental theoretical, research design, and analytic issues.

### **Explaining Divergent Levels of Longevity in High-Income Countries**

In aiming to understand and model peoples' out-of-home movements, the academic field of transport planning is confronted with two major challenges; firstly, leisure travel is increasing in importance and is more complex and variable than work-related travel; and secondly, traditional aggregated transport models do not include any information on peoples' social interactions or their personal social networks. These two main factors have driven transport planners to focus on peoples' interaction and their social network. Providing an overview of selected exemplary studies, this volume addresses the overlap between transport planning and methods of social network analysis; applied methods of social network analysis and related empirical results; and current challenges and new research questions in this field.

### **Social Networks and Health**

The ego-net approach to social network analysis, which takes discrete individual actors and their contacts as its starting point, is one of the most widely used approaches in the field. This is the first textbook to take readers through each stage of ego-net research, from conception, through research design and data gathering to analysis. It starts with the basics, assuming no prior knowledge of social network analysis, but then moves on to introduce cutting edge innovations, covering both new statistical approaches to ego-net analysis and also the most recent thinking on mixing methods (quantitative and qualitative) to achieve depth and rigour. It is an absolute must for anybody wishing to explore the importance of networks.

### **Network Models of the Diffusion of Innovations**

### **Social Network Analysis with Applications**

This book brings together conceptual and empirical insights to explore the interconnections between social networks based

on Information and Communication Technologies (ICT) and travel behaviour in urban environments. Over the past decade, rapid development of ICT has led to extensive social impacts and influence on travel and mobility patterns within urban spaces. A new field of research of digital social networks and travel behaviour is now emerging. This book presents state-of-the-art knowledge cutting-edge research, and integrated analysis methods from the fields of social networks, travel behaviour and urban analysis. It explores the challenges related to the question of how we can synchronize among social networks activities, transport means, intelligent communication/information technologies and the urban form. This innovative book encourages multidisciplinary insights and fusion among three disciplines of social networks, travel behaviour and urban analysis. It offers new horizons for research and will be of interest to students and scholars studying mobilities, transport studies, urban geography, urban planning, the built environment, and urban policy.

### **Dynamic Social Network Modeling and Analysis**

Relationships and the pattern of relationships have a large and varied influence on both individual and group action. The fundamental distinction of social network analysis research is that relationships are of paramount importance in explaining behavior. Because of this, social network analysis offers many exciting tools and techniques for research and practice in a wide variety of medical and public health situations including organizational improvements, understanding risk behaviors, coordinating coalitions, and the delivery of health care services. This book provides an introduction to the major theories, methods, models, and findings of social network analysis research and application. In three sections, it presents a comprehensive overview of the topic; first in a survey of its historical and theoretical foundations, then in practical descriptions of the variety of methods currently in use, and finally in a discussion of its specific applications for behavior change in a public health context. Throughout, the text has been kept clear, concise, and comprehensible, with short mathematical formulas for some key indicators or concepts. Researchers and students alike will find it an invaluable resource for understanding and implementing social network analysis in their own practice.

### **Dissemination and Implementation Research in Health**

In this important new Handbook, the editors have gathered together a range of leading contributors to introduce the theory and practice of multilevel modeling. The Handbook establishes the connections in multilevel modeling, bringing together leading experts from around the world to provide a roadmap for applied researchers linking theory and practice, as well as a unique arsenal of state-of-the-art tools. It forges vital connections that cross traditional disciplinary divides and introduces best practice in the field. Part I establishes the framework for estimation and inference, including chapters dedicated to notation, model selection, fixed and random effects, and causal inference. Part II develops variations and extensions, such as nonlinear, semiparametric and latent class models. Part III includes discussion of missing data and robust methods,

assessment of fit and software. Part IV consists of exemplary modeling and data analyses written by methodologists working in specific disciplines. Combining practical pieces with overviews of the field, this Handbook is essential reading for any student or researcher looking to apply multilevel techniques in their own research.

### **Analyzing Social Media Networks with NodeXL**

Written by a sociologist, a graph theorist, and a statistician, this title provides social network analysts and students with a solid statistical foundation from which to analyze network data. Clearly demonstrates how graph-theoretic and statistical techniques can be employed to study some important parameters of global social networks. The authors use real life village-level social networks to illustrate the practicalities, potentials, and constraints of social network analysis ("SNA"). They also offer relevant sampling and inferential aspects of the techniques while dealing with potentially large networks. Intended Audience This supplemental text is ideal for a variety of graduate and doctoral level courses in social network analysis in the social, behavioral, and health sciences

### **Social Network Analysis**

The historic Binnenhof, seat of the Dutch government in The Hague, provided the setting (January 1985) for a conference in which participants from eleven countries met to consider the theme: Support networks in a caring community: research and policy, fact and fiction. At the outset, conference leadership - provided by Professors J.M.L. Jonker (The Netherlands) and R.A.B. Leaper (United Kingdom) urged the conferees not to allow their enthusiasm for informal support networks to combine with the pervasive awareness of the failures of welfare states into a simplistic stance of advocacy, with a consequent appeal to politicians to direct state funds accordingly. Legitimate criticisms of the responses of welfare states to the needs of citizens were to be seen as the context for discussion, not the substance of conference deliberations. More specifically, if it is now apparent to many people that governmental assistance of individuals with social needs can lead to an undesirable dependency on the part of increasingly passive citizens, that awareness does not lend logical support to an ideological position that governmental expenditures are pernicious per se - to be replaced as rapidly as possible by a return to reliance on self, family, friends and associations that are developed voluntarily and financed by those who are sufficiently interested.

### **The SAGE Handbook of Social Network Analysis**

This book will change the way we understand the future of our planet. It is both alarming and hopeful. James Gustave Speth, renowned as a visionary environmentalist leader, warns that in spite of all the international negotiations and



agreements of the past two decades, efforts to protect Earth's environment are not succeeding. Still, he says, the challenges are not insurmountable. He offers comprehensive, viable new strategies for dealing with environmental threats around the world. The author explains why current approaches to critical global environmental problems - climate change, biodiversity loss, deterioration of marine environments, deforestation, water shortages, and others - don't work. He offers intriguing insights into why we have been able to address domestic environmental threats with some success while largely failing at the international level. Setting forth eight specific steps to a sustainable future, Speth convincingly argues that dramatically different government and citizen action are now urgent. If ever a book could be described as essential, this is it.

### **The SAGE Handbook of Multilevel Modeling**

A comprehensive introduction to social network analysis that hones in on basic centrality measures, social links, subgroup analysis, data sources, and more. Written by military, industry, and business professionals, this book introduces readers to social network analysis, the new and emerging topic that has recently become of significant use for industry, management, law enforcement, and military practitioners for identifying both vulnerabilities and opportunities in collaborative networked organizations. Focusing on models and methods for the analysis of organizational risk, *Social Network Analysis with Applications* provides easily accessible, yet comprehensive coverage of network basics, centrality measures, social link theory, subgroup analysis, relational algebra, data sources, and more. Examples of mathematical calculations and formulas for social network measures are also included. Along with practice problems and exercises, this easily accessible book covers: The basic concepts of networks, nodes, links, adjacency matrices, and graphs; Mathematical calculations and exercises for centrality, the basic measures of degree, betweenness, closeness, and eigenvector centralities; Graph-level measures, with a special focus on both the visual and numerical analysis of networks; Matrix algebra, outlining basic concepts such as matrix addition, subtraction, multiplication, and transpose and inverse calculations in linear algebra that are useful for developing networks from relational data; Meta-networks and relational algebra, social links, diffusion through networks, subgroup analysis, and more. An excellent resource for practitioners in industry, management, law enforcement, and military intelligence who wish to learn and apply social network analysis to their respective fields, *Social Network Analysis with Applications* is also an ideal text for upper-level undergraduate and graduate level courses and workshops on the subject.

### **Social Network Analysis for Ego-Nets**

Analyzing Social Media Networks with NodeXL offers backgrounds in information studies, computer science, and sociology. This book is divided into three parts: analyzing social media, NodeXL tutorial, and social-media network analysis case

studies. Part I provides background in the history and concepts of social media and social networks. Also included here is social network analysis, which flows from measuring, to mapping, and modeling collections of connections. The next part focuses on the detailed operation of the free and open-source NodeXL extension of Microsoft Excel, which is used in all exercises throughout this book. In the final part, each chapter presents one form of social media, such as e-mail, Twitter, Facebook, Flickr, and Youtube. In addition, there are descriptions of each system, the nature of networks when people interact, and types of analysis for identifying people, documents, groups, and events. Walks you through NodeXL, while explaining the theory and development behind each step, providing takeaways that can apply to any SNA Demonstrates how visual analytics research can be applied to SNA tools for the mass market Includes case studies from researchers who use NodeXL on popular networks like email, Facebook, Twitter, and wikis Download companion materials and resources at <https://nodexl.codeplex.com/documentation>

### **Digital Social Networks and Travel Behaviour in Urban Environments**

Networks of relationships help determine the careers that people choose, the jobs they obtain, the products they buy, and how they vote. The many aspects of our lives that are governed by social networks make it critical to understand how they impact behavior, which network structures are likely to emerge in a society, and why we organize ourselves as we do. In *Social and Economic Networks*, Matthew Jackson offers a comprehensive introduction to social and economic networks, drawing on the latest findings in economics, sociology, computer science, physics, and mathematics. He provides empirical background on networks and the regularities that they exhibit, and discusses random graph-based models and strategic models of network formation. He helps readers to understand behavior in networked societies, with a detailed analysis of learning and diffusion in networks, decision making by individuals who are influenced by their social neighbors, game theory and markets on networks, and a host of related subjects. Jackson also describes the varied statistical and modeling techniques used to analyze social networks. Each chapter includes exercises to aid students in their analysis of how networks function. This book is an indispensable resource for students and researchers in economics, mathematics, physics, sociology, and business.

### **Big Data in Complex and Social Networks**

This book provides an account of the theoretical and methodological underpinnings of exponential random graph models (ERGMs).

### **Advances in Social Network Analysis**

This volume is directed toward researchers and health professionals with an interest in the interstices of social networks and health. It consists of original papers that address critical themes in health-related social network research and disease prevention.

### **Health Professionals' Education in the Age of Clinical Information Systems, Mobile Computing and Social Networks**

This sparkling Handbook offers an unrivalled resource for those engaged in the cutting edge field of social network analysis. Systematically, it introduces readers to the key concepts, substantive topics, central methods and prime debates. Among the specific areas covered are: Network theory Interdisciplinary applications Online networks Corporate networks Lobbying networks Deviant networks Measuring devices Key Methodologies Software applications. The result is a peerless resource for teachers and students which offers a critical survey of the origins, basic issues and major debates. The Handbook provides a one-stop guide that will be used by readers for decades to come.

### **Social Network Analysis**

Designed to walk beginners through core aspects of collecting, visualizing, analyzing, and interpreting social network data, this book will get you up-to-speed on the theory and skills you need to conduct social network analysis. Using simple language and equations, the authors provide expert, clear insight into every step of the research process—including basic maths principles—without making assumptions about what you know. With a particular focus on NetDraw and UCINET, the book introduces relevant software tools step-by-step in an easy to follow way. In addition to the fundamentals of network analysis and the research process, this Second Edition focuses on: Digital data and social networks like Twitter Statistical models to use in SNA, like QAP and ERGM The structure and centrality of networks Methods for cohesive subgroups/community detection Supported by new chapter exercises, a glossary, and a fully updated companion website, this text is the perfect student-friendly introduction to social network analysis.

### **Support Networks in a Caring Community**

The essential health behavior text, updated with the latest theories, research, and issues Health Behavior: Theory, Research and Practice provides a thorough introduction to understanding and changing health behavior, core tenets of the public health role. Covering theory, applications, and research, this comprehensive book has become the gold standard of health behavior texts. This new fifth edition has been updated to reflect the most recent changes in the public health field with a focus on health behavior, including coverage of the intersection of health and community, culture, and communication, with

detailed explanations of both established and emerging theories. Offering perspective applicable at the individual, interpersonal, group, and community levels, this essential guide provides the most complete coverage of the field to give public health students and practitioners an authoritative reference for both the theoretical and practical aspects of health behavior. A deep understanding of human behaviors is essential for effective public health and health care management. This guide provides the most complete, up-to-date information in the field, to give you a real-world understanding and the background knowledge to apply it successfully. Learn how e-health and social media factor into health communication. Explore the link between culture and health, and the importance of community. Get up to date on emerging theories of health behavior and their applications. Examine the push toward evidence-based interventions, and global applications. Written and edited by the leading health and social behavior theorists and researchers, *Health Behavior: Theory, Research and Practice* provides the information and real-world perspective that builds a solid understanding of how to analyze and improve health behaviors and health.

### **Social Networks and Health**

*Health Professionals' Education in the Age of Clinical Information Systems, Mobile Computing and Social Networks* addresses the challenges posed by information and communication technology to health professionals' education, and the lessons learned from field experiences and research. This book is divided in three parts: "the changing landscape of information and communication technology in health care", in which it discusses how information and communication technology is transforming health care and the implications of these changes for health professions education; "experiences from the field", with real-life examples of health professionals' education in and for the digital era; and "evaluation of students and programs", addressing the use of technology to assess learners as well as the complexity of evaluating programs to enhance competence in an information technology-rich health care world. Written by leading researchers from different parts of the world, the book is a valuable source for educators and professionals who are active or wish to be part of the health informatics field. Brings an in-depth understanding and background on the challenges for education of the health professions brought by information and communication technology. Provides real-life examples on how technology is used in healthcare and how it can be used in education. Presents valuable information in a visually appealing format with tables and figures.

### **Analyzing Social Networks**

This book presents the leading models of social network diffusion that are used to demonstrate the spread of disease, ideas, and behavior. It introduces diffusion models from the fields of computer science (independent cascade and linear threshold), sociology (tipping models), physics (voter models), biology (evolutionary models), and epidemiology (SIR/SIS

and related models). A variety of properties and problems related to these models are discussed including identifying seeds sets to initiate diffusion, game theoretic problems, predicting diffusion events, and more. The book explores numerous connections between social network diffusion research and artificial intelligence through topics such as agent-based modeling, logic programming, game theory, learning, and data mining. The book also surveys key empirical results in social network diffusion, and reviews the classic and cutting-edge research with a focus on open problems.

### **An Introduction to Exponential Random Graph Modeling**

This book provides an introduction to the major theories, methods, models, and findings of social network analysis research and application with attention to medical and public health topics.

### **Social Network Analysis**

The revised and updated edition of this bestselling text provides an accessible introduction to the theory and practice of network analysis in the social sciences. It gives a clear and authoritative guide to the general framework of network analysis, explaining the basic concepts, technical measures and reviewing the available computer programs. The book outlines both the theoretical basis of network analysis and the key techniques for using it as a research tool. Building upon definitions of points, lines and paths, John Scott demonstrates their use in clarifying such measures as density, fragmentation and centralization. He identifies the various cliques, components and circles into which networks are formed, and outlines an approach to the study of socially structured positions. He also discusses the use of multidimensional methods for investigating social networks. Social Network Analysis is an invaluable resource for researchers across the social sciences and for students of social theory and research methods.

### **Models and Methods in Social Network Analysis**

The definitive work in D&I research -- now completely updated and expanded The application of scientific research to the creation of evidence-based policies is a science unto itself -- and one that is never easy. Dissemination and implementation research (D&I) is the study of how scientific advances can be implemented into everyday life, and understanding how it works has never been more important for students and professionals across the scientific, academic, and governmental communities. Dissemination and Implementation Research in Health is a practical guide to making research more consequential, a collection assembled and written by today's leading D&I researchers. Readers of this book are taught to: ♦ Evaluate the evidence base in an effective intervention ♦ Choose a strategy that produces the greatest impact ♦ Design an appropriate and effectual study ♦ Track essential outcomes ♦ Account for the barriers to uptake in communities, social

service agencies, and health care facilities. The challenges to moving research into practice are universal, and they're complicated by the current landscape's reliance on partnerships and multi-center research. In this light, Dissemination and Implementation Research in Health is nothing less than a roadmap to effecting change in the sciences. It will have broad utility to researchers and practitioners in epidemiology, biostatistics, behavioral science, economics, medicine, social work, psychology, and anthropology -- both today and in our slightly better future.

### **Social Network Analysis and Education**

Models and Methods in Social Network Analysis presents the most important developments in quantitative models and methods for analyzing social network data that have appeared during the 1990s. Intended as a complement to Wasserman and Faust's Social Network Analysis: Methods and Applications, it is a collection of articles by leading methodologists reviewing advances in their particular areas of network methods. Reviewed are advances in network measurement, network sampling, the analysis of centrality, positional analysis or blockmodelling, the analysis of diffusion through networks, the analysis of affiliation or 'two-mode' networks, the theory of random graphs, dependence graphs, exponential families of random graphs, the analysis of longitudinal network data, graphical techniques for exploring network data, and software for the analysis of social networks.

### **Social Monitoring for Public Health**

We live in a world that is paradoxically both small and vast; each of us is embedded in local communities and yet we are only a few 'links' away from anyone else in the world. This engaging book represents these interdependencies' positive and negative consequences, their multiple effects and the ways in which a local occurrence in one part of the world can directly affect the rest. Then it demonstrates precisely how these interactions and relationships form. This is a book for the social network novice learning how to study, think about and analyse social networks; the intermediate user, not yet familiar with some of the newer developments in the field; and the teacher looking for a range of exercises, as well as an up-to-date historical account of the field. It is divided into three clear sections: 1. historical & Background Concepts 2. Levels of Analysis 3. Advances, Extensions and Conclusions. The book provides a full overview of the field - historical origins, common theoretical perspectives and frameworks; traditional and current analytical procedures and fundamental mathematical equations needed to get a foothold in the field.

### **Social Networks and Travel Behaviour**

This edited volume brings together top-notch scientists and practitioners to illustrate intersections between health

communication, behavior change, and treatment adherence.

### **Social Media Data Mining and Analytics**

Social Network Analysis and Education: Theory, Methods & Applications provides an introduction to the theories, methods, and applications that constitute the social network perspective. Unlike more general texts, this applied title is designed for those current and aspiring educational researchers learning how to study, conceptualize, and analyze social networks. Brian V. Carolan's main intent is to encourage you to consider the social network perspective in light of your emerging research interests and evaluate how well this perspective illuminates the social complexities surrounding educational phenomena. Relying on diverse examples drawn from the educational research literature, this book makes explicit how the theories and methods associated with social network analysis can be used to better describe and explain the social complexities surrounding varied educational phenomena.

### **Social Support and Physical Health**

Social network analysis is used widely in the social and behavioral sciences, as well as in economics, marketing, and industrial engineering. The social network perspective focuses on relationships among social entities and is an important addition to standard social and behavioral research, which is primarily concerned with attributes of the social units. Social Network Analysis: Methods and Applications reviews and discusses methods for the analysis of social networks with a focus on applications of these methods to many substantive examples. It is a reference book that can be used by those who want a comprehensive review of network methods, or by researchers who have gathered network data and want to find the most appropriate method by which to analyze it. It is also intended for use as a textbook as it is the first book to provide comprehensive coverage of the methodology and applications of the field.

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