# PREFACE

This volume, the fifth edition of my book *Diffusion of Innovations*, builds on its predecessors by retaining the same basic diffusion model that originally appeared in the first edition in 1962. Over the past four decades, this general model of the diffusion of innovations has been modified somewhat and expanded, based on further research and on theoretical developments. What is new in the present edition of *Diffusion of Innovations* is (1) changes in the contributions of various diffusion traditions, with marketing, public health, and communication coming on particularly strong in recent years, (2) many studies of the diffusion of new communication technologies like the Internet and cellular telephones, (3) expanded understanding of diffusion networks through such concepts as the critical mass and individual thresholds, and (4) the use of field experiments (in addition to surveys) to test the effects of such diffusion interventions as using opinion leaders. Many of the case illustrations, and the figures that accompany certain of them, are new to this edition.

许多关于互联网和移动电话等新通信技术传播的研究

My introduction to research on the diffusion of innovations happened in the following manner. I became interested in the diffusion of agricultural innovations by observing farmers in my home community near Carroll, Iowa, who delayed for several years in adopting new ideas that could have been profitable for them. This behavior was puzzling—and frustrating—to me. Why didn't farmers adopt innovations? Factors other than just economic explanations must have been at work.

I had graduated from Iowa State University with a bachelor's degree in agriculture in 1952 and then served as an Air Force officer during the Korean War, when I learned the skills of applied social science research. After my discharge from military service, I returned to Iowa State for graduate work in rural sociology, to study the diffusion of agricultural innovations. At that time, Iowa State was one of the centers of diffusion research as a result of the hybrid seed corn study by Bryce Ryan and Neal C. Gross (1943).

In 1954, Professor George Beal at Iowa State University was initiating a diffusion project in one community, Collins, Iowa, located about twenty miles from Ames. This project was supported by the Iowa Agricultural Experiment Station, the research unit at Iowa State that had funded research to develop hybrid seed corn and other agricultural innovations. I joined Beal's diffusion project in spring, 1954, and within about a week of my discharge from the Air Force, I was participating in a graduate seminar on diffusion, taught by Beal. I read the Ryan and Gross (1943) paper about the diffusion of hybrid seed corn in two Iowa communities. Shortly thereafter, I began interviewing some of the 148 farmers in Collins about their adoption of 2,4-D weed spray and other agricultural innovations. Thus I became a diffusion scholar.

My doctoral dissertation in 1957 was an analysis of the diffusion of several agricultural innovations in the rural community of Collins. While reviewing literature for my dissertation, I encountered studies of the diffusion of kindergartens and of driver training among schools (Mort, 1953), as well as the spread of an antibiotic drug (tetracycline) among medical doctors (Menzel and Katz, 1955). The main findings were strikingly similar to the agricultural diffusion studies in which I was involved: an S-shaped rate of adoption over time, different sources or channels at different stages in the innovation-decision process for an individual, and a tendency for innovators (the first individuals in a system to adopt an innovation) to travel and read widely and to have a cosmopolite orientation. The review of literature chapter in my dissertation argued that diffusion was a *general process*, not bound by the type of innovation studied, who the adopters were, or by place or culture. I was convinced that the diffusion of innovations was a kind of universal process of social change.

个人在创新决策过程的不同阶段有不同的来源或渠道

传播是一个普遍的过程，不受所研究的创新类型，采用者是谁，地点或文化的限制

创新的传播是一种普遍的社会变革过程

Certainly one event that encouraged this type of thinking was a presentation on the diffusion of agricultural innovations by Professors George Beal and Joe Bohlen to the staff of the Iowa Extension Service in December 1954 in Ames. This dramatic presentation had grown out of the graduate seminar on diffusion in which I had enrolled the previous spring at Iowa State and focused (1) on the sources or channels of communication used at stages in the individual-level innovation-decision process, and (2) on characteristics of farmers who adopted relatively earlier and relatively later in the diffusion process. These were important steps toward generalizing a model of diffusion, although the Beal/Bohlen conceptualization was mainly oriented to farm innovations. Soon,

however, Beal and Bohlen were being asked to give their presentation to audiences interested in civil defense (where the innovation of interest was building household bomb shelters) and household consumer products. Clearly, a more general diffusion model was being discussed.

After completing graduate work at Iowa State in 1957, I joined the rural sociology faculty at Ohio State University, where I conducted research on the diffusion of agricultural innovations among Ohio farmers. My argument for a generalized diffusion model led me to write the first edition of *Diffusion of Innovations*, which was published in 1962. This book summarized diffusion research findings to date, organized around a general diffusion model, and argued for more standardized ways of adopter categorization and for conceptualizing the diffusion process. In 1963–1964, I taught and conducted research on the diffusion process in peasant communities in Colombia as a Fulbright lecturer. This experience allowed me to test the universality of the diffusion model, such as whether the diffusion of innovations also characterized peasant villages in developing countries, where the mass media were rare and where social change was often just getting under way.

On my return to the United States, I accepted a faculty appointment in the Department of Communication at Michigan State University, then the seed institution for communication study in the United States (Rogers, 2001). This academic change fit with my vision for diffusion research: it would be more generalized, involving various disciplines, but with a firm grounding in communication theory. So my interest in a general diffusion model helped move me out of rural sociology (and the study of agricultural innovations) into the field of communication. I began to study the diffusion of health and family planning innovations in India and the diffusion of educational innovations among government secondary schools in Thailand. Eventually, the study of agricultural innovations by rural sociologists became somewhat passé in the face of farm surpluses (although it has made somewhat of a resurgence in recent years). But the diffusion model spread to many other academic fields.

This book is about regularities in the diffusion of innovations, patterns that have been found across cultures, innovations, and the people who adopt them. The diffusion of innovations explains social change, one of the most fundamental of human processes.

The four editions of my diffusion book (published in 1962, 1971, 1983, and 1995), each about a decade apart, mark turning points in the growth of the diffusion field. At the time the first edition of this book, *Diffusion of Innovations*, was published in 1962, there were 405 publications about this topic. The second edition (and revision), *Communication of Innovations: A Cross-Cultural Approach* (coauthored with F. Floyd Shoemaker), was published in 1971, nine years later. By then the number of diffusion publications had quadrupled, to about 1,500. Twelve years later, in 1983, when the third edition of *Diffusion of Innovations* appeared, the total number of diffusion publications had more than doubled again, to 3,085. The number of diffusion publications approached 4,000 when the fourth edition of *Diffusion of Innovations* was published in 1995. Today I estimate this number to be more than 5,200, and the field of diffusion continues to grow (at about the same rate of 120 diffusion publications per year that characterized the past four decades). No other field of behavior science research represents more effort by more scholars in more disciplines in more nations. The present book is based upon a yet broader foundation of diffusion research than the four earlier editions. I believe that the widespread diffusion of the Internet since about 1990 has changed the nature of the diffusion process in certain important ways, which are discussed in the present volume.

大约自1990年以来，互联网的广泛传播在某些重要方面改变了传播过程的性质

This book is both (1) a revision of the theoretical framework and the research evidence supporting this updated model of diffusion and (2) a new intellectual venture, in that certain new concepts and new theoretical viewpoints are introduced. The stream of diffusion scholarship over the past sixty years represents both similarities and differences, continuities and discontinuities, and so does this book. By no means, however, do I seek only to synthesize the important findings from past research; I also strive to criticize this work (including my own) and to suggest directions for the future that are different from those of the past. I have once again titled this book *Diffusion of Innovations* to identify it with the forty-year sequential tradition of diffusion studies marked by my 1962 book of the same title.

Most diffusion studies prior to 1962 were conducted in the United States and Europe. In the period between the first and second editions of my diffusion book, during the 1960s, an explosion occurred in the number of diffusion investigations that were being conducted in the developing countries of Latin America, Africa, and Asia. The classical diffusion model was usefully applied to the process of development that was a priority for these developing nations. The diffusion approach was a natural framework in which to evaluate the impacts of development programs in agriculture, family planning, public health, and nutrition. In studying the diffusion of

innovations in developing nations, I (and others) gradually realized that certain limitations existed in the diffusion framework. In some cases, development programs outran the diffusion model on which they had originally been based. Certain modifications to the classical diffusion model were thus made.

This book reflects a more critical stance than its original ancestor. During the past forty years or so, diffusion research has grown to be widely recognized, applied, and admired, but it has also been subjected to constructive and destructive criticism. This criticism is due in large part to the stereotyped and limited ways in which many diffusion scholars have defined the scope and method of their field of study. Once diffusion researchers formed an "invisible college" (defined as an informal network of researchers who form around an intellectual paradigm to study a common topic), they began to limit unnecessarily the ways in which they went about studying the diffusion of innovations. Such standardization of approaches constrains the intellectual progress of diffusion research.

Social changes and the social problems facing the world, of course, affect the diffusion of innovations. Examples are the Internet, the AIDS epidemic, and world terrorism. The Internet has spread more rapidly than any other technological innovation in the history of humankind. The diffusion of the Internet exemplifies certain concepts, such as that of critical mass. The term *digital divide* indicates those individuals who are advantaged versus those who are relatively disadvantaged by the Internet and helps illuminate our understanding of inequality in the consequences of innovation. We draw on illustrations of Internet diffusion throughout this book. We suggest that such interactive communication technologies may be changing the diffusion process in certain fundamental ways, such as by removing, or at least greatly diminishing, the role of spatial distance in who talks to whom about a new idea.

The AIDS epidemic was first recognized in the United States in 1981, although we now know that it had antecedents going back several decades. The first HIV/AIDS prevention program to successfully halt the spread of the epidemic, STOP AIDS, was organized by gay men in San Francisco in the mid-1980s and was based directly on the diffusion model. We analyze the STOP AIDS intervention in Chapter 2, along with the thousands of other HIV prevention programs around the world, all based to some degree on the San Francisco model. The AIDS epidemic today is concentrated in the developing world of Latin America, Africa, and Asia, where 95 percent of the 40 million people living with HIV/AIDS are located (Singhal and Rogers, 2003). The epidemic represents one of the world's gravest social problems, and we discuss here how the diffusion model has been, and could be, utilized to slow rates of infection (see Chapter 9).

World terrorism, culminating in the September 11, 2001, attacks on the World Trade Center and Pentagon, poses another challenge to society. This event has focused attention in gaining improved understanding of how Al Qaeda and similar terrorist networks function. We discuss the unique qualities of networks in Chapter 8. In certain important respects, the architects of the United States' antiterrorist efforts have not completely realized that a war on international terrorism is quite different from wars of the past, which were against nations.

不确定性促使个人寻求信息, 因为这是一种令人不舒服的状态

The present book makes use of the important concepts of uncertainty and information. *Uncertainty* is the degree to which a number of alternatives are perceived with respect to the occurrence of an event and the relative probabilities of these alternatives. Uncertainty motivates individuals to seek information, as it is an uncomfortable state. *Information* is a difference in matter-energy that affects uncertainty in a situation where a choice exists among a set of alternatives (Rogers and Kincaid, 1981). One kind of uncertainty is generated by an *innovation*, defined as an idea, practice, or object that is perceived as new by an individual or another unit of adoption. An innovation presents an individual or an organization with a new alternative or alternatives, as well as new means of solving problems. However, the probability that the new idea is superior to previous practice is not initially known with certainty by individual problem solvers. Thus, individuals are motivated to seek further information about the innovation in order to cope with the uncertainty that it creates.

一种不确定性是由创新产生的

创新为个人或组织提供了一种或多种新的选择, 以及解决问题的新方法

想法优于实践 个人被激励去寻更多信息 以应对所产生的不确定性

Information about an innovation is often sought from peers, especially information about their subjective evaluations of the innovation. This information exchange about a new idea occurs through a convergence process involving interpersonal networks. The diffusion of innovations is essentially a social process in which subjectively perceived information about a new idea is communicated from person to person. The meaning of an innovation is thus gradually worked out through a process of social construction.

创新在人与人的社会中进行传播建设

My thinking and writing about the diffusion of innovations have benefited a great deal in recent years from my collaboration with other diffusion scholars. Some are "rookies" in the diffusion field. My daily e-mail messages often contain a query from a young scholar or student asking for advice about a diffusion investigation that he or she is conducting. I learn from these exchanges, as I do from the undergraduate/

graduate course on the diffusion of innovations that I teach at the University of New Mexico. This volume benefits from such fresh questioning of an established framework, which helps advance it.

The help of several old pros in diffusion research and teaching are also acknowledged. Jim Dearing of Michigan State University, Pete Korsching of Iowa State University, Gary Meyer at Marquette University, Todd Shimoda at Colorado State University, Arvind Singhal at Ohio University, and Tom Valente at the University of Southern California. I stay in touch with this network of scholars, exchanging course outlines and publications. I also thank Andrew Rubey of the University of New Mexico for certain of the graphics in this book, and Everett Rogers-King for making the indexes.

Throughout this book, I seek to represent a healthily critical stance. We do not need more-of-the-same diffusion research. The challenge for diffusion scholars of the future is to move beyond the proven methods and models of the past, to recognize their shortcomings and limitations, and to broaden their conceptions of the diffusion of innovations. We offer this fifth edition as one step toward this important goal.

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