

The Adoption Process

Part II

**New ideas and potential adopters
have identifiable characteristics which
appear to affect the diffusion of innovations**

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MUCH OF THE time and energy of personnel of the Cooperative Extension Service has been focused on helping people apply technology to their own situation—of helping them make practical application of scientific research. Efforts to encourage farm people to accept and make use of the findings of experiment stations and other sources of research information have been successful to varying degrees. In order to better understand how technological innovations are accepted and utilized, rural sociologists have conducted considerable research on practice adoption.

The purpose of this article (and Part I that appeared in the 1963 Spring issue of the *Journal*) is to review and synthesize research findings on the diffusion of innovations¹ and to point out their implications for Extension workers. It seeks to offer a theoretical basis upon which the Extension worker might ground his "strategy of change."

Part I covered the development of rural sociology research on the diffusion of innovations and what has been identified as the adoption process.² This part will deal with (1) rate of adoption, (2) adopter categories, and (3) opinion leadership. Characteristics of the research studies upon which this article is based help describe

¹This review is based largely upon *Diffusion of Innovations*, by Everett M. Rogers (New York: Free Press of Glencoe, 1962).

²Everett M. Rogers, "The Adoption Process—Part I," *Journal of Cooperative Extension*, I (Spring, 1963), 16-22.

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the general nature of the studies and also indicate certain limitations to the application of the findings. They are as follows:

1. These studies were greatly concentrated in the Midwest. There is no assurance that generalizations derived from them will hold true for other areas of the United States or for developing societies.
2. Respondents in most of these studies were farm operators; the diffusion of new homemaking innovations has received less research attention by rural sociologists.
3. Little is known from diffusion research about the role of youth programs in securing the adoption of innovations, although one justification for 4-H Club work might be that parents' behavior is changed through the youth's project work.
4. Innovations studied have been technological in nature. It is not known whether the same generalizations will hold in the case of new ideas like Rural Areas Development, the National Farmers Organization, or new child-raising practices.

RATE OF ADOPTION

Some innovations diffuse from their first introduction to widespread use in a few years. Others require 50 years. What characteristics of innovations affect the rate at which they diffuse and are adopted?

One characteristic is called *relative advantage*. This refers to the degree to which an innovation is superior to ideas it supersedes. One indication of the relative advantage of a new idea is its profitability. However, in the case of 2,4-D weed spray, one of the major advantages over previous methods of weed control was the reduction in unpleasant labor required. Thus, the degree of relative advantage may be expressed in social profitability as well as in economic profitability. The generalization derived from past research findings is that *the relative advantage of a new idea, as perceived by individuals, affects its rate of adoption.*

Compatibility is the degree to which an innovation is consistent with existing values and past experiences of the adopters. An example of incompatibility of an innovation as a barrier to its acceptance is reported by a Kentucky rural sociologist. County agents encountered considerable difficulty in convincing Kentucky farmers to switch from tobacco-growing to pickle-raising, even though the latter crop was more profitable. It was rejected because cucumbers were perceived as a "feminine" type of enterprise, while tobacco-growing was prestigious. In short, pickle-growing was incompatible

with the farmers' values. *The compatibility of a new idea, as perceived by individuals, affects its rate of adoption.*

Complexity is the relative degree to which an innovation is difficult to understand and use. 2,4-D weed spray might seem to be a relatively simple idea for farmers to adopt; however, adoption of this innovation can entail the calibration of a sprayer and several other new skills not previously possessed by most farmers. A study by the author showed that many Iowa farmers viewed 2,4-D spray as very complex. They reported many difficulties in learning to use it. *The complexity of an innovation, as perceived by individuals, affects its rate of adoption.*

Divisibility is the degree to which an innovation may be tried on a limited basis. Research findings indicate that almost no one adopts a new idea without first trying it on a small scale. But take-it-or-leave-it ideas such as bulk milk tanks, home air conditioners, and new farm machinery are difficult to try on the installment plan. *The divisibility of an innovation, as perceived by individuals, affects its rate of adoption.*

Communicability is the degree to which the results of an innovation may be diffused to others. An example of an innovation with low communicability is pre-emergent weed killer. It is sprayed on a field before weeds emerge. The rate of adoption of this new idea has been slow, in spite of its relative advantage, because there are no dead weeds to show one's neighbors. *The communicability of an innovation, as perceived by individuals, affects its rate of adoption.*

The relationship between the characteristics of innovations and their rate of adoption has been studied by Kivlin.³ He asked 11 judges to rate 11 characteristics (such as relative advantage, divisibility, etc.) of 43 farm innovations that had been adopted by 299 farmers in one Pennsylvania county. He found highest correlations between rate of adoption and (1) relative advantage, (2) complexity, and (3) compatibility. The combined effect of the characteristics of the innovations explained 51 per cent of the variation in their rate of adoption.

ADOPTER CATEGORIES

It is obvious to any acute observer of any social system that not all of its members adopt new ideas at the same time. A general finding of past investigations is that *adopter distributions follow a*

³Joseph E. Kivlin, "Characteristics of Farm Practices Associated with Rate of Adoption" (Ph.D. dissertation, Department of Agricultural Economics and Rural Sociology, Pennsylvania State University, 1960).

bell-shaped curve over time and approach normality. In other words, only a few individuals adopt a new idea at first, then many individuals follow the example that has been set. Finally, the rate of adoption slows until no one in a social system remains to adopt. The result is a bell-shaped, normal curve.

This finding allows the classification of individuals into five adopter categories on the basis of innovativeness: innovators (the first to adopt), early adopters, early majority, late majority, and laggards. *Innovativeness* is the degree to which an individual is relatively early in adopting new ideas when compared to others of his social system.

Research by rural sociologists indicates that there are wide differences among these adopter categories and that change agents need to utilize different teaching methods with each category. For example, early adopters seek new ideas and may easily be motivated to attend Extension meetings. On the other hand, laggards are suspicious of change agents and often may be reached only indirectly through the "trickle-down" process. This suggests that change agents need to think in terms of sub-audiences when planning educational methods for diffusing innovations.

It is a basic maxim of public relations, education, and effective communication that one must know his audience. The data in Table 1⁴ provide a means by which a change agent may become better acquainted with the salient values, characteristics, communication behavior, and social relationships of each adopter category. This summary of many research studies indicates, among other strategies, that a change agent who cannot reach all clients personally should concentrate his efforts particularly on early adopters. An hour of educational effort spent with this adopter category will yield higher returns in changed behavior than any other adopter category.

OPINION LEADERS

It is obvious that all individuals do not adopt an innovation at the same time. It is also obvious that all persons do not exert an equal amount of influence on the adoption decisions of others. *Opinion leaders* are those from whom others seek advice and information. Opinion leaders have been found to be "just like their followers, only more so." *Opinion leaders conform more closely to social system norms than the average member.* One example of this generalization comes from a study of 13 Kentucky neighbors

⁴ Rogers, *op. cit.*, p. 185.

Table 1. A comparative picture of adopter categories

Adopter category	Salient values	Personal characteristics	Communication behavior	Social relationships
Innovators	"Venturesome"; willing to accept risks	Youngest age; highest social status; largest and most specialized operations; wealthy	Closest contact with scientific information sources; interaction with other innovators; relatively greatest use of impersonal sources	Some opinion leadership; cosmopolite
Early Adopters	"Respect"; regarded by many others in the community as a role-model	High social status; large and specialized operations	Greatest contact with local change agents (including the Extension Service)	Greatest opinion leadership of any adopter category in most communities; very localite
Early Majority	"Deliberate"; willing to consider new ideas only after peers have adopted	Above-average social status; average-sized operations	Considerable contact with change agents and early adopters	Some opinion leadership
Late Majority	"Skeptical"; overwhelming pressure from peers needed before adoption occurs	Below-average social status; small operations; little specialization; small income	Interaction with peers who are mainly late majority or early majority; less use of mass media	Little opinion leadership
Laggards	"Tradition"; oriented to the past	Little specialization; lowest social status; smallest operations; lowest income; oldest	Neighbors, friends, and relatives with similar values are main information source; suspicious of change agents	Very little opinion leadership; semi-isolates

hoods by Marsh and Coleman.⁵ Their conclusions suggest that leaders do not deviate very far from community norms. In progressive Kentucky neighborhoods, leaders were much more innovative than their followers. Leaders in traditional neighborhoods were relatively less innovative as compared to their followers.

An Extension agent needs to know whether opinion leaders for, say, dairying are the same as those for corn-growing. The majority of research findings indicates *there is little overlapping among the different types of opinion leaders*. This implies that a different battery of opinion leaders must be involved to spread different types of new ideas—there are few all-purpose opinion leaders. Opinion leaders differ from their followers as to information sources and personal characteristics. Opinion leaders use more impersonal, technically accurate, and cosmopolite sources of information. They are more cosmopolite, have more social participation in organizations, higher social status, and are more innovative than their followers.

SOCIAL STATUS AND COMMUNICATION

Almost every analysis of any change agent's clientele shows that *change agents have more communication with higher-status than with lower-status members of a social system*. Rogers and Capener⁶ investigated 31 variables related to farmers' degree of contact with county Extension agents in Ohio. The variable most highly related to Extension contact was social status. Rogers and Havens⁷ reported a generally similar finding in their study of farm homemakers and Extension contact.

In most cases, status differences exist between the change agent and his clientele. It is likely that wide social status differences between any two individuals act to impede effective communication. Consequently, change agents tend to interact most effectively and most often with clients who have a social status similar to their own. This communication problem is similar to the "middle-class" teacher in a classroom situation who cannot effectively reach the

⁵ C. Paul Marsh and A. Lee Coleman, "Farmers' Practice-Adoption Rates in Relation to Adoption Rates of Leaders," *Rural Sociology*, XIX (June, 1954), 180-81.

⁶ Everett M. Rogers and Harold R. Capener, *The County Extension Agent and His Constituents*, Ohio Agricultural Experiment Station Research Bulletin 838 (Wooster: The Ohio State University, June, 1960).

⁷ Everett M. Rogers and A. Eugene Havens, *Extension Contact of Ohio Farm Housewives*, Ohio Agricultural Experiment Station Bulletin 890 (Wooster: The Ohio State University, December, 1961).

"lower-class" student. From a viewpoint of maximizing results, the change agent's work with higher status clients undoubtedly results in more adoptions per hour of effort expended. However, if a change agent allocates his efforts to clients on the basis of educational need, he should concentrate on the lower-status clients.

SUMMARY

Purpose of the present article (both this part and Part I which appeared in the Spring 1963 issue of the *Journal*) was to review and synthesize rural sociological research findings on the diffusion of innovations, and to point out their implications for Extension workers. In addition to some discussion of the historical development of diffusion research, generalizations have been drawn for change agents. These deal with (1) the adoption process, (2) the rate of adoption of innovations as a function of their characteristics, (3) adopter categories, and (4) opinion leaders.

Impersonal (and cosmopolite) information sources are most important at the awareness stage. Personal (and localite) sources are most important at the evaluation stage in the adoption process. The first individuals to adopt innovations require a shorter adoption period than do relatively later adopters. Earlier adopters try innovations on a smaller scale than later adopters. The relative advantage of a new idea—its compatibility, its complexity, its divisibility, and its communicability (as perceived by individuals)—affects its rate of adoption.

Adopter distributions follow a bell-shaped curve over time and approach normality. There are important differences among innovators and other adopter categories on the basis of salient values, characteristics, communication behavior, and social relationships. Opinion leaders conform more closely to social system norms than the average member. There is little overlapping among the different types of opinion leaders. Change agents have more communication with higher-status than with lower-status members of a social system.