DIFFUSION OF INFORMATION

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Bilginin Yayılımı

Günümüzde, bilginin ve yapılan keşiflerin topluma yayılması konusunda yapılan çalışmalar, sosyal bilimler alanındaki en popüler çalışmalardan biri olarak dikkati çekmektedir. Bilginin ve keşifin yayılımı konusundaki çalışmalar, genelde verilen mesajların benimsenmesi ve bu mesajların benimsenmesini engelleyen faktörler üzerinde odaklanırlar.

Anahtar sözcükler: Bilginin yayılımı, keşiflerin yayılımı, mesajların benimsenmesi ve engelleyici faktörler.

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Diffusion studies involving diffusion of innovation and diffusion of information are one of the popular studies in social science research. Diffusion is defined as a process by which an innovation or information is communicated through certain channels, over time, among members of social system. Diffusion

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studies have focused on the process of message adoption and examined the roles of intervening steps in this process.

Diffusion of information and diffusion of innovation are related to each other because both of them focus on the flow of communication. Information diffusion is concerned with news flow from the aspect of mass media dissemination to the aspect at which almost all in the population learn about the news event. From this perspective, most typical diffusion studies have begun with a major news event and dealt with how people learned about the event, whether they passed the information, and to whom (Stone v.d. 1999: 166). These studies have also investigated where people turn for information (i.e., interpersonal relations, TV, newspapers), what differences it makes for behavior, whether news sources vary with personal characteristics, and who uses which sources.

There are two kinds of information diffusion:
1. News
2. General information, such as how information gets diffused and why it is important that
information is diffused.

Diffusion of information is an important concept and it is used in a variety of fields including product movement, marketing, business context, surveillance of environment and social change. Better understanding of the diffusion of information depends on understanding the variables that determine diffusion such as the spreaders and the adopters. Then, we can use these data for health care, social and behavioral issues.

There are three generations of research concerning diffusion of information:

I. Very early studies: Early studies of information diffusion dealt with agriculture and rural sociology in the 1920s and 30s. The most remarkable studies of this era was shown as a 1920s city council study, (Stone v.d. 1999: 166) a 1943 Iowa hybrid seed study, (Ryan ve Gross 1943: 15-24) and a 1947 study about the psychology of rumors (Allport ve Postman 1947).

Embedding pattern emerged as a result of research focusing on rumors. Embedding means that the more the message spreads out, the more its originality changes. Researchers found leveling (shortening the message), sharpening (emphasizing key details), and assimilation (distorting messages to fit the receivers' personal circumstances) as the elements of embedding. Results of these studies showed that interpersonal communication is a poor channel for information diffusion (Stone v.d. 1999: 166).

The first real information diffusion study examined the news flow of President Franklin D. Roosevelt' death. The authors of this study found that more than 90% surveyed learned about Roosevelt's death within thirty minutes, and primarily through

interpersonal communication. But those who learned the news through word-of-mouth informed only one other person whereas those who heard it from radio informed seven people. Then, these people turned to newspapers such as *New York Times* to verify the news. Today, television serves as the verification tool for the news learned through interpersonal communication (Stone v.d. 1999: 166).

The other significant study conducted was *Operation Revere* (Dodd 1953: 91-92) in the 1950s, in which the Air Force attempted to assess the effects of dropping leaflets on a civilian population (Stone v.d. 1999: 167). American forces used about three million leaflets during World War I, and this figure rose to about three billion during World War II. Leaflets were also used during the Korean conflict (Lowery ve De Fleur 1983: 205-231). The military forces used leaflets for the purposes of warning civilians to evacuate targeted areas, and to frighten and urge enemy troops to desert. The Air Force saw that wartime leaflets were not very effective, and they wanted to know why ((Stone v.d. 1999: 167).

Operation Revere was designed to trace the effectiveness of informational leaflets. The study involved two processes: message delivery (to the target population) and interpersonal message diffusion (through the target population) (Lowery ve De Fleur 1983: 206). The purpose was who received, understood and diffused the information in the leaflets. As a result, it was found that there was a widespread reception but very little diffusion. Then, investigators designed a more controlled experiment and conducted a field study. They used incentives in order to motivate

people to spread the message. With this purpose, a coffee company offered free pound of coffee as rewards for cooperation, and "U.S. towns were bombarded with new coffee slogans and Civil Defense messages." (Stone v.d. 1999: 167). Researchers found that message distortion was significant. Even the simplest messages were distorted as they moved through chain. From this perspective, first-hand contact appeared as critical. First-hand contact with recipient was essential to get accurate information because "the more removed a person is from first-hand knowledge the more the message will be distorted. So, people who get the information second hand are likely to be poorly informed. Researchers of this study also found that the intensity (message redundancy or repetition) affects how faithfully it will be received and remembered.

The diffusion studies following *Revere Study* focused more on the mass media as information diffusion agent. In one of these studies, which focused on the news of President Eisenhower's decision to run for a second term, it was found that people turned to the mass media for further information and used multiple media sources to supplement information (Danielson 1956: 433-41).

In the 1960s, Deutschmann and Danielson studied diffusion of news events and focused on where people got the news. The particular news events they studied were Sputnik (1957), Eisenhower's stroke (1957), Explorer I (1958), and Alaska statehood (1958). They found that while television and radio were primary sources, newspapers and interpersonal communication were secondary for the diffusion of important news events. The

rate of diffusion was rapid, but not instant. Following the theory of two-step flow, researchers showed that news first flowed from the media to individuals, then they were diffused through interpersonal channels among people (Deutschmann ve Danielson 1960: 345-55).

Deutschmann and Danielson stated that diffusion process is very regular, and "regardless of the news event, diffusion rates follow a basic pattern, television is the first source of news, neither time of day nor story topic affects exposure, the uninformed people differ from the informed people in education, and occupation, and most people hear the story first in their homes." (Deutschmann ve Danielson 1960: 354)

Studies investigating the news flow during the assassination of President Kennedy tested the regularity hypothesis and they found that for momentous news events, interpersonal communication takes the lead from the mass media, diffusion is important, people alters their usual media routine, and the differences in media use among social classes are diminished (Hill ve Bonjean 1964: 336-42).

When the early studies showed newspapers as the most important information source, studies in the late 1960s focused on the increasing role of television, and they claimed that the role of newspapers and interpersonal communication were limited in initial contact (Stone v.d. 1999: 168). But they all depend on the topic and its importance.

II. Second Generation- Media vs. Interpersonal: Funkhouser and McCombs investigated the methodological issue of whether people remember all the information they received. Their study

pointed out the concept of negative diffusion "where people forget information in a very short time."(Funkhouser ve Combs 1971: 107-113) Their findings indicated that if people exposed to the information again and if they have interest in the message, they can be positively diffused.

Rosengren (1973), in his overview of diffusion studies, claimed that the interpersonal channels, rather than the mass media, are primary sources in diffusion (Rosengren 1973: 83-91). By changing the focus from bad news to good news flow, Haroldsen and Harvey found that interpersonal contacts were the important source in Mormon Church news announcement among Utah residents. However, interpersonal sources lacked the credibility, and thus, people turned to mass media sources for verification of the message (Haroldsen ve Harvey 1979: 771-75).

In the 1980s, research examined the news flow about the assassination attempts of President Reagan and Pope John Paul II. These studies showed that such important news events diffused rapidly, and interpersonal channels and the mass media tied as initial information sources (Weaver-Lariscy 1984: 258-76).

Some important patterns emerged as a result of second-generation information diffusion studies. They were:

1. Routine news influences people through media channels with individual and social categories affecting diffusion,
2. Important news is diffused rapidly and mostly through interpersonal communication first,
3. People always turn to the mass media for verification of information they received.

III. Third Generation- New media and technologies: It can be stated that as a result of the emergence of new technologies, people will be informed better. Looking from this perspective, third generation of information diffusion studies searches for what impact new media and technologies will have. Particularly, the discovery of the Internet provided great opportunities for researchers who wanted to test the effects and contributions of the new media in information diffusion. Berghel (1996) investigated the topic of online political propaganda and argued about the implications of a new era in political communication with direct communication between politicians, interest groups, and the public at large (Berghel 1996: 19-25). In their empirical study about technology diffusion, Gatignon and Robertson (1989) examined the factors accounting for the rejection or adoption of a high-technology innovation. Laptop computers were particularly examined as a production process innovation for the sales force. The results suggested that firms most receptive to innovation were in concentrated industries with limited price intensity and that supplier incentives and vertical links to buyers were important in achieving adoption. The results further suggested that adopters can be separated from nonadopters by their information-processing characteristics. The adopters had high exposure to personal information and a preference for negative information. This finding indicated the importance of "networking"sales contracts and influencing by "key informants."(Gatignon ve Robertson 1989: 35-50).

By arguing that about 1/5 of the world's population, estimated only on the basis of the countries in which they live, has

access to far more capability than the rest, Goodman et al. investigated patterns and problems of network diffusion, especially in relation to less developed countries (Goodman v.d. 1994: 27-43). Sinkula (1991) examined the adoption of scanner-based research in organizations. Organizations represented included manufacturers, retailers, advertising and research agencies, publishers and broadcasters, hotels, and fast-food organizations. The results showed that the adoption intensity of scanner-based research by users is 15.68%. Thus, it was found that this innovation is diffusing rapidly. Nearly 25% of the organizations reported using scanner-based research. These results were in agreement with the Rogers (1962, 1983) diffusion model. Users tended to be diversified manufacturers that perceived scanner-based research to be of high advantage, low complexity, low cost, and high observability. The findings suggest that market research innovations in organizations can be examined with established diffusion models (Sinkula 1991: 50-56).

Strengths and Weaknesses of Information Diffusion Theory: By examining the roles of the mass media as well as interpersonal communication in diffusion process, information diffusion studies can be applicable to a variety of fields including health care, advertising, marketing, business and so on. Variables such as type of topic and interest, extent of media coverage, education and income are critical in information diffusion research.

The pro-innovation or –information bias is the major criticism about diffusion of innovation and of information studies. Researchers working on innovation diffusion mostly favored innovation and they assumed people mostly adopt innovations.

However, innovation can be rejected or no good. Second criticism emphasized the individual-blame bias and argued that most research about diffusion blamed individuals rather than the system for the slowness of innovation. But, system can be responsible about that. There is also methodological issue of recall problem in information diffusion research. Most people may not remember how, and from where, they got the information, and this can cause a measurement error in research.

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