

Factors Affecting Adoption of New Irrigation Systems: Viewpoints of Experts of Departments of Agriculture Jihad in Tehran and Alborz Provinces

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Abstract

Shortage of water is one of the main factors limiting development of agricultural activities. This has led to the fact that farm management and productivity of agricultural water need full participation of farmers. Therefore, the purpose of this study was to analyze the factors affecting barriers and facilitators in adoption/development of new irrigation systems by farmers. The statistical population of this study included 70 experts of the departments of Agriculture Jihad whose viewpoints were collected and analyzed. Data was collected by using a questionnaire as research tool and SPSS and Lisrel software were used for analysis. To determine the reliability of the questionnaire, alpha coefficient was used by R software, which amounted to 91 percent, reflecting the reliability of data in similar conditions. In order to identify the factors affecting barriers and facilitators in development of new irrigation systems, factor analysis was used. The results of analysis in development barriers section led to identification of five barriers that included farmers awareness, technical problems, administrative costs, government policy, and technical knowledge. These barriers could explain about 69 percent of variations of adopting new irrigation systems. Identified facilitators included satisfaction of progressive farmers, clear comparative advantages, and monitoring and institutional partners. These facilitators could explain about 40 percent of variations about adoption of new irrigation systems. Also, in order to identify direct and indirect relationships between identified barriers and facilitators, Structural Equation Modeling (SEM_s) was used. Results of this section showed that farmer awareness ($\beta= 0.87$), administrative costs ($\beta= 0.67$), clear benefits ($\beta= 0.54$) barriers had a direct impact on the development of new irrigation systems. Also, other results of this study showed that there was an indirect and weak relationship between administrative costs, farmers' interests, and farmers' awareness in development of new irrigation systems. According to the results, none of the identified facilitators had any significant effect on the adoption of new irrigation systems by farmers.

Keywords: Barriers, Facilitators, Structural Equation Modeling, Farmers' awareness

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