Structural Equation Modeling of Factors Affecting Rural Knowledge-Based Realization
(Case Study: Dekhkoda Village of Hamidieh County)

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Abstract

Purpose: Today, many scholars believe that accelerating the exchange of knowledge and information with emphasis on the central role of knowledge and science is crucial to achieve comprehensive development. In fact, a knowledge-based society is recognized as a paradigm for development. Investing in knowledge-based foundations in the rural areas can also lead the rural community towards the future and play a role in national and international arenas. The purpose of this study is to model structural equations affecting knowledge-based realization in Dehkhoda Village in Hamidieh County.

Design/methodology/approach: The design of this study is of applied-theoretical type and adopts a descriptive-analytical research method. Research data were also extracted from library resources and field surveys. For this purpose, by visiting statistical centers and exploring through statistics, a comprehensive dataset was compiled for the research along with a self-administered questionnaire. The population of this study were the residents of Dehkhoda Village inhabiting permanently in this village in 2018 (n=1980). Of this statistical population, a sample size of n=321 was selected using Cochran formula for rural community. Pearson correlation coefficient, single sample T, multivariate regression and path analysis were used to analyze the data and test hypotheses. These tests were performed using SPSS.22 and Amos software.

Findings: The results suggested that information and communication technology (ICT), education, management, government agencies and NGOs (as independent variables) were positively and directly related to knowledge-based realization (as dependent variable) in Dehkhoda Village. SEM indicators also exhibited that the model developed in this study is backed up by the research data, with all indicators confirming the utility of the SEM. According to the results of research, it can be argued that public satisfaction with management indicators, government and non-governmental organizations is higher than average, whereas satisfaction with ICT and education is lower than average.

Practical implications: Rural knowledge-centeredness requires decentralization, reduction in government tenure, the reinforcement of voluntary and non-voluntary public institutions in villages, the modification of rural management laws and regulations to create and integrate rural management system, the assignment of a large portion of the government's executive duties and responsibilities to rural sheriffdom, and the transfer of facilities and financial resources to it.

Key words: Knowledge-based, Information and communication technology, Rural development, Structural equations, Dehkhoda village, Hamidieh County.

Paper type- Scientific & Research.

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1. Introduction

According to Peter Druker, a renowned scholar and analyst in the political, economic, managerial and knowledge spheres, knowledge refers to information that elicits changes in a person or an entity, whether by paving the way for actions that cause change or by enabling an individual or entity to take a measure that deviates from their past routine. He reiterates that industrial society is the result of a revolution in the industrial age and its impact on society led to the emergence of what was then called *industrial society*. In the information age, it has also given rise to "information society" or "knowledge-based society" (Druker, 1994). In Mason's view, knowledge-based describes a society where all aspects and dimensions of life are influenced by the knowledge and this flow of knowledge or information paves the way for making various decisions in the society. To him, knowledge lays the foundation of a new society, and those who somehow deal with knowledge serve as the creators of the society. Knowledge is the inventory of conceptual tools and categories recruited by the brain to create, collect, and share information.

According to Mason, knowledge embodies the practical aspect of information with respect to the perceived understanding. The ubiquitous and unconscious application of this knowledge represents a society known as "knowledge-based society" (Mason, 1996). A knowledge-based society relying on information and knowledge is an undeniable necessity of today's world. In the 21st century approach, the information-based society moves towards the knowledge-based society. The latter rests upon the fact that science, knowledge, expertise and innovation are the key drivers of community development (Ismaili & Aghayari, 2013). Today, many scholars believe that accelerating the exchange of knowledge and information with emphasis on the central role of knowledge and science is crucial for achieving comprehensive development. Indeed, a knowledge-based society is recognized as the paradigm of development. (Abolala'i, 2006). Knowledge-based society draws on the modern technology to keep pace with the latest developments and innovations in the world to seize environmental opportunities and meet environmental challenges in the most appropriate manner (Mosalanejad & Delbar, 2012). In other words, of all the resources required for production, none is more fluid and flexible than knowledge (Saif & Karami, 2003); however, global developments have made entering the information society and even transition to the knowledge society inevitable.

Today's post-industrial society is a form of information society in which power-based technologies are gradually relying on knowledge-based technologies. Undoubtedly, the sphere of their influence is not confined to urban environments. Technological advancement without regard for disadvantaged areas can produce adverse effects such as rising class gap between cities and villages, increasing migrations from rural to urban areas, the shutdown of indigenous industries, and the loss of local markets. Rural areas are deprived of many facilities and amenities due to distance from cities. Proper planning and development of rural areas based on knowledge can provide rural people access to a variety of health, education and government services and also create job opportunities and raise the awareness of rural people about productive, agricultural and promoting activities while improving the marketing of agricultural and non-agricultural products. Furthermore, it can diminish unnecessary commute to urban areas, curb rural migration and revive rural prosperity.

Roughly speaking, since 40% of the people in the world and 30% of Iranian population settle in rural areas and about 60% of Iran's area comprises rural areas, it is necessary to pay more attention to these areas (Hajinejad, Noori & Fazlali, 2011). Thus, given the role and status of villages in economic, social and political development processes at local, regional, national and international scales and the grave consequences ensuing the underdevelopment of rural areas such as prevalent poverty, rising inequality, rapid population growth, unemployment, migration and poverty, it is essential to upgrade planning and boost productivity and the development of rural areas as a result. Therefore, given that the sustainable development of the world is a function of knowledge, sustainable development in Iran should also be constructed on a knowledge basis

to provide necessary grounds for the knowledge-based realization. At present, these communications are rapidly expanding in Iranian cities, and it is crucial to consider their development in rural areas as well. Eliminating these traditional boundaries between cities and villages can play an effective role in rural development, striking a balance between them and promoting rural-urban integration as a result. Investing in knowledge-based foundations in villages can usher rural community into the future and contribute to the development of national and international arenas. If appropriate knowledge infrastructure is constructed in a society and it is also made accessible to villagers, it will raise villagers' awareness and their connection to the community outside the village (Sidai, 2008). For this purpose, the present study aims to answer the following questions using modeling structural equations (SEM) factors which affect knowledge-based realization in the village:

-Does information and communication technology (ICT) affect the realization of knowledge-based learning in Dehkhoda Village?

-Does education affect knowledge-based realization in Dehkhoda Village?

-Does management affect knowledge-based realization in Dehkhoda Village?

-Do government agencies affect the realization of knowledge-based learning in Dehkhoda Village?

-Do NGOs affect the realization of knowledge-centric in Dehkhoda Village?

-Are the villagers satisfied with the knowledge-based dimensions of rural development?

2. Research Theoretical Literature
2.1. Education
As the most vital resource for humanity, education is the key to everything. Education describes regular teaching and training acquired to prepare individuals for life. Education is one of the social responsibilities of the government, and the improvement of educational system is a serious issue in this regard (Mehdinejad, Saleh Sadeghpour & Nabi Najari., 2019). Being aware of these points, experts in growth and development assert that the expansion of knowledge and technology as the main driver of social and economic progress is impossible without educating the community. Education serves as a solution to social problems afflicting

the modern society and can go a long way in solidifying the relationships between different generations (Ibrahimzadeh, 2011).

2.2. Information and Communication Technology (ICT)
Given the interplay between the concept of knowledge-based development and information technology, one of the toughest and most important demands of societies adopting the knowledge-based development model is the possibility of expanding ICT education. The greatest achievement of an educational system in a knowledge-based society is to facilitate public learning and ultimately train the specialized forces in the various fields commensurate with the demands of a knowledge-based society (Seidiy, 2008).

"If we are to understand 60 percent of sustainable growth and development based on knowledge, we need to make plans aligned with the realization of development based on IT knowledge and utilization," said Paul Romer, a professor at Berkeley University. This is so important that it should never be eclipsed by financial and economic shortfalls (Homayounfar & Noori, 2007).

2.3. Management
The administrative idea and knowledge management, especially supervision and leadership, is a subject interwoven with human social life (Farhadi & Zare, 2010). Hence, it is obvious that management is not a new concept and its history can be traced back to the origin of human social history when humans shifted from individual life to social life and gradually from family life to tribal with a later transition from basic agricultural life to modern industrial life and finally to the complex life in the present age. Rural management, one of the integral pillars of rural development, will inhibit the discussion of development plans as a lack of organized management in rural areas. Therefore, it is necessary to pay attention to rural management in accordance with these theories. The absence of organized rural development management from the past to the present and the necessity to address the issue of modern and scientific management is palpably felt. Despite being more disciplined than the past, the current structure of rural management still has a theoretical drawback, and although

benefiting from past experiences, it still works on a trial-and-error basis (Badri, 2011).

2.4. Government and Non-Governmental Organizations

An organization is a social phenomenon consciously coordinated with a relatively defined boundary which aims to realize the objectives on a permanent basis. In the process of rural development, it is important to have appropriate institutions and organizations at national, regional and local levels in fitting with the structure of the rural community, as they can help institutionalize the existing efforts in this process. These organizations can also be governmental, public, or governmental-public in nature. What is important is the effectiveness of these organizations and their ability to draw more people to the rural development process (Afrakhateh, 2009). Given the nature and process of rural development planning, these organizations play a constructive role in this process. In addition to public and NGOs with public activities (health, education, culture, and environment), organizations specialized in rural affairs can play a major role in the development of rural areas. Recent NGOs can team up with government and the private sector, participating in the planning, implementation and monitoring and evaluation of rural programs. Further, by playing a promotional and educational role and acting as the voice of people, especially the disadvantaged groups, they are inherent to the process of rural development planning (Rezvani, 2011).

2.5. Research background

In any research, a comprehensive review of relevant research manifests the depth of the researchers' analysis and the thoroughness of their study. An extensive review of literature not only deepens on the researchers' insights into the subject, but also it lends credit to the research and reflects an accurate perception of various dimensions of research. The findings of a number of studies in Iran and other counties on this subject are reviewed below.

Toffler (1990) in his seminal work, the Third Wave, points to the revolutionary process of human civilization, stating that the information age commenced in the second half of the twentieth century, and today's human societies are in a state of transition. Declaring that knowledge is a source of power, he reiterates that the blend of

muscle and money, which were respectively the source of power in agricultural and industrial civilization, are no longer the key components of power.

In one study, Druker (1994), the well-known political and economic analyst, explores the concept of knowledge, concluding that the industrial revolution in the industrial age led to the emergence of a kind of society called *industrial society*. In the era of information, it prompts the advent of the information society and the knowledge-based society.

Mason (1996) elaborates on knowledge-based society in his research entitled "Information Management and Dissemination", concluding that knowledge-based society is a society in which knowledge affects all aspects and dimensions of people's life. He argues that knowledge is the foundation of a new society and that anyone who somehow deals with knowledge is among the creators of that society.

In another study, Hwang (2003) explores the requirement of the information age, proposing that although IT plays a vital role in the creation of knowledge management, it will not yield desired outcomes if individuals lack the essential skills and abilities for its creative application in the activities such as product innovation.

Bruckmeier & Tovey (2008) explore the role of knowledge management in rural sustainable development, arguing that knowledge is critical for any type of sustainability. Sustainability consists of three components: social, economic, environmental development. To guide the rural development towards sustainability, it is vital to rely on knowledge and relationships between social, environmental, and economic systems. Knowledge-based system can rekindle the process of rural development. In this regard, the process of rural development and its sustainability is based on knowledge.

In another study, Wong (2010) delves into the role of knowledge in agricultural development, positing that sustainable development provides a solid foundation for sustainable development and that knowledge management is vital for innovation, prioritization and efficient use of resources.

Moreover, Lwoga, Ngulube & Stilwell (2010) discusses the application of knowledge in agricultural development, stating that knowledge management practices for the indigenous knowledge management and its integration with

other knowledge systems is crucial for agricultural development in developing countries. They maintain that knowledge management is a process (knowledge management to meet existing and emerging needs for identifying and exploiting existing assets and creating new opportunities) and that this definition should be aligned with the definition of sustainable development.

Liaqut & Avdic (2015) also explore the impact of knowledge on rural sustainable development, concluding that about 50% of the world's people live in poor rural areas under difficult living conditions; therefore, finding a strategy to alleviate the hardships of rural residents is one of top priorities. They believe that knowledge management can support sustainable rural development, stating that local populations, government agencies, and non-governmental institutions can play a pivotal role in this process.

In another paper, Yamin Firouz (2003) investigates knowledge and management, declaring that knowledge is one of major fortes of an organization to survive in the competitive world market. Thus, it should be seen as a valuable asset by organizations and exploited to promote the awareness and collective skills necessary to build a larger organizational knowledge base.

In addition, Naderi (2005) studies knowledge management in an article. He expands on various development patterns in light of the World Bank data and knowledge economy benchmarks, comparing the status of knowledge-based systems in Iran with some countries. Naderi looks into the challenges of knowledge management, positing that knowledge management is a means of creating, maintaining and distributing the potentials of a large body of knowledge exploited by all successful organizations in the 21st century.

Emadzadeh and Shahnazi (2007) look at the challenges and indicators of Iran knowledge-based economy, declaring that Iran faces two types of challenges in the field of knowledge economy; the first is concerned with the low absolute size of some knowledge-based economic indicators and the second deals with the imbalance of these indicators.

Momeni & Shamsi (2007) investigate the institutional conditions affecting knowledge accumulation and application and then explore the fourth development plan. The process of accumulation and application of knowledge, heavily dependent on institutional conditions, is a time-intensive and path-dependent process. High transaction costs hampers the specialization formation in the community. Likewise, communication, risk and high uncertainty will prompt innovation. Culture and government are both two key factors in a knowledge-based community. The results of their study also suggest that although the program enumerates a number of institutions vital for knowledge accumulation, its approach has not been institutionalized and some of the most important institutional suggestions have not been adequately addressed.

On the other hand, Mahmoudi Meimand, Rabi'i, Parhizkar & Miramini (2013) believe that science and technology indicators are the main means for measuring the status of science and technology in the country. Our country's science and technology system is in need of indicators to measure knowledge-based status, especially in light of its crucial role in the vision document.

Fazelnia & Mollashahi (2016) elaborate on the approaches affecting knowledge-based management in rural areas, positing that in a society where knowledge-based infrastructures are appropriate and available to the society, the level of rural awareness is raised and the connection with the community outside the village is reinforced. The knowledge centrality begins with visionary and future-oriented outlooks aimed at fostering an integrated and multidimensional development of human and human society.

In summary, it can be acknowledged that knowledge-based realization is one of the key requirements and the bedrock of mobility in the path of development. Based on a review of literature in this field, it is essential to explore the role of knowledge-based realization from different aspects of development along with factors influencing knowledge-based realization. The present study seeks to investigate and measure all the components that directly and indirectly affect the knowledge-based realization in the village under study coupled with the modeling of these factors, which are the primary strengths and innovations of the present study.
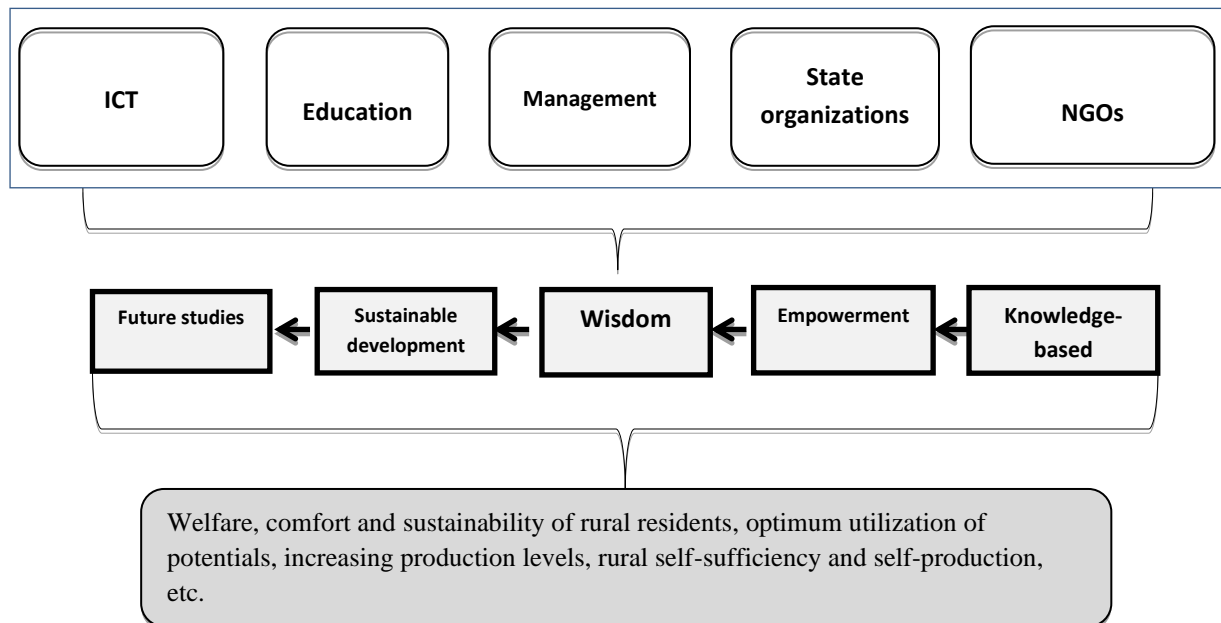
Figure 1. Conceptual model of research
(Source: Research findings, 2019)

3. Research Methodology
3.1 Geographical Scope of the Research
Hamidieh is one of the cities of Khuzestan Province located 25 km to the west of Ahvaz on Ahvaz to Susangerd Road. Hamidieh is at 18 m above the mean sea level (Buozra, 2009: 54) at 48° 11' longitude and 31° 29 latitudes. The village of Dehkhoda, 2 km from Hamidieh, is located in the central district of Dehkhoda County.

3.2. Methodology
In this study, a developmental-applied approach along with descriptive, analytical and survey methods is adopted. The research data were extracted through library analysis and field surveys (questionnaire, interview with people and authorities). For this purpose, the researchers visited statistical centers and studied annual statistics reports to compile comprehensive information for the research, which were later supplemented with questionnaires, interviews and field studies. Questionnaire items addressed research objectives and key factors in the knowledge-based realization in the village under study to collect the desired information from the statistical sample of the study. Regarding the research objectives, the statistical population of the present study consisted of rural inhabitants aged 18 to 65 years who were permanent residents of the village (n=1980). The sample size of rural population was determined using Cochran formula (n=320). To analyze the data and test the research hypotheses, Pearson correlation coefficient, single sample T, multivariate regression and path analysis were used. These tests were performed using SPSS.22, Amos and Excel software.

4. Research Findings
4.1. Reliability and Validity of the Questionnaire
The items were evaluated on a Likert-scale as the researcher aimed to measure a complex concept through multiple items. Hence, we used Cronbach's alpha statistic to measure the internal consistency of items. An alpha coefficient close to 1 indicates higher coherence of the items. After measuring the reliability of the concepts in question, the following values were obtained for Cronbach's alpha:

Table1. Cronbach's alpha values for reliability assessment.
(Source: Research findings, 2019)

Variable	Items	Cronbach's alpha
ICT	11	.091
Education	9	0.89
Management	15	0.83
Government institutions	12	0.82
NGOs	18	0.87
Rural knowledge base	8	0.93

As the data in the table 1 show, for all the variables under study, the Cronbach's alpha value was greater than 0.7, indicating that the questionnaire items had good internal consistency. In order to assess the validity of the questionnaire items in the present study, the questionnaire was presented to a number of university professors, including the supervisor and advisors of the author, and their comments and feedbacks on the questionnaire were applied to improve the quality of items. A number of questions were omitted, some were modified and a few were also added upon the request of professors.

4.2. Descriptive findings

Data analysis was performed using statistical tests in two parts: 1) descriptive analysis (the demographic characteristics of the sample); 2) inferential analysis (the significance of the relationship between independent and dependent variables).

Table 2. Descriptive characteristics of respondents.
(Source: Research findings, 2019)

Gender		Marita status		Age					Education		
Female	Male	Single	Married	15-20	21-30	31-40	41-50	51 and more	Below diploma	Diploma	University degree
46.3	53.7	35.7	64.3	12.5	35.4	21.5	16.2	14.4	48.1	25.3	26.6

With regard to the demographic information of respondents, the results exhibited that 53.7% of participants were male and 46.3% were female. As for marital status, 64.3% of the respondents were married and 35.7% were single. With regard to the age, 12.5% of respondents were between the age of 15 to 20 years, 35.4% in the age group of 21 to 30 years, 21.5% in the age group of 31 to 40 years, 16.2% between 41 and 50 years, and 14.4% above 50 years of age. As for the level of education, 48.1% of the respondents did not have a high school diploma, 25.3% had a diploma, and 26.6% had a university degree.

4.3. Inferential Research Findings

To answer the questions 1 through 5 and evaluate the association between the independent and dependent research variables, the Pearson correlation statistical techniques and multivariate regression analysis were used (see Tables 3 and 4). Also, the single sample T-test was utilized to answer the sixth item (see Table 4). The results are reported below:

4.3.1. Pearson correlation

Pearson correlation test was used to investigate the relationship between the independent variables and the dependent variable, the results of which are listed in Table (3) below:

Table 3. Tests of significance of the relationship between the independent variables and dependent variable
(Source: Research findings, 2019)

Variable	Correlation coefficient	Significance level
ICT	0.452	0.000
Education	0.552	0.000
Management	0.854	0.000
Government institutions	0.661	0.000
NGOs	0.406	0.000

According to the results, ICT, education, management, government agencies and NGOs are significantly and positively related to knowledge-based realization.

4.3.2. Multivariate regression analysis

In this section, rural knowledge-based indices are conflated to illustrate the impact of independent variables in explaining rural knowledge-based realization

As can be seen, Table 4 presents the results of the concurrent multivariate regression analysis to explain the dependent variable of knowledge-based realization. The results confirm the inclusion of the independent variables of ICT, education, management, government agencies and NOGs into the equation. Based on the calculated data and R^2 values, it can be argued that 79% of the dependent variable changes are directly explained by the variables above. As it seems, the regression model was able to explain 79% of variations in the rural knowledge-based

realization. Thus, it can be posited that 21% of the dependent variable changes are explained by variables other than those considered in this study. According to the beta coefficient (Beta=.099), ICT has a positive and direct association with rural knowledge-based realization. The education variable with a beta coefficient of 0.118 also indicates a positive and direct association between this variable and rural-based knowledge. Management variable with a beta coefficient of 0.249 also reflects a positive and direct relationship between this variable and rural knowledge-centeredness. On the other hand, government agencies with a beta value of 0.842 manifest a positive and direct relationship with the rural knowledge-based realization. Finally, NGO variable with a Beta value of 0.97 indicates a positive and direct relationship with the rural knowledge-based realization.

Table 4. Variables entered in the regression equation accounting for the variance of rural knowledge-based realization
(Source: Research findings, 2019)

Variable	R	R	F value	Beta	T	Sig
ICT	0.89	0.79		0.99	2.335	0.001
Education				0.118	2.768	0.02
Management			219.41	0.2449	5.379	0.006
Government agencies				0.842	21.130	0.000
NGOs				0.097	2.480	0.001

Item 6: Are villagers satisfied with rural knowledge dimensions?

To answer this question, one-sample T-test was used, the results of which are presented in the table 5:

Table 5. Evaluation of rural satisfaction with rural knowledge dimensions
(Source: Research findings, 2019)

Variable	Value = 3					
	Mean	Mean difference	SD	T value	Significance level	Hypothesized mean
ICT	2.02	0.0513	0.884	0.519	0.09	3
Education	2.05	0.0498	0.857	1.07	0.14	3
Management	3.15	0.0496	0.854	3.10	0.002	3
Governmental agencies	3.15	0.0496	0.854	3.10	0.002	3
NGOs	3.10	0.0597	1.02	-10.79	0.000	3

The results of the table 5 illustrate the mean respondents' attitudes of the villagers' level of content with the knowledge-based realization for management (3.15), government agencies (3.15) and the NOGs (3.10). Also, given that the estimated significance is less than 0.05 (P <0.05), it can be asserted that the villagers' satisfaction with the indicators of management, government agencies and NGOs are above average at 95% confidence interval. Given the estimated level of significance, since two indices of ICT are above average, it can be contended that satisfaction is below the average.

4.3.3. Modeling factors affecting knowledge-based realization

Structural equation modeling (SEM) is a quantitative method that allows researcher to test the theoretical model with diverse components. In other words, SEM enables the researcher to formulate and evaluate the associations between different types of variables within the theoretical framework, empirical background and personal perspectives. How variables affect each other and how strong and in what direction is such an impact, are some of the issues addressed in SEM. The SEM and the main parameters of this model (i.e. the direct and indirect effects of independent variables on rural knowledge-based realization) are reported in the following figure and table6&7:
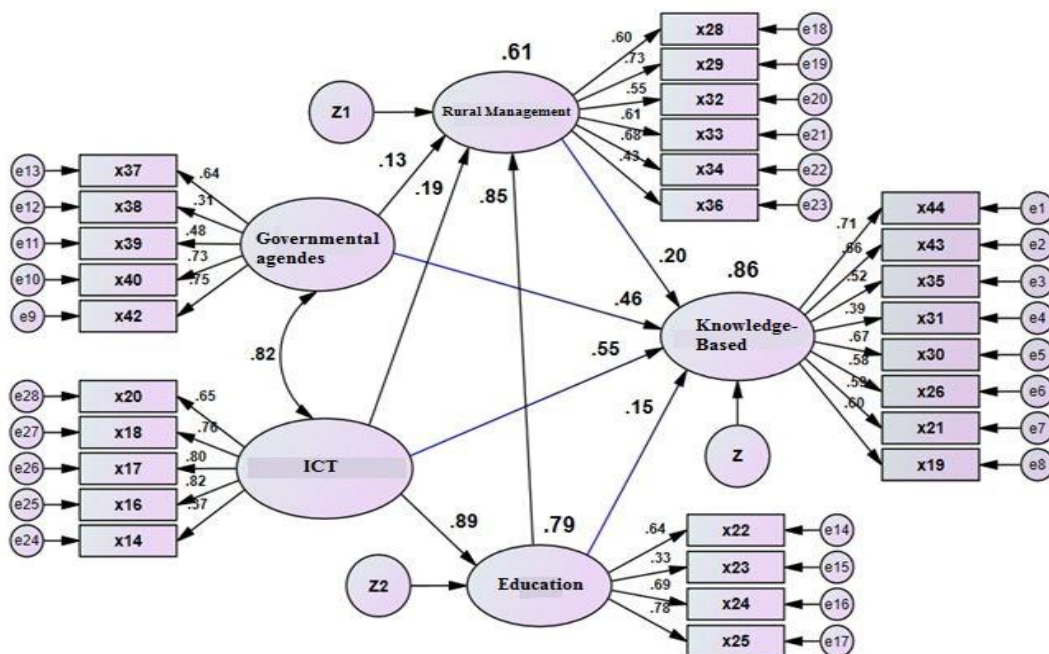

Figure 2. SEM of the direct and indirect effects of independent variables on rural knowledge-based realization
(Source: Research findings, 2019)

Table 6. Estimation of assessment values in the equation model
(Source: Research findings, 2019)

Index	Absolute fit		Comparative fit			Parsimony fit			Holter
	CMIN	GFI	TLI	CFI	PCFI	DF	CMIN/DF	RMSEA	
Value	1005.95	0.90	0.3	0.96	0.60	341	2.95	0.08	124

The assessment indicators of SEM, given the desired range of these indices, suggest that the proposed model is supported by the research data.

That is, the data fit the model and all the indices reflect desirability of SEM.

Table 7. Estimation of the direct and indirect effects of the independent variables on the rural knowledge-based realization variable
(Source: Research findings, 2019)

Independent variable	Mediator variable	Dependent variable	Coefficient of determination	Estimate						Mediation
				Total		Direct		Indirect		
				Value	P	Value	P	Value	P	
Government agencies	–	Rural management	0.61	0.13	0.048	0.13	0.048	–	–	–
ICT				0.19	0.032	0.19	0.032	–	–	–
Education				0.85	0.001	0.85	0.001	–	–	–
ICT	–	Education	0.79	0.89	0.001	0.89	0.001	–	–	–
Government agencies	Rural management	Rural knowledge-based realization	0.86	0.49	0.001	0.46	0.001	0.03	0.236	Rejected
ICT				0.57	0.001	0.55	0.001	0.04	0.132	Rejected
Education				0.31	0.023	0.15	0.044	0.16	0.041	Confirmed
Rural management				0.20	0.031	0.20	0.031	–	–	–
ICT	Education			0.68	0.001	0.55	0.001	0.13	0.050	Confirmed
Education	–			0.15	0.044	0.15	0.044	–	–	–

According to the values listed in the above table above, independent variables (government agencies, ICT and education) account for 61% of variance in the rural management variable. Given the effect size of this index, the coefficient of determination for this index is high. In other words, these variables can explain variations in rural management variables to a large extent. The

effect of variables of government agencies, ICT and education on rural management variable was also statistically significant ($p < 0.05$). Informed by the impact factor of these variables, it can be concluded that the effect of government agencies and ICT on rural management variable is average and below-average, while education variable has a direct and high effect. Moreover, ICT variable

accounts for 79% of variance in education variable. Based on the values of effect size, the coefficient of determination is estimated to be high. In other words, ICT variable can largely explain variance in education variable. The effect of ICT variable on education is statistically significant ($p \leq 0.05$). It can be argued that this variable has a direct and high effect on education variable. On the other hand, the independent variables of the study account for 86% of variance in the rural knowledge-based realization. Given the effect size, the coefficient of determination is estimated to be high. That is, these variables can explain variance in rural knowledge-based realization to a large extent. The direct effect of variables of government agencies, ICT, rural management and education on the rural knowledge-based realization variable is statistically significant ($p \leq 0.05$). Based on the values of effect coefficients, it can be posited that government agencies and ICT variables have a direct and average effect on rural knowledge-based realization and rural management and education have a direct and average effect on this variable. The indirect effect of government agencies and ICT variables on the rural knowledge-based realization is not statistically significant ($p > 0.05$). Therefore, rural management variable does not mediate the relationship between these variables with the rural knowledge-based realization; however, the indirect effect of education variable on rural knowledge-based realization is statistically significant ($p \leq 0.05$). Hence, the rural management variable plays a mediating role in the relationship between education and rural knowledge-based realization. Given the indirect effect of this variable, it can be claimed that this variable has a direct and weak mediating role.

Finally, the indirect effect of ICT through education variable on rural knowledge-based realization was statistically significant ($p \leq 0.05$). Hence, the education variable plays a mediating role in the above variable. Given the value of indirect coefficient of effect, it can be argued that this variable has a direct and weak mediation.

5. Discussion and conclusion

The proliferation of mass media can bridge the gap between the village and the city and contribute to the empowerment of rural residents. This process has been expedited by advancement in ICT and increased mobility. Access to information and knowledge is central to the development of poverty alleviation programs in rural areas. On the other hand, the main driver of all economic, socio-cultural, environmental and other developments is the human mind, and education is what awakens human mind and ignites creativity. Education is an index that yields results in the long-term. Education can be either direct or indirect. Direct education in the villages is provided by schools, Construction Jihadi and Cooperative Organization and other relevant officials. Indirect education in villages may be provided in three forms: 1) official government agencies; 2) unofficial agencies and NGOs; and 3) traditional education taught by fathers, masters, and others.

The means and instruments required to achieve these goals in rural community are supplied by the relevant organizations and institutions. In fact, the rural management is in charge of organizing and guiding the community and the rural environment by setting up these organizations and institutions. Islamic councils and Dehyariha in villages are the main pillars of rural management that jointly strive to advance rural development goals. Incomplete knowledge and unfamiliarity of these two important pillars of rural management with developmental platforms and capacities lead to the wastage of time and resources, and it is vital to strengthen the existing mechanisms at work for these two important rural management institutions.

While in the past only the Ministry of Agriculture and Rural Development were responsible for the rural sector, in the post-Islamic Revolution era diverse institutions and bodies such as the Housing Foundation, Construction Jihad, Ministry of Interior and Welfare Organization, Cooperative Organization, Mostazafan Foundation, Imam Khomeini Relief Committee, Shahid Foundation, etc. are involved in rural affairs. In addition to the lack of any coordination between the missions and activities of these bodies, they employ various operation strategies and have diverse social and political positions at villages. More importantly, they still continue to confine their role to intervention, assistance and agency instead of assuming a moderating, educating and promoting role. It has escalated the dependence of people on the government and reduced self-reliance and participation.

Rural knowledge-based realization calls for decentralization, diminished tenure of government, strengthening of voluntary and non-voluntary public institutions in villages, correction and modification of rural management laws and regulations to create an integrated rural management system, and delegate the bulk of the government's executive tasks in agriculture and rural affairs to Dehyariha along with the transfer of facilities and financial resources. Successful decentralization more than anything is a function of the real power and competence of the government to support public NGOs and help to build capacity. However, one of the major obstacles to knowledge-based realization and sustainable rural development is the inadequate organizational structure of rural development. By adopting a decentralized approach and strengthening nongovernmental institutions for mobilization along with nourishing organizational integration in the field of policymaking, we can lay the ground for rural knowledge-based realization.

At the end, the following suggestions are offered:

• Developing ICT offices and broadband the Internet networks in the villages and expanding new ICT services to facilitate people's everyday needs;

• Optimal use of new technologies in rural development as a driving force for regional and national economic development;

• Promoting virtual education in rural areas by using ICT to develop agriculture, handicrafts and other related industries;

• Expanding e-government services and promoting a culture that encourages the use of these services by rural people;

• Using the huge potentials of the public (NGOs), private and cooperative sectors for rural management and assigning unused rural areas to these sectors for the purpose of pursuing and achieving the desired goals;

• Preparing the ground for increased rural participation in the management of rural affairs by paving the way for the engagement of rural people in rural-related activities;

• Improving the skills and knowledge of rural people through empowerment training courses;

• Establishing branches of rural affairs in the central villages with the aim of bringing state clerks and decision-makers closer to the rural people and parallel works of government and non-government agencies in the villages;

• Offering managerial and economic training to rural residents to better manage village affairs and also holding training courses to acquaint the villagers with management concepts;

• Cutting administrative red tape for rural development and organization;

• Setting up and launching a rural information services center;

• Organizing scientific conferences on different aspects and potentials of the villages;

• Allocating unused rural areas to public institutions for the purpose of pursuing and achieving the objectives of these institutions.

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مدل‌سازی معادلات ساختاری عوامل مؤثر بر تحقق دانایی محوری روستایی

(مطالعه موردی؛ روستای دهکده- شهرستان حمیدیه)

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چکیده مبسوط

۱. مقدمه

جامعه دانایی محور مبتنی بر اطلاعات و دانش، ضرورت انکارناپذیر جهان امروز است. در رویکرد قرن بیست و یکم، جامعـه مبتنـی بـر اطلاعات به سمت جامعه مبتنی بر دانایی حرکت می‌کنـد. جامعـه دانایی محور بر این مبنا استوار است کـه علـم، دانـش، تخصـص و نوآوری و خلاقیت محرک اصلی توسعه جوامـع می‌باشـد. امـروزه بسیاری در سراسر جهان بـا محـور قـرار دادن دانـش و معرفـت در عرصه‌های مختلف بر این باورند که سرعت بخشیدن به مبادله دانش و اطلاعات نقش بسیار مهمی در دستیابی به توسعه همه‌جانبـه دارد که درواقع جامعه مبتنی بر دانش و دانایی بـه‌عنوان الگـوی توسعه شناخته می‌شود. سـرمایه‌گذاری در بنیـان‌های دانـایی محـوری در روستاها نیز می‌تواند جامعه روستایی را به سـمت آینـده مطلـوب و نقش‌آفرینی در عرصه‌های ملی و بین‌المللی یاری رساند. بـه همـین منظور پژوهش حاضر باهدف مدل‌سازی معادلات ساختاری عوامـل مؤثر بر تحقق دانایی محوری در روستای دهکده از توابع شهرستان حمیدیه صورت گرفته است.

۲. مبانی نظری تحقیق

ازنظر پیتـر درایکـر محقـق و تحلیلگـر مشـهور در عرصـه سیاسـی، اقتصادی، مدیریتی، دانایی عبارت است از اطلاعاتی که سبب تغییـر یک‌چیز یا شخص می‌گردد؛ چه با فراهم ساختن زمینه اقـدام بـرای تغییر و چه با قادر ساختن یک فرد یا نهاد بـرای انجـام یـک عمـل متفاوت نسبت به آنچـه درگذشته انجام مـی‌داده است. وی ایـن واقعیت را یادآوری می‌کند که جامعه صنعتی حاصل انقلابـی اسـت که در عصر صنعت روی داد و تأثیر آن بر جامعه منحصـر بـه پدیـد آمدن نوعی از جامعه گردید که اصطلاحاً جامعه صنعتی لقب گرفت. همچنین عصر اطلاعات سبب پدیـد آمـدن جامعـه اطلاعـاتی یـا به‌عبارتی‌دیگر جامعه دانایی محـور گردیـد. ازنظـر میسـون دانـایی محوری عبارت است از جامعه‌ای کـه دانـایی در کلیـه شـئونات و جنبه‌های آن جریان دارد و این جریان دانایی یا اطلاعات اسـت کـه بسترسازی تصمیم‌گیری‌های مختلف در عرصه جامعه را بـر عهـده دارد. به عقیده وی دانایی زیربنای جامعه نوین است و هرکس که به نحوی با دانایی سروکار دارد جز سازندگان جامعه محسوب می‌شود. دانایی عبارت است از موجـودی ابزارهـا و مقولـه‌های مفهـومی کـه به‌وسیله مغز برای خلق، جمع‌آوری و تقسیم اطلاعات بکار می‌رونـد. از دیدگاه میسون دانایی شکل کاربردی اطلاعات بـا توجـه بـه فهـم استخراج‌شده از آن‌هاست. کاربرد همه‌جانبه و ناخودآگاه این دانـایی جامعه‌ای را دربرمی گیـرد کـه به‌اصطلاح از آن بـه‌عنوان «جامعـه دانایی محور» یاد می‌شود.

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۳. روش تحقیق

رویکرد حاکم بر این پژوهش، توسعه‌ای- کاربردی و روش تحقیق به شیوه توصیفی، تحلیلی و پیمایشی است. داده‌های آماری پـژوهش نیز از روش‌های کتابخانه‌ای و میـدانی (پرسش‌نامه، مصـاحبه بـا اشخاص و مسئولین مربوطه) استخراج گردیده است. بدین منظور با مراجعه مستقیم به مراکز آماری و آمارنامه‌ها، اطلاعات جامعی بـرای تحقیق تهیه‌شده و سپس از طریق پرسش‌نامه، مصاحبه و مطالعـات میدانی، پژوهش مزبور تکمیل‌شده است. سؤالات پرسش‌نامه با توجه به اهـداف تحقیق و عوامـل کلیـدی در تحقـق دانـایی محـوری در روستای دهکده تنظیم‌شده به‌طوری‌که بتوان اطلاعات موردنظر را از نمونه آمـاری موردمطالعـه گـردآوری نمـود. در ارتبـاط بـا اهـداف موردنظر، جامعه آمـاری پـژوهش حاضـر شـامل سـاکنان روسـتای دهکده کـه در سـال ۱۳۹۵ بـین ۱۸ تـا ۶۵ سـال سـن داشـتند و به‌صورت دائم در روستا ساکن بودند؛ که تعداد آن‌ها ۱۹۸۰ نفر بـود. با توجه به جامعه آماری در این پژوهش، حجم نمونه که بـا اسـتفاده از فرمول کوکران محاسبه‌شده برای جامعه روستای دهکده ۳۲۰ نمونه مشخص‌شده اسـت جهـت تجزیـ‌هوتحلیل داده‌هـا و آزمـون فرضیات پژوهش از فنون آماری ضریب همبستگی پیرسون، T تـک نمونـه‌ای، رگرسیون چند متغیره و تحلیل مسیر استفاده‌شده است. این آزمون‌ها با استفاده از نرم‌افزارهای SPSS.22، Amos و Excel انجام شد.

۴. یافته‌های تحقیق

بررسی معناداری رابطه بین متغیرهـای مسـتقل تحقیـق بـا متغیـر وابسته با استفاده از آزمون همبستگی پیرسـون نشـان داد کـه بـین شاخص‌های فناوری اطلاعات و ارتباطات، آموزش، مدیریت، نهادهای دولتی و غیردولتی بـا دانـایی محـوری روسـتایی رابطـه معنـی‌دار و مثبت وجود دارد. نتایج تحلیل رگرسیون چنـد متغیـره بـه شـیوه‌ی هم‌زمان برای تبیین متغیر وابسته دانایی محوری روستایی نشان داد که همه متغیرهای مستقل بـا متغیـر دانـایی محـوری روسـتایی در محدوده موردمطالعه دارای روابطِ مثبت و مستقیم است. بـر اسـاس نتایج مدل و با تکیه‌بر مقادیر R^2 به‌دست‌آمده می‌توان گفت کـه ۷۹ درصد از تغییرات متغیر وابسته توسط متغیرهـای مسـتقل بـه‌طور مستقیم تبیین می‌شود؛ پس می‌توان گفت ۲۱ درصـد از تغییـرات متغیر وابسته توسط متغیرهای دیگری تبیین می‌شـود کـه در ایـن پژوهش موردنظر نبوده‌اند. بر اساس نتایج مدل معادلات سـاختاری،

متغیرهای مستقل پژوهش درمجموع ۸۶ درصـد از واریـانس متغیـر دانایی‌محوری روستایی در محدوده موردمطالعه را تبیین می‌کنند؛ با توجه به مقادیر مربوط به حجم اثر شاخص ضریب تعیین این مقدار بـزرگ برآورد می‌شود، بـه‌عبارت‌دیگر ایـن متغیرهـا در حـد بـالایی تـوان تبیـین واریانس متغیر دانـایی‌محـوری روسـتایی را دارنـد؛ بنـابراین اثر مسـتقیم متغیرهای نهادهای دولتی، فناوری اطلاعات و ارتباطات، مدیریت روسـتایی و آموزش بر متغیر دانایی‌محوری روستایی به لحاظ آماری معنادار است.

۵. بحث و نتیجه‌گیری

بر اساس نتایج، شاخص‌های ارزیابی کلیت مدل معادله ساختاری بـا توجه به دامنه مطلوب این شاخص‌ها درمجموع بیانگر این است کـه مدل مفروض تدوین‌شده توسط داده‌های پژوهش حمایت می‌شـوند، به‌عبارت‌دیگر برازش داده‌ها به مدل برقرار است و همگی شاخص‌هـا دلالت بر مطلوبیت مدل معادله سـاختاری دارنـد؛ بنـابراین دانـایی محوری روستایی مستلزم تمرکززدایی، کاهش تصـدی‌گری دولـت، تقویت نهادهای عمومی غیردولتی و داوطلبانه در روسـتاها، اصـلاح قوانین و مقررات مربوط بـه مـدیریت روسـتایی در جهـت ایجـاد و سیستم یکپارچه مـدیریت روسـتایی، واگـذاری بخـش عمـده‌ای از وظایف اجرایی دولت در بخش کشاورزی و روستایی به دهیاری‌هـا همراه با واگذاری امکانـات و منـابع مـالی مـی‌باشـد. تمرکززدایی موفقیت‌آمیز، به قـدرت واقعـی و شایسـتگی دولـت در حمایـت از نهادهای عمومی غیردولتی و کمک به ایجاد توانمنـدی‌های بیشـتر بستگی دارد. به‌هرحال یکی از موانع مهم تحقـق دانـایی محـوری و توسعه پایدار روستایی، ساختار نامناسب سازمانی توسـعه روسـتایی بوده است کـه بـا اتخـاذ رویکـرد تمرکززدایـی و تقویـت نهادهـای غیردولتی و به تحرک واداشتن آن‌ها و همچنـین ایجـاد یکپـارچگی سازمانی در سیاست‌گذاری امـور روسـتایی می‌توانـد زمینـه تحقـق دانایی محوری روستایی را فراهم نماید.

کلمات کلیدی: دانایی محوری، فناوری اطلاعات و ارتباطات، توسعه روستایی، معادلات ساختاری، روستای دهکده، شهرستان حمیدیه.