The projection model of Iran’s crop production in 2025

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ABSTRACT

The aim of this study is to develop a model to provide projections of supply of major crops in target year 2025 in Iran. To this end, a model was constructed using positive mathematical programming (PMP) approach. The model takes into account production factors constraints in different provinces in the base year as well as in the target year, and provides forecasts of potential supply of major crops in each of the provinces as well as in national level. In addition, price levels and land productivity of the crops for target year as input to the PMP model were projected using ARIMA time series approach. Results indicate that from 2008 to 2025, total crop production will increase from 36.17 million ton to 45.5 million ton with a cumulative growth rate of 25.8 percent. The rate of change differs among different crops. Cereals show the highest growth rate (%76.1) while vegetable (%2.15) and industrial crops (%20.5) reveal the lowest ones. Comparing the predicted supply with those of demands indicates that supply of wheat, potato, onion and cereals will meet the direct demand for these commodities, however, the country will experience supply shortages in the case of oilseeds, sugar beet and rice and calls for more investments in production.

Keywords: crops, Iran, PMP, supply projection, target year 2025.

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Dates price risk management using futures markets tools
(Bivariate GARCH model)

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ABSTRACT

Agricultural activities are risky activities. In these activities, various natural, social and economic risks have created fragile and vulnerable situation for producers. Price risk in agricultural products has caused financial problems for many producers and farmers. To deal with these price risks and price fluctuations, there are varieties of tools. This paper focused on futures markets instruments as risk management tools for date's price risks management. This study used monthly futures prices of dates and used mean-variance framework to determine the optimal hedge ratio with OLS method. Due to the conditional variances autocorrelated in residuals in regression models, time varying hedge ratios with Bivariate GARCH models were determined. Bivariate GARCH model was used in this study to determine hedge ratios. Therefore, first, time varying conditional variance covariance matrix with using multivariate models based on heterogeneous variance BEKK (1, 1) was estimated. Then, using the results of this matrix, the optimal time varying hedge ratios was calculated. Dates future price series were predicted using artificial neural networks pattern and the GARCH model. The results of hedge performance showed that time varying hedge ratios were eliminated more price risk than the OLS method. The results showed that the average hedge ratios of Bivariate GARCH model is 0.7, meaning that about 70% of the date's price risk could be reduced with sales in the futures market.

Keywords: BGARCH models and dates, future market, price risk.

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Modeling farmers’ environmental behavior in Shiraz County by using Value-Belief-Norm theory

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ABSTRACT

In recent years, degradation of environment (water and soil resources) by farmers has increase concerns about sustainability of agriculture. Farmers’ behaviors affect conservation of these resources and play important role in sustainability of agriculture as well. Shiraz County, like other parts of the country, suffers for degradation of soil and water resources. The aim of this study was to provide a model that can predict Farmer’s environmental behavior of Shiraz County using Value-Belief-Norm theory. Statistical population includes the farmers of Shiraz County. Questionnaire was the instrument for data gathering. Multi-stage cluster random sampling was used to collect data from 372 farmers as the research sample (by Krejcie & Morgan). The questionnaire validity was confirmed by panel of professors at Agricultural Extension and Education Department of Shiraz University. The questionnaire reliability was assessed with Cranach’s alpha (data from pilot study). The results showed that biosphere value-orientation, altruistic value-orientation, environmental personal (moral) norm, and responsibility to protect environment had the most influence on forming farmers’ environmental behaviors. Adduced as recommendations are 1. providing the training to change farmer’s egoistic value-orientation to biosphere value-orientation and altruistic value-orientation; 2. provide training the personal (moral) to correct relationships between famers and environment, and 3. increase farmer’s responsibility for protection of environmental resources.

Keywords: environmental behavior, model of environmental behavior, Value-Belief-Norm theory.
Multi-group analysis in the relationships between leadership stereotypes, leadership competencies and achievement motivation in leadership role by agriculture extension agents

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ABSTRACT

This study has two main purposes including examining the structural model of leadership stereotype, leadership competency, and achievement motivation in leadership role and investigating the moderating effects of gender on the overall model. Using a sample of 303 extension agents from three Jihad-e-Agriculture Organizations of Tehran, Kermanshah, and Khorasan Razavi provinces in Iran, we conducted a survey using structured questionnaires. The data were collected and analyzed using Structural Equation Modeling (SEM) multivariate technique. The results showed that leadership stereotype and leadership competency significantly influence achievement motivation in leadership role of extension agents while the relationship between leadership stereotype and leadership competency was not significant. The results further demonstrated that the relationships among leadership stereotype with leadership competency and achievement motivation in leadership role have been moderated by gender. In fact, it has been concluded that leadership stereotype favors men in developing leadership competency and achievement motivation in leadership role while it is negative for women. This study, in regard to leadership stereotype, suggests that although the pressures of stereotypical thinking have not gone away but changing them is time consuming and needs constant negotiations, and therefore, presenting the training program on how to correct these stereotypes in a person is a strategy for starting this action.

Keywords: achievement motivation, gender, extension agents, leadership role, leadership stereotype, mastery, salience, willingness.
Analyzing the impacts of agricultural land use change according to the experts opinion of agricultural land organization in Iran

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ABSTRACT

Agricultural Land use Change (ALC), due to its direct relation with some issues such as food security and environmental sustainability, has become one of the main challenge of humanity in the 21 century. According to the 2012 FAO report, from 1970 to 2009, the per capita of arable land in the world and Iran respectively has decreased 1.46% and 2.054%. It represents that ALC conditions in Iran is worse than the most of the other areas of the world. Undoubtedly, reduction the area of agricultural lands entails the various economical, social and environmental impacts. The main object of this study was analyzing the impacts of ALC. This study was a survey research which conducted by interviews and correspondence. The data collection instrument was a questionnaire. The study group consisted of 101 experts working in Agricultural Lands Organizations and Administrations in 2013. Since they were limited, all of them were interviewed. They were randomly selected through 135 experts. This study showed that "accelerating the process of ALC due to change in the price of the land", "increasing the motivation of ALC among other farmers" and "increasing the consumption of energy" were the most important economical, social and environmental impacts of the ALC. But, based on the results of structural equation model, "reduction the incentive to live in rural areas", "increasing the income risk of rural households" and "reduction the air quality" although were not the most important impacts, but were the most effective social, economical and environmental impacts of these changes.

Keywords: agricultural lands, agricultural land conversion impacts, lands fragmentation.

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Forecasting changes in agricultural employment rate in Gilan Province using some economic indicators

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ABSTRACT

The overall aim of the present study was to estimate the time series of agricultural employment in the Gilan province during 1976-2011, and modeling and forecasting employment using artificial neural networks for years 2012-2019. For this purpose, employment series calculated by interpolation and input variables selected based on previous theoretical and empirical research. Finally, number of agricultural work force predicted through designing and training of different neural networks architectures. Required data obtained through population and housing report of 1976-2011 and provincial statistical year books. Results showed that number of employees during the period from 2012-2014 will be lower than in 2011 and then during 2015 to 2019 will be increased. Due to lack of time series data of economic variables at the regional level, this research is an essential and primary step to achieve reliable statistics of number of agricultural employment at provincial level that Provide required data for future studies on labor market and can be used for planning and policy making by related authorities.

Keywords: agricultural sector, artificial neural networks, employment forecasting.
Comparison of services quality assessment models between students from teaching and learning process quality by using artificial neural network

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ABSTRACT

The aim of this study is quantity determining and evaluating of the quality position of teaching and learning process. So, the artificial neural networks were used for modeling nonlinear relationships to inspect and evaluate different models of service quality evaluation. The statistical population include 1070 peoples, which were master and PhD students of Faculty of Agriculture of Ferdowsi University (Mashhad). 280 questionnaires were collected by using Morgan table; from which 202 questionnaires were finally analyzed. In order to inspect and evaluate the quality of teaching and learning process, four models were used with artificial neural networks, including non-weighted Servprof, non-weighted Servqual, weighted Servprof and weighted Servqual. The results of the artificial neural network method showed that weighted Servqual model is more accurate to evaluate the quality of teaching and to predict satisfactory. 7-29-14-1 architecture with 29 and 14 neurons respectively in the first and second hidden layers and one neuron (weighted Servqual) in the output layer was chosen as the best model for determining the quality evaluation. This architecture has the best results for R (0.96), MAE (0.18), MSE (0.06) and MAPE (4.41%) between the actual and modeled values.

Keywords: artificial neural networks, quality of teaching, student satisfaction, weighted Servqual model.
Investigating influence factors on farmers' intention in using modern channels
(Case study: Feyzabad water supply network in Fars province)

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ABSTRACT

Due to the importance of technological development in agriculture, it is necessary to increase intention of technology using and so its adoption among farmers. The aim of this study was investigating influence factors on farmers' intention in using modern channels. Research population was all farmers covered of Feyzabad networks water supply in Fars province (192 farmers). Samples of 127 farmers were selected through stratified random sampling. Data was collected using a questionnaire. Face validity of the questionnaire was obtained through a panel of experts and reliability was obtained through pilot testing. The Cronbach's alpha ranged from 0.72 to 0.91. Results revealed that subjective norm and attitude towards the use of modern channels had positive and significant direct effect on the intention of using modern channels. Also, social capital, compatibility, access to information, the tendency of participation in project, sense of belonging to the irrigation network, years of experience in farming and observability of results had significant direct effect on attitudes toward the use of the modern channels. According to results, some recommendations have presented at the end of article.

Keywords: Feyzabad Dam, intention to use, modern irrigation networks, technology adoption.
The investigation of employability status in curriculum of University of Tehran agriscience post graduate students

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(Received: Nov. 26, 2010 - Accepted: Sep. 4, 2012)

ABSTRACT

The general aim of this research was the investigation of central curriculum components in enhancement of University of Tehran agriscience student employability which was implemented based on the survey methodology. The statistical sample in question was University of Tehran agriscience postgraduate students that were in total 1491 cases. The sample size was determined as 310 persons through Morgan table. Among them randomly and through use of proportional allocation sampling methodology was used to choose the sample. Questionnaires compiled and distributed to gather data and the related information were employed to measure constructs. Having acquired the views of the University of Tehran agricultural extension and education experts, the face validity of the questionnaire was confirmed. The reliability coefficient of the questionnaire was based on the alpha coefficients and calculated above 0.81. Dominant statistical method was canonical correlation (CCA). For data processing SPSS17 package was employed. The results showed that, current curriculum only fostering academic skills and business development and personal development skills are absent and have a decreasing stream. Finally, some of suggestions and implications are forwarded.

keywords: curriculum and canonical correlation, employability, University of Tehran Agriscience.

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Evaluation the dairy demand of Iran using almost ideal demand system (AIDS)

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ABSTRACT

Consumption of dairy products in terms of the health and economic terms is very important. The analysis of consumer behavior can help to take policies consistent and correct in this regard. In this study the demand for milk, yogurt and cheese was estimated by using time series data related to 1984-2009 in the framework of the idea of an almost ideal demand system. The results showed that all of own-price elasticity is negative. The elasticity of milk and cheese are low but the yoghurt elasticity is high. All the income elasticities are positive, and the calculation of Allen elasticity showed that there are a substitution relationship between “milk and yogurt” and “yogurt and cheese” and complementary relationship between “milk and cheese”.

Keywords: almost ideal demand system, consumer behavior, dairy products, elasticity.

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Factors affecting men and women of cotton producers’ knowledge toward sustainable agriculture in Isfahan Province

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ABSTRACT

The consumption of chemical fertilizers and increasing environmental crisis has emphasized to increase interest in sustainable agriculture. The farmers' knowledge related to sustainable agriculture has an important role in their environmental behaviors. This research investigated factors affecting men and women cotton producers’ knowledge. The survey research was conducted using stratified random sampling in Isfahan Province. The subjects were selected from 178 cotton producers’ families (179 and 178 men and women, respectively). The findings indicated that age and years of agricultural job had negative correlation with women cotton producers’ knowledge of sustainability. Based on the findings of regression access to information and environmental affects had important roles to determine women and men cotton producers’ knowledge of sustainability. Findings indicated that women and men cotton producers that view agriculture as a principle job had a better knowledge of sustainability. The results indicated that awareness of environmental consequences, moral norm toward sustainable activities, yield of cotton and ascription of behavioral responsibility were determinates of men cotton producers’ knowledge of sustainability.

Keywords: cotton producer, Isfahan, knowledge of sustainability, sustainable agriculture.

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Educational needs of rural women on healthy milk production in traditional dairy farms in Bam city

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ABSTRACT

Traditional dairy farms play important role to obtain dairy and rural household income. Rural women are managers these units. Unfortunately, they haven't educated because of social and cultural problems. Milk production contain high microbial count endanger community health and also producers economic in traditional farms. The project has studied educational needs of rural women regarding safe milk production, using correlation descriptive methods. Statistical community includes all rural women in Bam city. By using two stages cluster sampling method 90 numbers to complete questionnaire was selected. The results showed that there are significant relationship between variables age, studies level, cow keeping record times of presence of participants in educational class, visiting selective cow dairy farms and study extensive issues with dairy farmers women knowledge. Finally, it was concluded that traditional dairy farmers women need largely to educate about feeding, disease and health of animal.

Keywords: Bam city, educational needs, healthy milk production, rural women, traditional dairy farms.
Factors affecting on rural households food security
(Case study :Karnachy Village in Kermanshah County)

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ABSTRACT

Access to adequate food and health nutrition is the major subject in society health and
development. So, food security has a particular importance among priorities of
development in each country. The main purpose of this study was to investigate
influencing factors affecting food security among 100 rural households in Kerenchy (a
village in Kermanshah County) selected by random sampling, methodological
descriptive and cross-sectional performed in 2012. General information questionnaire
was used for collecting socio - economic situation of population also for surving food
security situation of population used standard questionnaire (USDH). Data analysis
was performed using Chi-square test and logistic regression. Results showed that there
were positive significant relationship among socio - economic households' status with
there food security instance; monthly family income, father's job status, live facilities,
level of mother education and family size. Based on the final results of the logistic
regression, among all of the variable in this study, father's occupational status,
household income and access to facilities had the greatest effect on the prediction of
study on food security.

Keywords: food security, rural households, socio- economic factors.

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Socio-economic factors influencing farmers’ attitudes towards integrated pest management in Mashhad

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ABSTRACT

This research was done with aim of analyzing the influencing factors on Farmers’ Attitudes toward IPM in Mashhad. The statistical population was 1500 farmers. 160 farmers were selected with Cochran formula. This research study farmer’s attitude and analyze the socio-economic factors influencing the IPM. There was statistically significant relationship between farmer’s attitude and information canals, distance to city and income. The result of multiple discrimination analysis regression revealed that 44% of variability in farmer’s attitude stems for information canals and income.

Keyword: attitude, farmer, integrated pest management, sustainable agriculture.

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Attitude of agricultural advisory and technical engineers towards performance of Agricultural and Natural Resources Engineering Organization (ANREO)

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ABSTRACT

The Purpose of this research was to determine the attitude of agricultural advisory and technical engineers towards ANREO. The population of this study included 127 engineers in Songhor Township. Based on their job tenure and field of study, a purposeful sample of 45 engineers participated in this study. This study was conducted using Q methodology. It is a combination of qualitative and quantitative methods to identify people’s mindset. Using focus group interview, 25 statements were derived and recorded on each Q card. In the next step, all 25 validated cards were handed over to participants for sorting. Results of Q factor analysis revealed that engineers hold four mindset (visionary, critically, constructivist and conservative look) towards ANREO. The result of this study has implications for ANREO in Kermanshah province. If ANREO is to attract and retain more members, they need to take members’ attitude into consideration.

Keywords: agricultural advisory and technical engineers, Agricultural and Natural Resources Engineering Organization, attitude, Q methodology.
The role of agricultural water markets in the allocation and pricing of water resources (Case study: Mojen Water market)

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ABSTRACT

Water markets are instrumental in efficient allocation and pricing of scarce water by enhancing allocative and price efficiency of water use. The prerequisites for water market formation are tradable water rights independent from ownership of the land, extensive water canals, water use associations, and adequate market regulations. Mojen water market has been facilitating exchange of alternative water rights for more than 40 years accommodating among other things 30% of total farmers water demand. The total volume of water exchanged through the marker over the 3 year period of (2002-2004) are 38, 54 and 88 Q³, with average price of 555, 651, and 664 IR/Q³, respectively. The purpose of this research is to estimate water demand function and identify the roles that market plays in pricing and efficient allocation of water. The estimated demand price elasticities for single and joint production of potato and wheat are significant and negative. The differential among the absolute value of the estimated elasticities reveals that potato and wheat are the major and the minor crop choice in the farmers’ production plan. Producers are less sensitive to variation of water price when they produce potato and wheat jointly compared to their single plantation. The price elasticity of demand for the former joint outputs is -0.256 compared to that of potato and wheat alone which are -0.276 and -0.477, respectively. The difference between the average products of water for the said crops enforces the obtained elasticities results.

Keywords: agricultural water demand, Mojen irrigation corporation, tradable water rights, water market, water price, water user’s associations.

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Analyzing the impacts of changing agronomic land use to orchard from the viewpoint of orchardist in the west of Urmia lake basin

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ABSTRACT

The purpose of this research was to analyze the impact of agronomic land use change to orchard in the west of Urmia Lake basin. The target population was about 12000 consisting of all the farmers in the west of Urmia Lake basin that changed their agronomic land use to orchard. Using Cochran’s formula and stratified random sampling method, 150 apple and grape growers were chosen. Required data were gathered using questionnaire instrument and face to face interview technique. Validity and reliability of questionnaire determined using agricultural extension, environment and soil sciences experts’ viewpoints and the Cronbach alpha coefficient (0.83), respectively. Results showed that irrigated and rain-fed agronomy lands were changed to orchards in 1972 and 1994, respectively. Using exploratory factor analysis, 65 % of the variance of land use change impacts could be explained by profitability and welfare, improving the air and soil quality, promoting the social status and roles, reducing workload, increasing the use of nutrients, improving marketing skills and eco-toxicity of aquatic and terrestrial systems.

Keywords: explanatory factor analysis, land use change, Urmia Lake Basin.

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Analysis of effect of farmer field school approach on agricultural knowledge and information management in Sharifabad regional, Alborz County, Iran

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ABSTRACT

Elements of agricultural knowledge and information management (research, extension, farmers, NGO and …) to near together in appropriate process were used in farmer field school approach. The purpose of this study was to determine the effect of farmer field school (FFS) approach on agricultural knowledge and information management. The research population consisted of 420 farmers who participated in FFS approach in Sharifabad regional selected randomly (200). The methodological approach of this study was descriptive-correlative. Validity of the instrument was established by a panel of experts consisting of senior faculty members and research committee advisors. Reliability analysis was conducted by using Cronbach alpha formula and result was 81. The results showed that 18.8, 16.2 and 65 percent of farmers expressed that their agricultural knowledge and information management were weak, moderate and good respectively. Also the results of the multiple regression analysis (stepwise method) revealed that the management, social, education- extension and economic factors explained a variation of 77.9 percent of the agricultural knowledge and information management by farmers.

Keywords: Alborz, farmer field school approach, knowledge and information management.