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The Impact of Human Capital on Green Innovation

Manouchehr Ansaris [1], Sheida Ashrafi [2], Hoda Jebellie [3]

Abstract: Today, the environment becomes the main pillar of the decision making of many organizations in the world. Because on the one hand consumers ' awareness of environmental issues increased and on the other hand ،strict environmental rules defined by governors. Environmental responsibility combined with the need of organizations to competitiveness ،created the concept of green innovation. It is evident that innovation is meaningless without green human capital ،who are fully aware of environmental aspects of their organization's activities. It's widely accepted that, company's green policies and long-term market survival and financial performance are convergent. Pioneer companies combined innovation with green strategies and invented green innovation, which brought them distinctive competitive advantage and enhanced their brand image. In this research we examined the impact of human capital on green innovation. Human capital construct had three parts named: Knowledge background, psychological background and capacity and green innovation construct defined by two parts as: green leadership and green supply chain. For the analysis of data smart PLS software used. 50 managers and experts have been selected based on simple random sampling. The result of this research showed that human capital can trigger green innovation by 76%.

Keywords: ***Green, Green Innovation, Green Products, Green Social Capital, Human Capital.***

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Applying Genetic Algorithm for an Integrated Supply and Production / Distribution Planning in Assembly Systems

Mohammad Sabet Motlagh [1], Ali Mohaghar [2]

Abstract: An efficient supply chain system operates under a strategy to minimize costs by integrating the different functions inside the system and by meeting customer demands in time. In this paper, an integrated supply-production and distribution planning (SPDP) is considered despite the fact that in most of the Papers, Part of the supply chain has been studied, not all parts. Therefore, we develop a mathematical model that calculate the optimal inventory lot sizing for each supplier and minimize the total cost associated in the process of procuring raw material, transferring and holding raw materials, manufacturing and, finally, delivering the finished product. The problem is formulated as a pure integer programming and heuristic genetic algorithm (GA) method applied to solve it. Then we test the proposed model in a case study conducted in Iran. Experimental results show that such a model can reduce the costs of the case study by 8/4694%.

Keywords: *A Pure Integer Programming, Genetic Algorithm, Inventory Management, Mathematical Modeling, Supply Chain Management.*

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An Efficient Preference Learning Method Based on ELECTRE TRI Model for Multi-criteria Inventory

Masoud Zarrinsadaf [1], Amir Daneshvar [2]

Abstract: The multiple criteria ABC inventory analysis method is a well-known inventory management method for inventory classification. In most ABC classification techniques, a completely compensatory approach is adopted to classification problems with criteria aggregation. Hence, attention should be paid to non-compensatory approaches with criteria aggregation. Our literature review revealed a lack of research on the non-compensatory approach to this problem. The ELECTRE TRI model is based on outranking relations and adopts a compensatory approach to calculations. However, this model has not been popular in determining preferences of decision makers (parameters) due to its complexity and costly nature. To solve the aforementioned problems, a method was proposed in this research which uses the particle swarm optimization algorithm and simultaneously learns all of the decision maker's preferences from the data through an evolutionary process and uses it in inventory classification. Unlike the standard data mining models, which carry out nominal classifications, the proposed method offers ABC inventory classification. Results of testing the proposed method on inventory datasets revealed its potential to compete with other standard classification models.

Keywords: *ABC Analysis, ELECTRE TRI, Multi-criteria Inventory Classification, Particle Swarm Optimization (PSO) , Swarm Algorithms.*

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Forecasting Project Duration by Earned Duration Management and Risk Management

Akbar Alam Tabriz [1], Farnoosh Khaledian [2], Mustafa Mahdipour [3]

Abstract: Being observed frequently that projects cannot achieve to their plan duration and their budget. Utilizing retrospective method is one of the reasons for this problem. In this research two method, Earned Duration Management and risk management, has been used to remove the gap of the plan and the reality; this enable the project to utilize both high accuracy of the first method and prophecy of the second tool. First, control limits were made by Monte Carlo simulation; then, the risks were recognized, after that, project was simulated under the condition that assumed critical risk has happened. At the end, if the simulated indexes violate the limits it will be a signal that program should be revised. The final estimated duration is about two month more than the row plan, that it shows the necessity of taking accounts of risks during planning.

Keywords: ***Earned Duration Management, Project Statistical Control, Risk Failure Mode and Effect Analysis, Risk Management.***

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Quality Function Deployment by Using Fuzzy Linear Programming Model

Jalil Hasan Ghasemy [1], Alieh Kazemi [2], Mahnaz Hosseinzadeh [3]

Abstract: Quality of products and services is considered as a key factor for customer satisfaction. Quality function deployment (QFD) is known as a critical tool for translating voice of customers to prioritize technical requirements of a production. The level of this satisfaction depends on the number of fulfilled requirements. It should be noted that this level varies according to the possible constraints. This paper aims to maximize customer satisfaction based on the possible limitations by using a fuzzy linear programming model. In this regard, customer requirements are prioritized by using fuzzy Delphi method and then the problem is changed to a linear programming model considering to the possible relationships in QFD. The proposed model is used as a case study for construction industry. After running the model, the percentage of optimal performance for each of the technical production requirements is defined.

Keywords: ***Delphi Fuzzy, Fuzzy linear Programming, QFD.***

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Product Pricing Model in Industrial Clusters Using Game Theory Approach (Case Study: Stone Cluster in Tehran)

Fatemeh Mojibian [1], Ameneh Khadivar [2]

Abstract: In today's competitive world, maintaining competitive power of industries is the requirement of remaining in the competition. In the case of small industries, it also needs to think about strategies of making the industries more competitive in order to survive and have successful activity in competition. In many countries, one of the methods that have gained successful experience in increasing competitive power of SMEs is clustering these firms in a frame of "industrial clusters". Considering the importance of industrial clusters' role in regional economic development programs, providing the solutions of improving the performance of the clusters was always a concern for researchers and specialists of this field. In this study, the process of product pricing as one of the most important factors which affects the profitability of industrial clusters is discussed by game theory approach. The proposed model focuses on the structural differences between supply chains and industrial clusters where the concept of Stackelberg game and believe programming model is used to determine the price of cluster's products. In order to test the validity of the proposed model, the stone cluster data of Tehran are collected and using MATLAB software they are implemented in propose pricing game. Then, the results of the Stackelberg game between leader and cluster's Stakeholders is been analysed.

Keywords: ***Bilevel Programming, Game Theory, Industrial Cluster, Pricing, Stackelberg Game.***

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Dynamic Modelling of Labor Productivity in Mining (Case Study: Chadormaluo Mining and Industry Complex)

Zirar Mahmoodi [1], Ahmad Reza Sayadi [2], Ali Rajabzadeh Ghatari [3]

Abstract: In despite of all progress in technology in mining industry, still labor is one of the key factors in mining operation. This paper presents a system dynamics approach to evaluate the mining labor productivity. Therefore, after the identification of main effective variables, two quantitative and qualitative models were built. The qualitative model illustrates the complex interrelated structure of effective variables in 14 causal and feedback loops. The quantitative model is based on mathematical relationship between variables. Finally, the model was implemented in Chadormaluo mining complex as one of the main producers of iron ore and concentrate in Iran. Simulation of labor productivity shows that 50% decrease in skill and motivation will result 10% and 13% decline in labor productivity, respectively. This model helps managers to evaluate the influence of effective factors on labor productivity and to have appropriate decision making.

Keywords: ***Labor Productivity, Mine, System Dynamics.***

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Developing the Green Supply Chain Management Model of Yang in Cinere Company

Hashem Moazzez [1], Javad Azizi [2]

Abstract: Organizations in order to capture sustainability and competitive advantage need to pay attention to environmental issues throughout their supply chain. By decreasing costs, improving image and being protected against environmental laws it can lead to organizational competitive advantage. Current research has been done investigating the relationship between green supply chain and capturing copetitive advantage in small and medium enterprises (SMEs) in cinere company. In its first phase, after investigating the relationships between green supply chain and capturing copetitive advantage, the Model of Yang et al. (2013) was selected and developed in aspect of internal green practices. The result showed significant corelation between these two. In second phase, using a combined method of DEMATEL and ANP the priority of green supply chain practices was investigated. As a result, among practices, internal green practices and among indicators, organizational culture possessed the highest priority and importance.

Keywords: ***Competitive Advantage, External Green Collaboration, External Green Practices, Green Performance, Internal Green Practices.***

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