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SAĞLIKTA METİN MADENCİLİĞİ: TEORİ VE UYGULAMA

DR. SEMA DÖKME YAĞAR
DOÇ. DR. ÇAĞDAŞ ERKAN AKYÜREK
# Probabilistic Inventory Methods in Health Institutions for Beginners

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## Article Info

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## Abstract

All organizations use some form of inventory planning and control system. In the field of inventory methods, besides many simple methods, there are also many mathematical models to be used for solving complex problems. Probabilistic inventory methods are needed in cases where the demand for a good changes over time and this is not known precisely, and the lead time cannot be determined exactly. It is desired that this study provides simple and understandable information that will serve as a guide to those who have just started on the subject of probabilistic inventories methods in health institutions. In the fixed-period (P) system, inventories are ordered at the end of a certain period. In fixed order quantity (Q) systems, the same fixed quantity is added to the inventories each time an order is placed for each item. Apart from these, there are also three different probabilistic inventories models to be used when demand is variable and lead time is fixed; lead time is variable and demand is constant; both demand and lead time are variable. Another method, ABC analysis, is based on the principle of classifying stocks according to their importance. The degree of importance of inventories is determined on the basis of the amount of material used and its price. In health institutions, it is possible to ensure that the service delivery is not interrupted and that when the material needs arise, it can be done in the desired amount, at the desired time, with high quality and economically, thanks to the correct inventory management. It is recommended that the health managers benefit from these methods that will help them in their decision-making processes.
SAĞLIKTA METİN MADENCİLİĞİ: TEORİ VE UYGULAMA

DR. SEMA DÖKME YAĞAR
DOÇ. DR. ÇAĞDAŞ ERKAN AKYÜREK
# Artificial Neural Networks for Beginners

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How the human brain works has been an interesting subject throughout history, and various studies have been carried out by scientists. Thanks to the technological developments experienced, applications that can act like the human brain and offer the opportunity to model have started to come to the fore. Artificial neural networks aim to create new information like the human brain does by imitating biological brain functions in the learning process of humans and to automatically perform some humanoid abilities. Inspired by biological neural networks, artificial neural networks are computing systems with a large number of interconnections and simple processors. Artificial neural networks are seen as an alternative to human expertise and knowledge. Artificial neural networks are modeled following the brain closely, and so much of the terminology was inspired by neuroscience. In this article, a traditional review was made in order to provide general information about artificial neural networks.
SAĞLIKTA METİN MADENCİLİĞİ: TEORİ VE UYGULAMA

DR. SEMA DÖKME YAĞAR
DOÇ. DR. ÇAĞDAŞ ERKAN AKYÜREK
# Game Theory for Beginners

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## Abstract

Game Theory, which centers on strategic behavior, tries to explain the interaction between decision makers using mathematical models. The numerical modeling of each benefit return to be obtained in the interaction has made and continues to make high-value contributions to various fields. The aim of this study is to explain Game Theory in the light of the simplicity principle of science and to encourage the use of the theory by providing examples of game models in the field of healthcare. In this direction, comprehensive and strategic games were introduced in general terms, and some of the applications of Game Theory ranging from medical education to ethics, from examination services provided in primary care to mental health and surgical operations were presented. In addition, the obstacles that limit the application success of game models are mentioned. The result of this study supports the idea that, due to the nature of medical interaction, game models cannot always offer precise numerical explanations. However, the contributions of Game Theory in the field of health care are too great to ignore.
SAĞLIKTA METİN MADENCİLİĞİ: TEORİ VE UYGULAMA

DR. SEMA DÖKME YAĞAR
DOÇ. DR. ÇAĞDAŞ ERKAN AKYÜREK
Multi-Criteria Decision-Making Methods in the Health Sector Literature Review

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ABSTRACT

In the field of healthcare, the inclination towards decision-making processes, both at the individual and organizational levels, has gained increased importance due to the growing uncertainties. Particularly in the healthcare sector, where decisions made by decision-makers can have highly sensitive consequences and where research efforts are paramount, the use of multi-criteria decision-making methods has become significantly relevant. From the perspective of evidence-based approaches, these methods have become pivotal in today's context. In this context, in line with the information obtained from the literature using the traditional compilation method, frequently used in the field of health; Promethee, Electre I-III, UTA, AHP, FlowSort, Elecre-Tri, Utadıs and AHPSort methods are discussed. Within this scope, the methods frequently utilized in healthcare, based on information extracted from the literature using a traditional review methodology, are discussed. The findings indicate that multi-criteria decision-making methods are generally categorized into selection, classification, and ranking, with their primary focus being to provide decision support systems for decision-makers. Healthcare managers should not overlook the fact that multi-criteria decision-making methods serve as valuable tools in their decision-making processes. When employed in decision-making, these methods can contribute significantly to the attainment of rational decisions by systematically, analytically, and objectively considering complex and diverse factors in the decision-making process.
Access to Health Services and Health Status: Comparison of Germany, United States of America, UK and Turkey

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Health status, which is a subjective indicator of health condition, is a variable that we aim to improve both individually and socially. One of the most basic determinants of this indicator, which is frequently used in interregional comparisons, is health services. Country governments affect access to health services by choosing different health system organizations, and access to health services affects health status. In this study, it was aimed to compare the health status according to access to health services in Germany, USA, England and Turkey, which have different health systems. Access to health services and health status indicators used in the study were examined within the framework of the variables discussed in the OECD’s Health at a Glance report. A total of 16 variables, eight separate variables, were used for both cases. The data of the research were obtained from the OECD database. It has been accepted as an indicator of success that countries have the best health status with their existing resources. In this study, where the comparison was made using the MOORA method in the Microsoft Office Excel program, the success rankings of the countries were found to be Germany, England, USA and Turkey. Considering the changes discussed, it is recommended that all countries, especially the countries discussed in this study, benefit from the experiences of successful countries.