FORM 2

THE PATENTS ACT 1970

39 OF 1970

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THE PATENT RULES 2003

COMPLETE SPECIFICATION

(SEE SECTIONS 10 & RULE 13)

1. **TITLE OF THE INVENTION**

Data Envelopment Analysis-based approach for evaluating the employment quality of Finance graduates

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2. PREAMBLE TO THE DESCRIPTION

COMPLETE SPECIFICATION

The following specification particularly describes the invention and the manner in which

it is to be performed

Data Envelopment Analysis-based approach for evaluating the employment quality of Finance graduates

Abstract:

A data envelopment analysis–based employment quality evaluation model of finance majors is proposed and designed in order to address the issue of low evaluation accuracy that is present in the conventional model for evaluating the quality of a candidate's potential for employment in the finance industry. The C2R model in data envelopment analysis is used to construct the system of the employment quality evaluation model for finance graduates. These principles include systemicity, subjective and objective combination, conciseness, and independence. Using this model, one can evaluate the employment quality of finance graduates. The real weight coefficient of the employment quality evaluation system for finance graduates is determined by constructing the judgement matrix of each index using the pairwise comparison matrix judgement technique. This matrix represents the judgments made on each index. It is possible to develop the employment quality evaluation model for finance majors once the corresponding weights of all indicators in the employment quality evaluation model system of finance majors have been obtained. The experimental comparison demonstrates that the model has a high degree of application and a better degree of evaluation accuracy than the other model.

Descriptions:

The higher education and development industry is under intense pressure from the competitive market, and as a result, it bears a significant obligation to consistently improve the effectiveness of its operations. It should come as no surprise that productivity in higher education has a multidimensional quality, seeing as how it connects to the production and distribution of knowledge via academic instruction and scientific research. As a result, the assessment of the performance of teachers is a topic that presents a greater level of difficulty given the inclusion of many factors as goals. One of the measuring tools that is used to determine whether or not teachers are doing a good job is whether or not their students are happy with their classes. The professional and practical expertise of the professors as well as their academic assessment is an important component that plays a role in determining the level of contentment that students, who are the end consumers of higher education services, feel they have received from the educational process. As a result, students at many institutions of higher education are given the opportunity to participate in some form of evaluation in which they rate the methodology of instruction as well as the qualifications of the instructors for each subject. An approach to measuring the relative efficiency of decision-making units (DMUs) that are characterised by various inputs and outputs that cannot be compared to one another is known as data envelopment analysis, or DEA for short. The outcomes are highly dependent on the criteria that were applied throughout the analysis. Because of this, the process of selecting criteria is one of the most crucial stages of the DEA. This is especially true considering that the amount of labour required for evaluation significantly grows along with the amount of

data that is accessible. In a number of different studies, the researchers simply take the inputs and outputs into account as "givens" before moving on to discuss the DEA approach. On the other hand, the Analytic Hierarchy Process (AHP) and Conjoint Analysis are both examples of multi-criteria decision-making methods (MCDM), which have the ability to provide a priori information regarding the significance of inputs and outputs. Although the theoretical underpinnings and methodological frameworks of conjoint analysis and AHP methodologies are distinct from one another, the two approaches can be utilised separately and in comparison in studies that are either comparable or even the same. Both approaches can be used to measure the preferences of respondents and to determine the relative importance of traits; however, the selection of the approach that is most suitable is contingent on the specific problem at hand as well as the particulars of the research being conducted. There are a number of different ways in which AHP models can be integrated with DEA models. According to the research that has been conducted, the AHP method is utilised in situations in which it is necessary to complete ranking in a two-stage process, estimate missing data, impose weight restrictions, reduce the number of input or output criteria, and convert qualitative data into quantitative form. Salhieh and Al-work Harris's is the only one that has been published up to this point that has proposed the idea of merging the DEA approach and the conjoint analysis. They proposed combining these two approaches as a way to pick new products available on the market. The purpose of this study is to provide a novel method for determining the overall efficacy of teachers, which consists of calculating the weighted total of subjective and objective efficiency scores. The DEA, the AHP, and conjoint analysis are all multi-criteria decision-making procedures, and this methodology incorporates all three of them. The AHP makes it possible to

construct a hierarchical structure, which can then be utilised to build an issue involving the progression of overall efficiency. In addition, the AHP is used to calculate the weights of each of the efficiency metrics that are found at the highest level of the hierarchy. The conjoint analysis and the DEA are the two methods that are utilised in the process of evaluating the subjectivity of efficiency. The purpose of the conjoint analysis is to determine, on the basis of the preferences of the stakeholders, the relative relevance of each criterion. This information is then utilised as guides for the selection of the DEA criteria. Another advantage of using conjoint preferences is that they can be used to establish a foundation for the weight limitations that are imposed by DEA models. The application of conventional DEA models is used to do the evaluations of the objective teaching and research efficiency scores. The strategy that has been proposed allows for the scoring and ranking of relatively efficient and inefficient teachers, as well as strong and weak components of their research and teaching activity. The following outline constitutes the paper's structure: A literature review on the topic of criterion (input and output) selection comes after a description of the fundamentals of DEA and the procedure of implementation in Section 2. Conjoint analysis and the AHP method are also described in this section. Additionally, a methodology for assessing the importance of the criteria that are taken into consideration is discussed. In the third section, a novel methodological framework for merging conjoint analysis, AHP, and DEA is provided. In Section 4, we present an illustration of the proposed technique as well as the results of tests conducted in the real world. The most important findings and suggestions for further investigation are presented in Section 5. Every organisation strives to deliver the most dependable, helpful, and cost-effective business analysis possible. One of these organisations is DEA, which can assist managers in simplifying

processes and concentrating on the most important aspects of their businesses. The DEA is a useful instrument for assessing and managing operational performances in a wide variety of different environments and contexts. The choice of inputs and outputs is one of the most important processes in the DEA process. This is due to the fact that the DEA provides several indexes of efficiency based on a wide variety of criterion combinations. The DEA efficiency index is a relative measurement that changes depending on the number of DMUs as well as the number and structure of the criteria that are included in the evaluation. When there are multiple factors to consider, calculating the efficiency index of each DMU is a process that demands a greater investment of time and effort. In most cases, the number of criteria is decreased by the use of statistical techniques such as regression and correlation analysis. The use of conjoint analysis to pick more relevant teaching criteria based on student preferences is one of the suggestions made in this research. The importance ratings of the criteria, which were determined based on the preferences of the stakeholders, served as the basis for the selection of the most appropriate set of criteria to be employed in the DEA efficiency assessment phase. The application of the framework to the evaluation of instructors from the perspective of the students demonstrates that (a) not all factors are of equal importance to the stakeholders, and (b) the findings vary depending on the technique that is used and the criteria that are chosen for the evaluation. Conjoint analysis, which is a tool for disclosing the preferences of stakeholders, and data envelopment analysis (DEA), which is a "objective" method for evaluating performance and does not require an a priori definition of weight, are both included in this study for this reason. In addition, DEA makes it possible to incorporate the preferences of stakeholders, either in the form of weight constraints or the selection of adequate criteria. The AHP

technique allows for the decision-making unit (DMU) to be extensively ranked and gives the capability to decompose decision-making problems in a hierarchical fashion.

DRAWINGS:
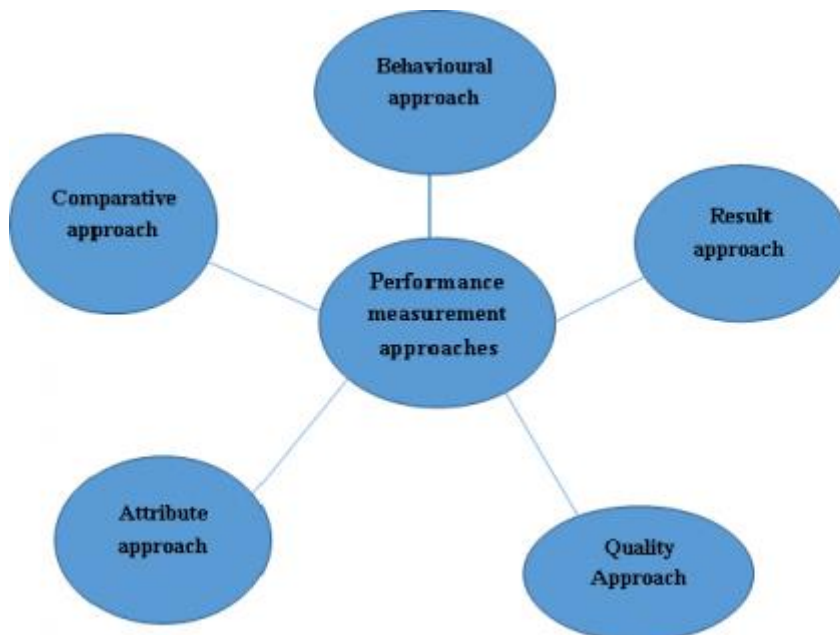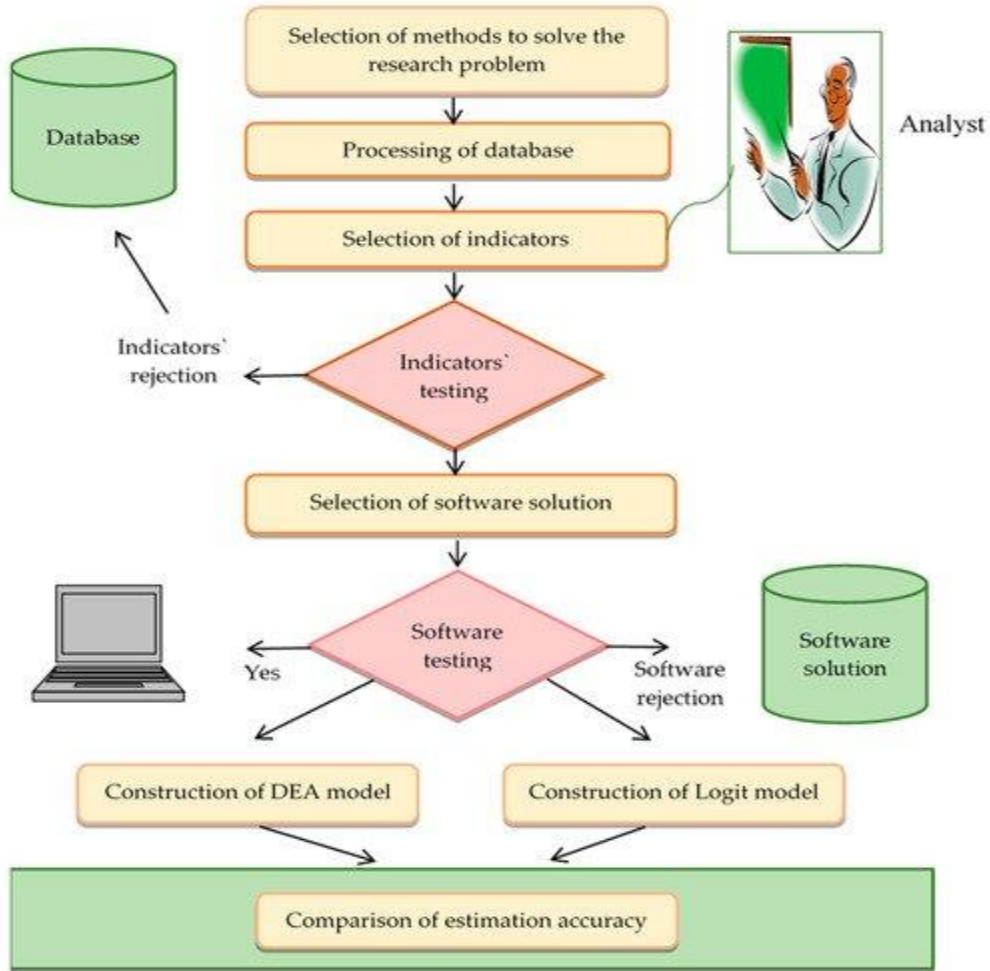
CLAIMS

1. Data Envelopment Analysis-based approach for evaluating the employment quality of Finance graduates a cutting edge technology.

2. Data Envelopment Analysis-based approach for evaluating the employment quality of Finance graduates of claim 1, wherein said that it is a smart approach.

3. Data Envelopment Analysis-based approach for evaluating the employment quality of Finance graduates of claim 1, wherein said the main goal is to investigate the Effects of DEA.

4. Data Envelopment Analysis-based approach for evaluating the employment quality of Finance graduates of claim 1, wherein said that in this paper, we analyzed and discussed various aspects.

5. Data Envelopment Analysis-based approach for evaluating the employment quality of Finance graduates of claim 1, wherein said that in recent years, employment quality become a hot topic in all Sector.

6. Data Envelopment Analysis-based approach for evaluating the employment quality of Finance graduates of claim 1, wherein said that this research looks at all of the important and recent work that has been done so far, as well as its limitations and challenges.