

OPINION

for the acquisition of an educational and scientific degree "Doctor", Doctoral Programme
Economics and Management (Industry)
D. A. Tsenov Academy of Economics – Svishtov

Reviewer: Assoc. Prof. Yordan Hristov Ivanov

Author of the doctoral thesis: Emre Zafer Guney

Title of the doctoral thesis: ALGORITHMS TO FORECAST WORKFORCE

Grounds: No.404/30.06.2021 of the Rector of D. A. Tsenov Academy of Economics – Svishtov

I. General presentation of the dissertation:

The dissertation has a total volume of 233 pages and is structurally formed in a list of tables (3 pages), a list of figures (1 page), a list of abbreviations (3 pages), an introduction (5 pages), four chapters (171 pages), conclusion (4 pages), list of references, including a total of 118 titles and appendices.

II. Assessment of the form and content of the dissertation

The rapid development of information technology in recent decades has changed the way we do business in many sectors of the economy, including the food trade. Conditions have been created to increase the speed of information exchange in relation to all basic functions and business processes in business organizations. All this allows us to look for opportunities to increase efficiency and find ways to reduce costs. The author of the dissertation presents the three key invoices for the food trade sector, namely - labor costs, rental costs and transport costs. Of course, the influence of the labor force stands out, not only as a cost, but also as an important asset for the companies in the analyzed sector. An asset, especially important for the success and competitiveness of the business.

Problems related to the effective configuration of human resources caused by the cost of funds and time are at the heart of the search for appropriate tools to minimize them. Achieving higher efficiency in human resource management brings with it a number of competitive advantages. They are caused primarily by the selection of suitable employees, achieving high motivation, and hence empathy with the goals of the organization.

The style of presenting the material in the dissertation is at a very good scientific level, the presentation is clear, logical and consistent. The author is well acquainted with the literature on the subject, which allows him to present his scientific positions in an accessible and reasoned way. The structure of the development does not follow the classical model, but the good judgment of the author allows the defined research tasks to be realized by the doctoral student within a neatly and correctly arranged presentation, structured in four chapters. The methodological tools used are suitable for the purposes of the research and adequate in terms of proving the main research thesis. The abstract, in a synthesized form, fully and accurately

reflects the content, results obtained and contributions to the dissertation. The main points of the dissertation are published in 3 separate articles and 1 scientific report.

III. Contributions of the dissertation work.

The report on the contributions presented in the abstract correctly and realistically reflects the main achievements of the doctoral student in the overall study, which gives me grounds to confirm the indicated contributions. I believe that they enrich the existing theoretical and methodological knowledge and practical and applied formulations regarding the effective management of human resources. I believe that the contribution moments can be refined and shortened to the following:

1. Based on the studied literature sources and models applied in the banking, manufacturing, health and retail sectors, an in-depth study of the empirical factual picture in the retail sector (at the level of: international market, national market and individual company – following the example of Migros, Turkey) has been made. Unused fields for implementing software solutions and achieving time efficiency by forecasting the workforce and optimizing the work schedules of the company's employees have been identified.
2. By applying a mathematical approach to interrelated methodologies for monitoring and analyzing data on key performance indicators on labor requirements and algorithms for planning the organization of work of a company, a methodology for research, development and subsequent improvement of an algorithm for forecasting the requirements for the workforce at the level of a company department (following the example of Migros, Turkey) has been constructed, with targets: improving the customer experience, improving strategic decisions, improving operational results, reducing costs, improving demand forecasting, successful forecasting of trends, etc. The data analysis is aimed at identifying opportunities to achieve a higher degree of customer satisfaction through efficient and better quality of service.
3. Based on the author's methodology for data research and analysis, development and subsequent improvement of an algorithm for forecasting the requirements for the workforce at the company level (following the example of Migros, Turkey), an algorithm for workforce planning at the department level has been developed and tested as an organizational and management tool for searching and identifying opportunities for achieving time efficiency on the basis of a key performance indicator (SER – Scheduling Efficiency Rate).
4. Through the development, testing and implementation of the workforce forecasting algorithm to optimize Migros work schedules, positive effects have been achieved, related to increasing the workforce potential, saving labour and significantly reducing the company's costs.

IV. Questions on the dissertation.

Based on the author's suggestions, can it be deduced by what percentage the efficiency of the company applying the model would increase?

V. Summarized assessment of the dissertation and conclusion

The dissertation of Emre Gunay is a large-scale study of a significant for business practice and at the same time current scientific and applied problem. The research tasks set in it have been fulfilled, its main goal has been achieved, and the research thesis has been proven. The scientific and applied contributions contained in the dissertation enrich the existing knowledge in the field of professional training in human resources management, helping the line managers in the trade companies to increase the efficiency of the use of human resources

I allow myself to propose to the honorable Scientific Jury to **vote positively and to award Emre Guney an educational and scientific degree "Doctor"** in the scientific field 3.8. Economics; Doctoral Programme Economics and Management (Industry).

15.08.2021
Varna

Review author:
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