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Extended Abstract of Bachelor Thesis

Using the AHP for choosing an apartment for temporary residence in Prague.

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Using the AHP for choosing an apartment for temporary residence in Prague.

Abstract

This work is devoted to the study of the possibility and feasibility of using one of the methods of multi-criteria analysis in choosing the best option for rented housing in Prague.

The theoretical part describes the basic concepts of multi-criterial decision-making analysis and the AHP method, as one of the widely used methods in practice when conducting multi-criteria analysis in various fields.

In practical terms, an analysis of the rental housing market in Prague is carried out. Based on the collected data conducted online by a survey of foreign and non-resident students in need of rented housing, relevant criteria were determined, and the necessary calculations were made. Based on studies and the results obtained, it is concluded that it is possible to use the AHP method when choosing rented housing.

Keywords: Analytical Hierarchy Process (AHP), criteria, rental market.

Využití AHP pro výběr bytu k přechodnému pobytu v Praze.

Abstrakt

Tato práce je věnována studiu možnosti a proveditelnosti využití jedné z metod multikriteriální analýzy při výběru nejlepší možnosti nájemního bydlení v Praze.

Teoretická část popisuje základní pojmy z multi-kriteriální rozhodování analýza a metoda AHP, jako jeden z široce používaných metod v praxi při provádění multikriteriální analýzy v různých oblastech.

Z praktického hlediska se provádí analýza trhu nájemního bydlení v Praze. Na základě shromážděných údajů provedených online průzkumem zahraničních a nerezidentních studentů, kteří potřebují pronajaté bydlení, byla stanovena příslušná kritéria a byly provedeny nezbytné výpočty. Na základě studií a získaných výsledků se dospělo k závěru, že při výběru pronajatého bydlení je možné použít metodu AHP.

Klíčová slova: Analytický hierarchický proces (AHP), kritéria, nájemní trh.

Objectives

Primary goal.

To make a choice of an apartment in Prague 6 using AHP method and in the same time determine the possibility and feasibility of using the AHP method to help students to choose a rent an apartment.

Partial goals

- To study the AHP method.
- To examine the advantages and disadvantages of the AHP method.
- To build a hierarchical structure of the selected task.
- To collect and process initial data including an online survey of University students to determine the relevant criteria and their weights.
- To carry out calculations to find a compromise solution.
- To make a conclusion about the possibility of using the AHP method when choosing an apartment.

Methodology

The paper consists of two parts: theoretical and practical. The theoretical part is based on the study and analysis of data taken from literary sources. This part focuses on describing the AHP method as one of the main methods widely used in multi-criteria analysis.

At the beginning of the practical part, a small analysis of the rental housing market in Prague is carried out. The main part of the practical work is devoted to the collection and analysis of the necessary information from real sources, the selection of relevant criteria with the calculation of their weights, their consistency and further multi-criteria analysis using the AHP method.

Conclusion

Based on the above example, we can conclude that the use of the Analytic Hierarchy Process (AHP) method allows us to include in the hierarchy all the main details on the problem being analyzed, to use a fairly simple mathematical apparatus to analyze the problem, to carry out this analysis taking into account complex, diverse structural and functional connections.

The considered method allows both one student and a group of students different in their judgments to interact on a problem of interest to them, in particular, on the problem of choosing a rental apartment for living in Prague, to modify their judgments, to integrate individual judgments regarding the presented alternatives and, ultimately, to seek optimal solutions to the problem under consideration. To speed up mathematical calculations in the selection process, various computer decision support systems (DSS) developed to apply the AHP method can be used. In addition, prior to making the calculations, you can use the option to simplify the hierarchical structure by visually identifying unimportant criteria and worst-case alternatives.

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