

Comparison of the Bias and Weighting of Variables in Neural Networks (ANN) for the Selection of the Type of Housing in Spain and Mexico



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Abstract This chapter compares users' housing characteristics in Spain and Mexico through a multilayer neural network trained for selecting the right type of housing by new users. This research aims to analyze the biases and synaptic weights of the variables that are analyzed. Our results show that data's bias and variables' weighting do not influence the neural network's precision for housing classification. Thus, the housing classification is independent of the biases and captures the housing users' preferences in each country. The results' robustness is done by comparing different neural network feedback architectures to improve accuracy through different training.

Keywords Adequate Housing · Cultural Adaptation · Decision Making · ANN

1 Introduction

The Office of the High Commissioner for Human Rights [1] establishes that “adequate housing” must meet the criteria of (1) legal security of tenure irrespective of the type of tenure; (2) availability of services, (3) affordability; (4) habitability; (5) accessibility (including access to land); (6) location; and (7) cultural adequacy. Thus, as we can see, “adequate housing” is different from “affordable housing.” However, the housing sector faces the challenge of generating adequate housing

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