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This study considers the relevant practical problem of predicting the probability of business process errors. The object of this work is the process of predicting the probability of business process errors. The subject of this work is the algorithmic support and software for predicting the probability of business process errors. The aim of the work is to improve the quality of business process models by solving the problem of error probability prediction. The proposed solution (Fig. 1) is based on Business Intelligence (BI) techniques for business process model analysis [1].



Fig. 1. – The software solution developed using Microsoft Power BI tool

To test the performance of the developed software for predicting the probability of business process errors, we used business process model data from the BPMAI (Business Process Management Academic Initiative) project [2] to build the logistic regression classifier based on process model size and connectivity complexity.

The obtained results allow to conclude that it is possible to predict the error probability of business processes by analyzing the complexity of BPMN (Business Process Model and Notation) models – complex models are incomprehensible and inefficient to use and, therefore, can lead to errors in the processes themselves. Thus, the developed solution can be used to analyze the complexity of BPMN 2.0 models and, thus, identify error-prone business process scenarios.

References:

1. Kopp A., Orlovskiy D. Intelligent Support of the Business Process Model Analysis and Improvement Method. *CCIS Series*. 2020. Vol. 1175. P. 111–135.
2. Model Collection of the Business Process Management Academic Initiative // URL: <https://doi.org/10.5281/zenodo.3758705>