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ABSTRACT:

With increasing access to data, companies today own and process a vast amount of data, which they don't always know how to use effectively. In this respect, artificial intelligence is becoming a key answer. That's why this article, drawing on existing literature, draws up a review of the various AIs used to automate business processes. It focuses on 21 studies based on research in the Scopus and Web of Science databases. They highlight techniques such as: K-means, Bayesian networks, and swarm intelligence with the aim of improving decision-making processes concerning the design, growth and restructuring of companies.

Problematic of the article: Which AI-based methods, in the literature, are used to automatize business processes and support the decision-making processes of companies?

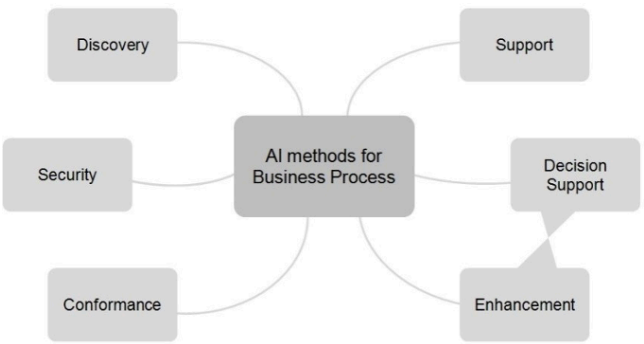
1. Introduction:

Business process management (BPM): is a discipline that involves concepts, methods, and techniques, to design, enact, measure, and configure business processes.

The emergence of information technology around 1950 had a profound influence on BPM. It altered corporate structures, which began to rely on information systems. Today, the transition to a digital society, with unlimited access to data, raises new management challenges, as well as contributions and limits for companies.

Artificial intelligence therefore plays a crucial role in optimizing business processes and supporting corporate decision-making. Thanks to machine learning and deep learning, new possibilities are opening up. With this in mind, this article aims to identify AI-based methods for automating business processes and supporting decision-making.

2. Classification of AI-based methods



Category	Functioning	Example
Discovery	Create business process models from event logs	Business process optimization using bio-inspired methods based on ants
Security	Process to guarantee anonymization and protection of customer data	Information leakage analysis method
Conformance	Comparison of existing process models with events to check that rules are being followed	Use of graphs to reconstruct missing process tracks
Support	Data pre-processing to improve quality before use	Filtering of infrequent behaviors in event logs
Decision support	Tools and techniques to speed up decision-making	Process assembly to find similarities and help design new processes
Enhancement	Optimizing resources and adjusting processes to improve efficiency	Bio-inspired methods for optimizing resource allocation in processes

3. Discussions

- **Article selection process:** The search began with 387 articles, but only 21 articles (around 5%) were related to the topic. This shows that it is crucial to define the search criteria in order to obtain more relevant results
- **Focus areas:** The majority of keywords focused on "artificial intelligence" and "business process", which shows that the review succeeded in highlighting relevant articles at the intersection of AI and BPM.
- **Methods used:** According to the systematic literature review, the idea was to look at artificial intelligence methods, however some of the articles selected used mainly computer science or math-related methods. This shows that future research could benefit from the addition of more artificial intelligence methods to examine how businesses operate.

4. Conclusions

To conclude, the article shows that the use of intelligent techniques is very important for improving the way businesses operate, especially now that we have a lot of data (big data) and artificial intelligence (AI) can play a key role. She also talks about the importance of researchers, technology developers and corporate decision-makers understanding these techniques. It stresses the need to clearly define certain rules and ideas so that everyone uses them in the same way. The conclusion also shows that the study didn't use enough academic sources of information, and that sometimes the terms weren't used properly. Finally, it suggests that future research should focus on creating a system that helps make decisions by considering several factors at once to automate tasks in companies.