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«Methodologies For Demand Forecasting in supply chain: A Systematic Literature Review And Bibliographic Analysis»

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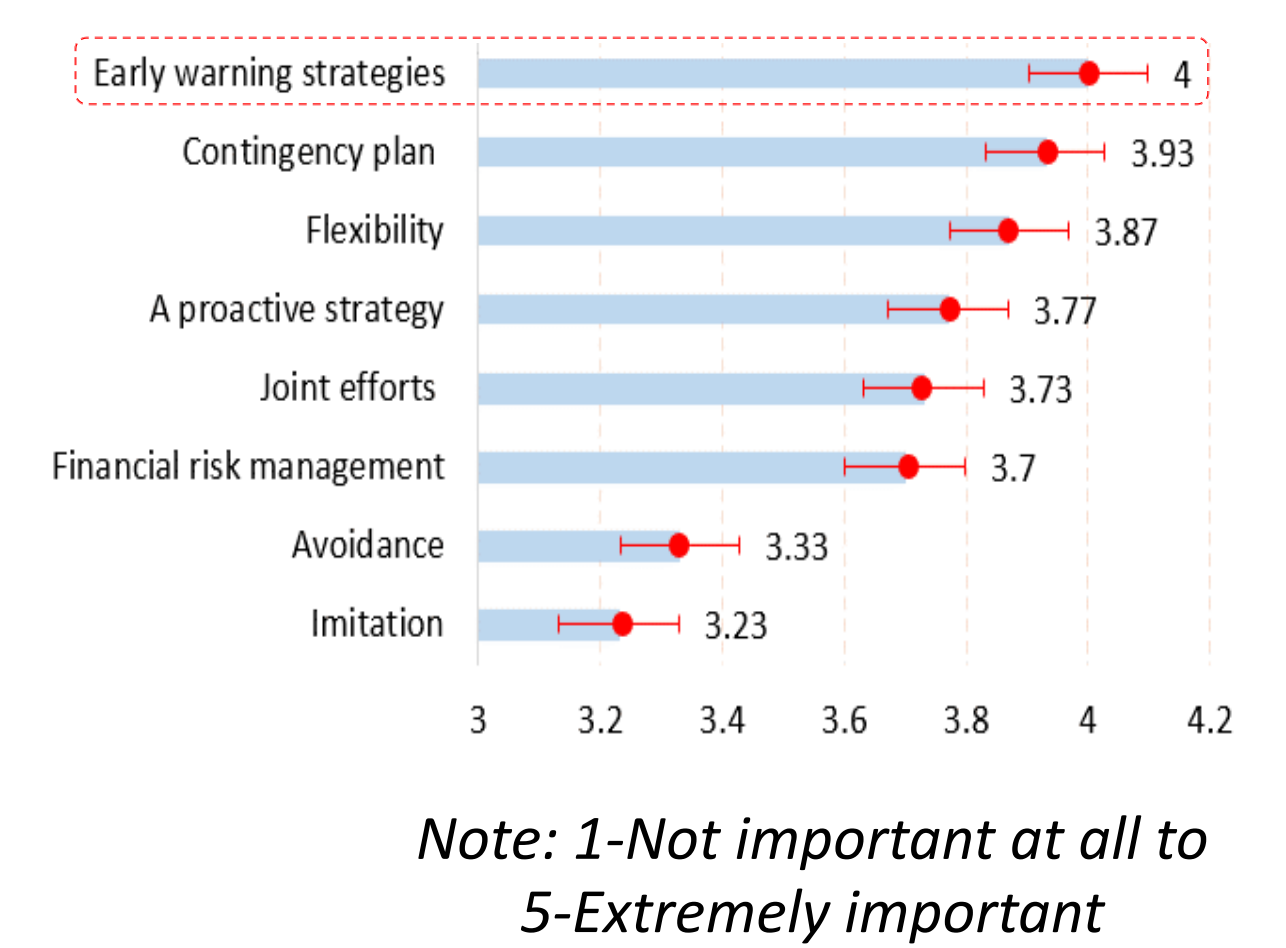
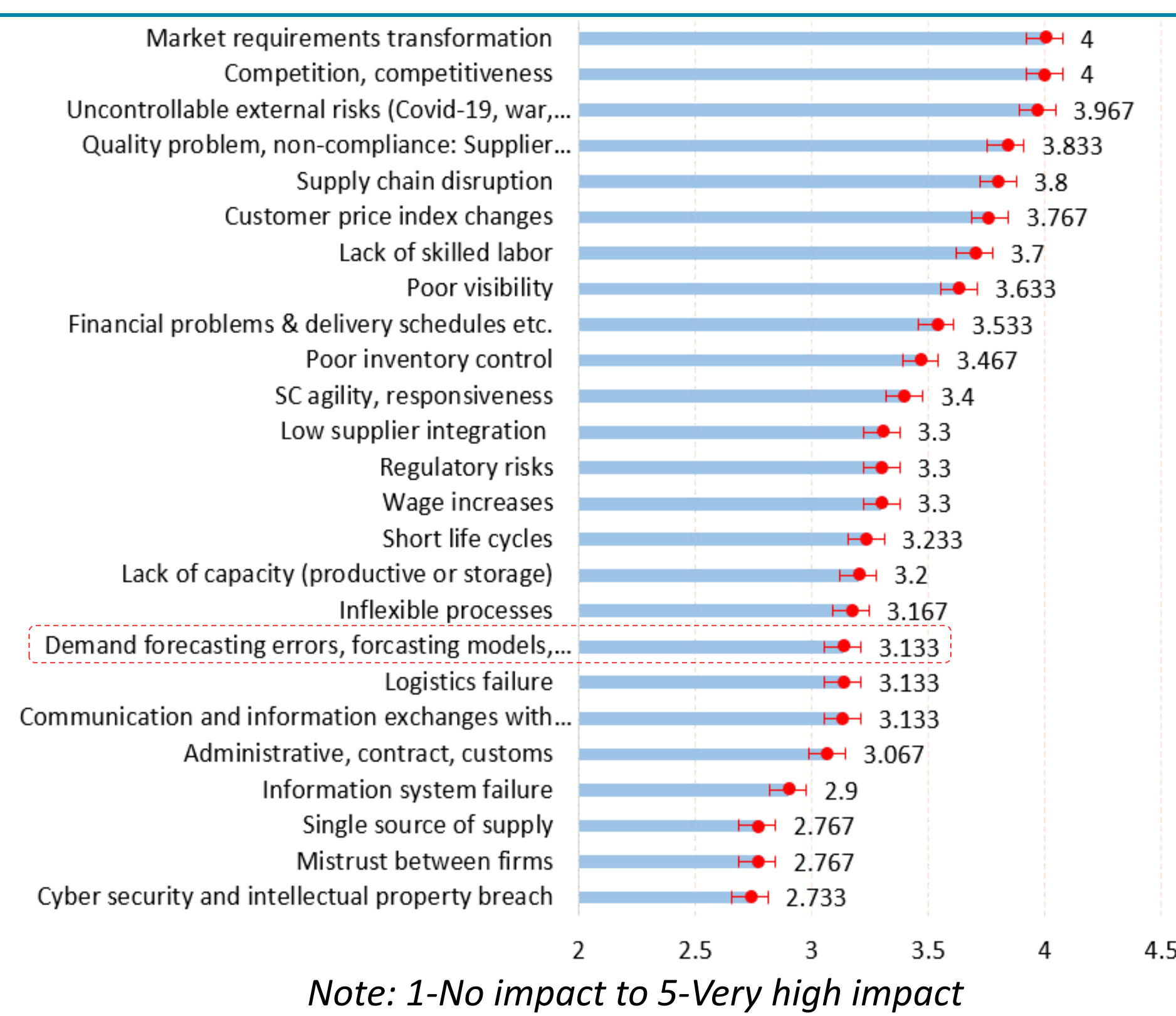
Abdelhakim ARTIBA - LAMIH, Université Polytechnique Hauts-de-France, Valenciennes, France

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Context & Problem

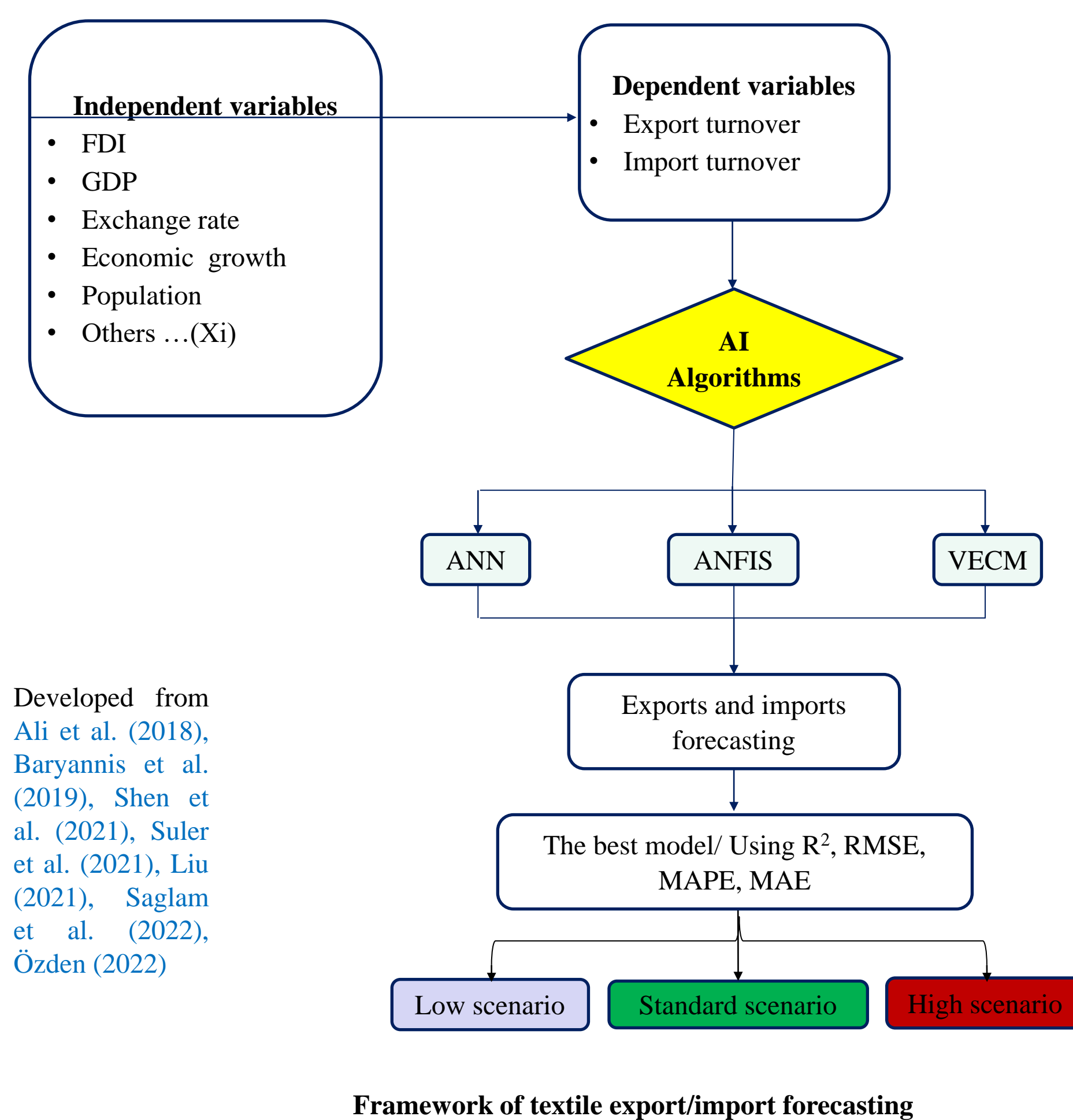
- ❖ Promptly identifying risks in an ever-changing economy is posing a huge challenge for an enterprise within the SC.
- ❖ Enterprises need to understand how the market is likely to change in the future in order to make informed decisions.
- ❖ There are so many methods for forecasting but AI and ML have been proven to provide more accurate and reliable forecasts.



Note: 1-Not important at all to 5-Extremely important

T. T. Nguyen, A. Bekrar, T. M. Le, A. Artiba, T. Chargui and T. T. Huong Trinh, "New Digital Technologies In Supply Chain Risk Management: Empirical Results Of Vietnam's Textile Industry" 2023 IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD), Rabat, Morocco, 2023, pp. 1-8, doi: 10.1109/ICTMOD59086.2023.10438148.

Targeted Solution



Developed from Ali et al. (2018), Baryannis et al. (2019), Shen et al. (2021), Suler et al. (2021), Liu (2021), Saglam et al. (2022), Özden (2022)

Framework of textile export/import forecasting

- ❖ ANN has the ability to form a complex non-linear system.
- ❖ No assumption on inputs; self-learning ability

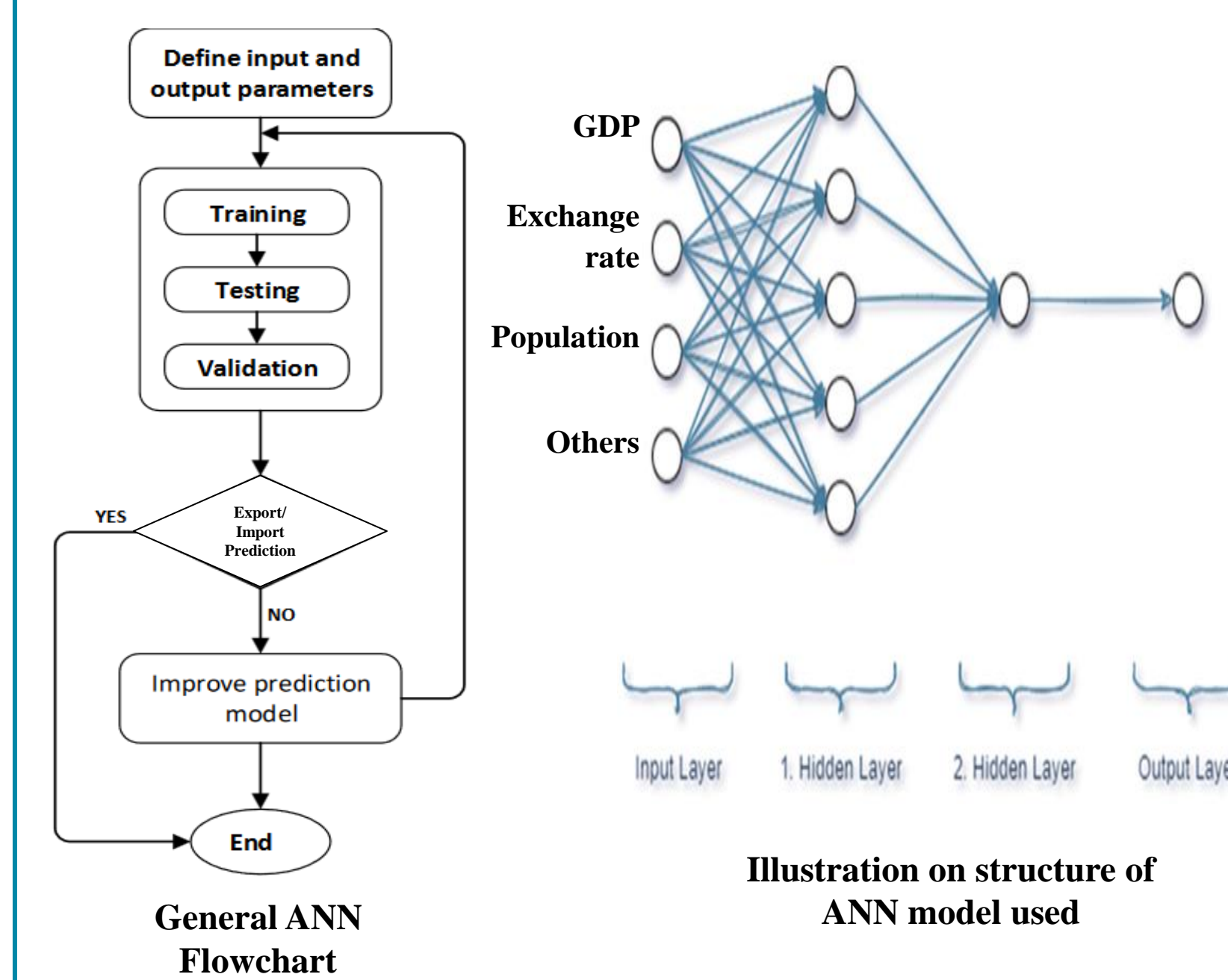
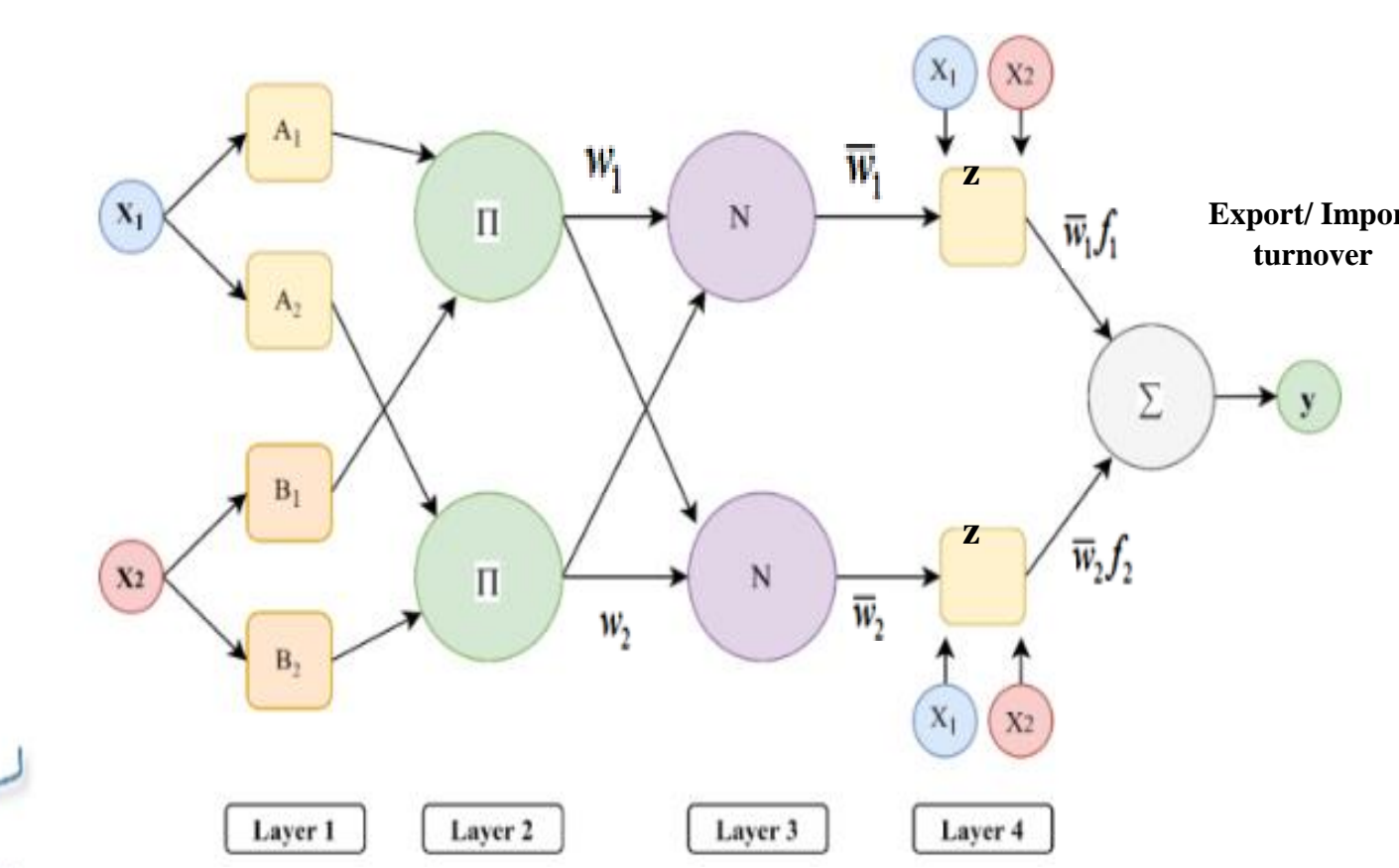


Illustration on structure of ANN model used

- ❖ ANFIS was first used in 1991, is one of the best examples of hybrid models (Özden, E., 2022).
- ❖ ANFIS = ANN + Fuzzy Systems → effective results.
- ❖ Rapid learning capacity, the capability of seizing the nonlinear structure of a process, capability of adaptation.



The case of ANFIS framework with two inputs and one output

Özden, E. (2022). Forecasting of Export Volume Using Artificial Intelligence Based Algorithms. *Bitlis Eren Üniversitesi Fen Bilimleri Dergisi*, 11(2), 715–726. <https://doi.org/10.17798/bitlisfen.1107311>

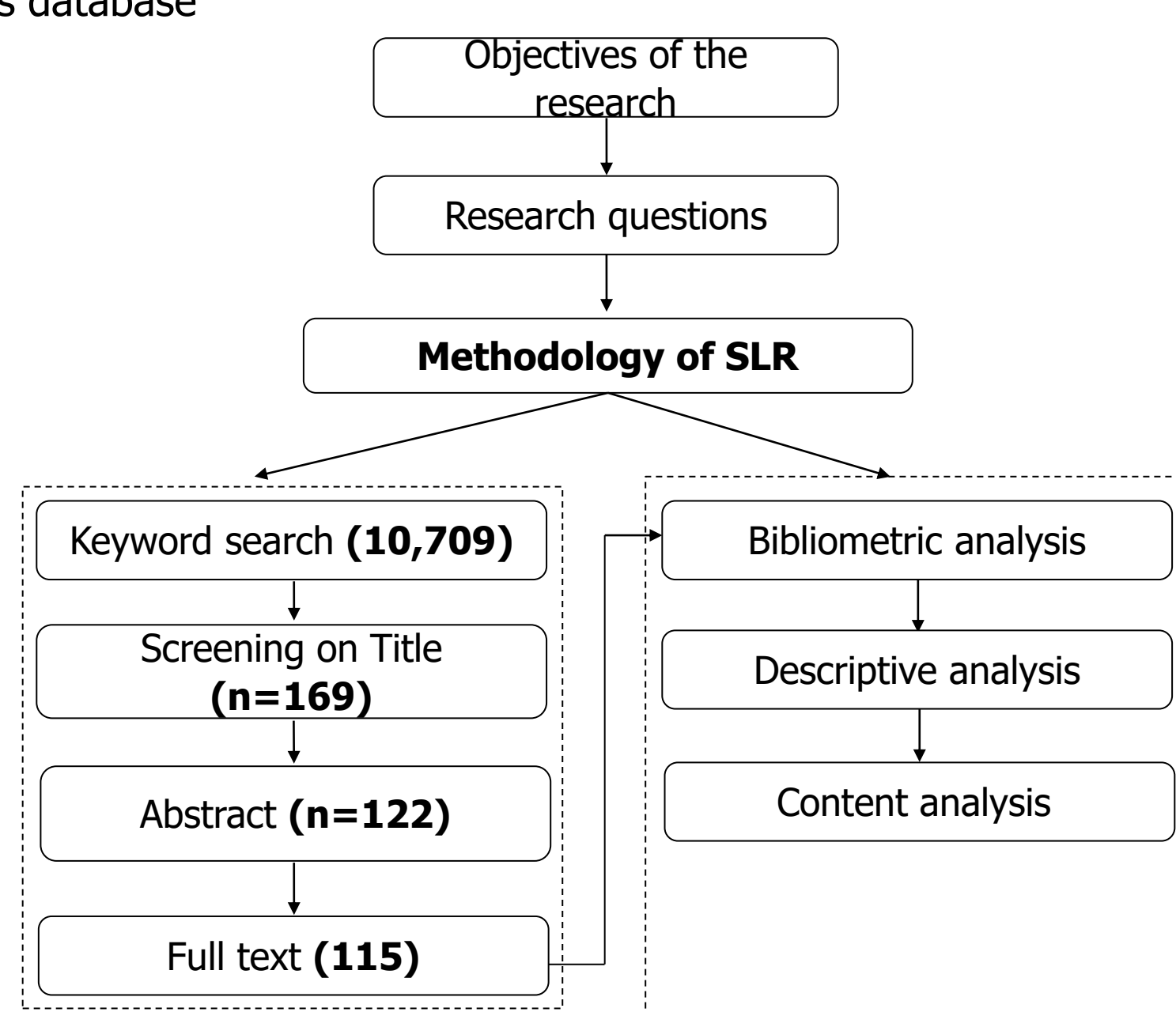
State Of The Art

Search formula:

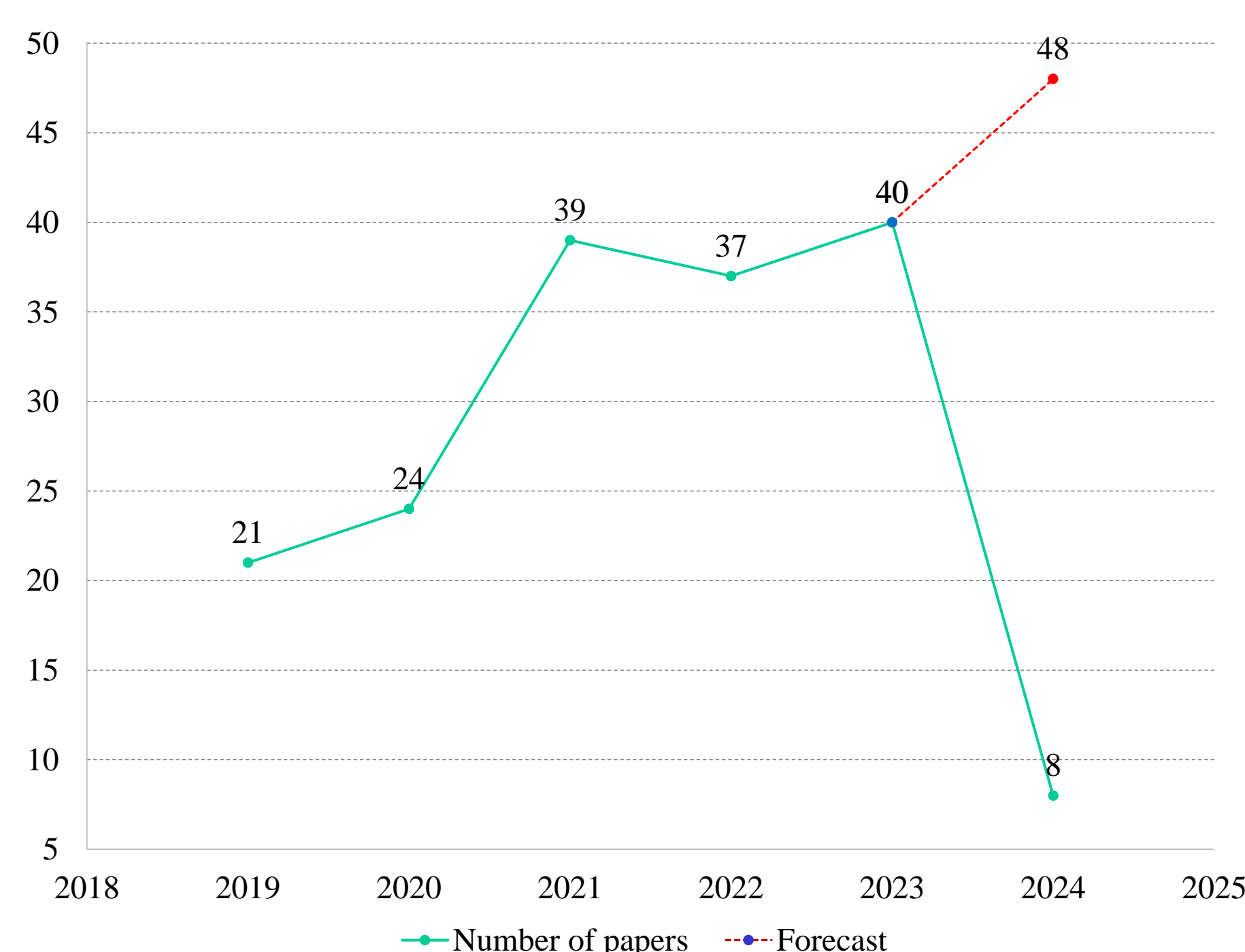
TITLE-ABS-KEY ("import" OR "export" OR "trade" AND "forecast*" OR "predict*")

Period: 2019-2025

Scopus database



Flowchart of SLR based on PRISMA



Note: Until 30/02/2023

