



# Scale Development for Measuring Small and Medium Enterprises' Performance passing through Digital Transformation: A Sustainable Approach

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**Abstract.** Globally, the corporate landscape is changing due to digital transformation (DT). Small and medium-sized businesses (SMEs) make up 70% of all jobs and 99% of all businesses worldwide (especially for women). Furthermore, evidence indicates that SMEs pollute more than bigger businesses. The current study aims to propose and verify the reliability and validity of a scale for measuring SMEs' performance. This scale must simultaneously consider DT. Also, it must consider the economic, social, and environmental aspects of sustainability (TBL). Based on systematic literature reviews, a scale is proposed. SMEs from several industries will be surveyed in April 2023 in Chile. The reliability and validity of the scale will be tested through factor analysis, confirmatory factor analysis, internal coherence level analysis (Cronbach alpha), and constancy level analyses. This is the first sub-study of a two-year research project on the field of SMEs, DT, and TBL. The expected result is a scale that can be used for wider-scope analyses and investigations on the theme worldwide. This study and project represent a contribution to the following six Sustainable Development Goals (SDGs): 1. No Poverty, 5. Gender Equality, 8. Decent Work and Economic Growth, 9. Industry, Innovation, and Infrastructure, 10. Reduced Inequalities, and 12. Responsible Consumption and Production.

**Keywords:** Small and medium-sized enterprises (SMEs); Digitalization; Industry 4.0.

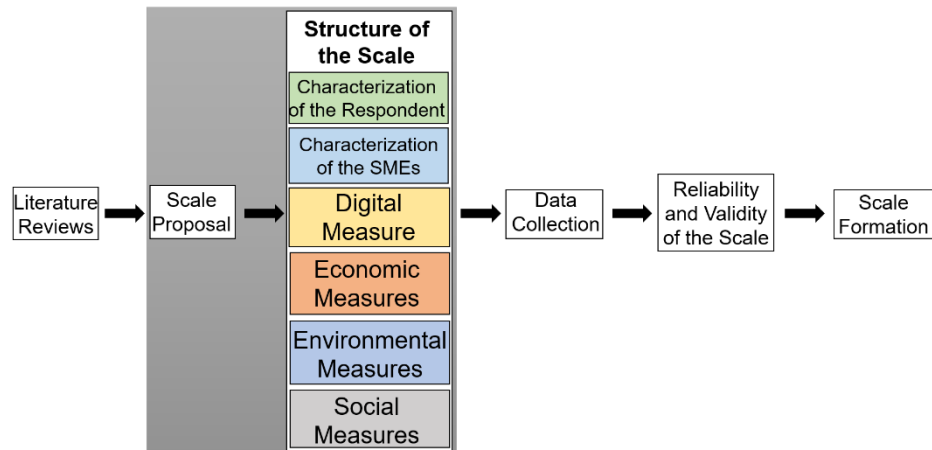
## 1 Introduction and Objective

DT is a global fundamental change process that redefines value chains, provoking positive and negative outcomes. Specifically, the DT impacts SMEs differently from larger enterprises because of their characteristics (e.g., more limited resources, specialization capabilities, and flexibility) [1]. Also, SMEs represent 99% of enterprises and 70% of jobs worldwide [2]. And they pollute more [3]. This study aims to elaborate and validate a scale to survey the performance of SMEs regarding DT and TBL.

## 2 Method

We have already dedicated one year to two systematic literature reviews (SLRs) on the theme [4,5]. The SLRs were used to propose a scale. As shown in Fig. 1, the scale has six aspects: characterization of the respondent (five questions), characterization of the SME (six questions), digital performance (divided into accessibility, technology, internal platforms, external platforms, cybersecurity) (20 statements), economic (seven statements), social (10 statements),

and environmental (five statements). All statements are on a seven-point Likert scale. Data will be collected from Chilean SMEs. Then, the scale will be validated through exploratory factor analysis and confirmatory factor analysis. Fourth, scale reliability will be analyzed through the internal coherence level analysis (Cronbach alpha) and constancy level analysis. Given the results, questions and statements may be removed or maintained in the proposed scale.



**Figure 1** Development and verification of the proposed scale.

### 3 Expected results and Final Remarks

The expected result is a scale that can be used for wider-scope analyses and investigations on the theme. The project's final expected results are helpful for SMEs, policymakers, and researchers.

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