

**The earlier the better? A microfoundational perspective of international
explorative and exploitative capabilities in the transition of SMEs to
Industry 4.0**

Telma Mendes

CIICESI, ESTG/ P. PORTO – Center for Research and Innovation in Business Sciences and
Information Systems, Polytechnic Institute of Porto (P. PORTO), Porto, Portugal
University of Vigo, Vigo, Spain
tilm@estg.ipp.pt

Miguel González-Loureiro

University of Vigo, Vigo, Spain
CIICESI, ESTG/ P. PORTO – Center for Research and Innovation in Business Sciences and
Information Systems, Polytechnic Institute of Porto (P. PORTO), Porto, Portugal
migonlou@uvigo.gal

Vítor Braga

CIICESI, ESTG/ P. PORTO – Center for Research and Innovation in Business Sciences and
Information Systems, Polytechnic Institute of Porto (P. PORTO), Porto, Portugal
vbraga@estg.ipp.pt

Carina Silva

CIICESI, ESTG/ P. PORTO – Center for Research and Innovation in Business Sciences and
Information Systems, Polytechnic Institute of Porto (P. PORTO), Porto, Portugal
ccs@estg.ipp.pt

The earlier the better? A microfoundational perspective of international explorative and exploitative capabilities in the transition of SMEs to Industry 4.0

Abstract

The international exploration-exploitation dichotomy is used in this study to expand on the resource-based view (RBV) and gain a deeper understanding of how these two distinct capabilities affect the adoption of I4.0 in small and medium-sized businesses (SMEs). We investigate managers' cognitive systems as a crucial microfoundation for the international organizational ambidexterity (i.e., exploration-exploitation), given that both managerial cognition and microfoundations perspective are underdeveloped and undertheorized. The study shows that managerial cognition is a crucial microfoundation of international organizational ambidexterity in the context of I4.0 adoption by using structural equation modeling on a sample of 116 Portuguese international SMEs. The findings also reveal neither international exploration nor exploitation has succeeded in creating new opportunities for the application of a technology-based model in SMEs internationalizing earlier. However, a post-hoc analysis revealed that under early internationalization, less (more) experienced SMEs benefit from international exploration (exploitation) to implement I4.0 technologies. This study concludes with implications and future research avenues.

Keywords: managerial cognition; microfoundations; international exploration; international exploitation; Industry 4.0; earliness of internationalization.

Acknowledgments

This research has been supported by Portuguese funds through FCT - Fundação para a Ciência e Tecnologia under the projects UIDP/04728/2020 and UIDB/04728/2020, and by Spanish funds PID2019-106677GB-I00 of the Ministry of Science and Innovation.