



PhD in INGEGNERIA GESTIONALE / MANAGEMENT ENGINEERING - 38th cycle

PARTENARIATO PNRR Research Field: NEW DIGITAL BUSINESS MODELS FOR RESILIENT & CIRCULAR SUPPLY CHAINS

Monthly net income of PhDscholarship (max 36 months)

€ 1450.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

Motivation and objectives of the research in this field

Companies today operate within global and complex Supply Chains, and are exposed to major challenges such as climate change, geopolitical tensions and health issues. Italian companies are embedded in the international context and supporting their competitiveness means protecting employment and welfare for the entire society. The three sectors of Apparel, Furniture and Automation, representative of Made in Italy excellence, are no exceptions. International supply chains today play a fundamental role in terms of Risk Management and Sustainable Development: they may be a source of major problems and negative impacts, on both the society and the environment, or they may become a key contributor to sustainability and circularity. At the same time, the Digital Transformation is radically impacting supply chains: technologies such as the Internet of Things, Blockchain, 3D Printing, Big Data Analytics and Artificial Intelligence are becoming pervasive and can revolutionize the way supply chains are designed and managed, impacting the fundamental performance of delivery, quality, flexibility and cost, as well as environmental and social sustainability. In recent years, supply chains have been affected by several disruptions of various kind, including geopolitical conflicts, health issues, natural events, etc. and therefore Risk Management and Resilience have become imperative. This requires to improve the ability for public actors and companies to identify and assess the various risk sources and to find new ways to reduce the



	<p>exposure, as well as to increase the resilience to disruptions. Supply Chain Management Research today needs to address the challenges raised by Risk Management, Sustainability, Digital Transformation and Supply Chain Resilience, combining multidisciplinary approaches to find innovative answers to the radical problems that the world is facing today.</p> <p>Supply chains today needs new methods and tools, based on advanced digital technologies, to monitor and assess the risk exposure and the sustainability performance of companies and supply chains, in order to improve resilience and circularity.</p>
<p>Methods and techniques that will be developed and used to carry out the research</p>	<p>The main research goals will be:</p> <ul style="list-style-type: none"> - identifying the various risk factors, assessing the risk exposure of Italian companies and promoting the appropriate mitigation actions; - developing new resilience capabilities through digital technologies; - redesigning supply chains, reshoring critical activities previously located abroad and attracting foreign investments; - enabling the adoption of supply chain finance solutions that help SMEs to face the liquidity constraints and improve their sustainability performance; - defining and disseminating standards and platforms that facilitate transparency and traceability of products along the supply chain; - enabling new circular business models <p>The research project will be developed according to the operations and supply chain management perspective, relying on empirical research methodologies such as Case Study, Survey, and Action Research.</p> <p>The project will be carried out within the Extended Partnership "3A-Italy", funded by the PNRR. The candidate will also be exposed to international academic networks (EurOMA, IPSERA).</p>
<p>Educational objectives</p>	<p>The PhD candidate will develop competences and attitudes aimed at developing and implementing innovative solutions in the field of supply chain management:</p>



	<ul style="list-style-type: none"> - New methods and practices for Supply Chain Risk and Resilience management; - Innovative methods practices to assess and improve Supply Chain Sustainability and Circularity - New applications of digital technologies to improve Supply Chain Circularity and Resilience - Innovative Supply Chain Finance Solutions
Job opportunities	<p>Upon completion of the PhD program, the graduate will have the skills and competences to work as researcher in both academia and other research centers (e.g. public and private institutions).</p> <p>The candidate will also have the opportunity to join companies in the following roles:</p> <ul style="list-style-type: none"> - Supply Chain Sustainability Manager - Supply Chain Risk&Resilience Manager - Supply Chain Digital Transformation Manager - Supply Chain Finance Manager
Composition of the research group	2 Full Professors 1 Associated Professors 1 Assistant Professors 5 PhD Students
Name of the research directors	F. Caniato, S. Ronchi e A. Moretto

Contacts
federico.caniato@polimi.it stefano.ronchi@polimi.it antonella.moretto@polimi.it

Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad	
Amount monthly	725.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
The PhD candidate will have the opportunity to attend courses on Management Engineering



research methods and supply chain management research at Politecnico di Milano and other Universities and research centres. He/she will be supervised by the research director through frequent meetings, and will receive feedbacks on his/her intermediate results during regular meetings with the Doctorate board and scientific conferences. The candidate will be involved in some teaching and communication activities, which are seen as a major opportunity to practice with dissemination of own and other relevant research results. He/she will be offered a desk at the department building.

CUP: D43C22003120001

Decreto Direttoriale Avviso:

D.D. 341 del 15/03/2022 Avviso pubblico per la presentazione di Proposte di intervento per la creazione di Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base nell'ambito del Piano Nazionale di Ripresa e Resilienza, Missione 4 Istruzione e ricerca - Componente 2 Dalla ricerca all'impresa - Investimento 1.3, finanziato dall'Unione europea - NextGenerationEU

Decreto di concessione: D.D. 1551 del 11/10/2022