



PhD in INGEGNERIA GESTIONALE / MANAGEMENT ENGINEERING - 38th cycle

PARTENARIATO PNRR Research Field: NEW FORMS OF WORK ORGANIZATION FOR SUSTAINABLE AND INCLUSIVE FACTORIES

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

Digital and smart technologies have revolutionized manufacturing paradigms. Digital technologies have an impact not only on manufacturing infrastructures, business models and processes, but also on work organization, workplace management, work time, and work tools, with new practices and approaches arising. In such context, Made in Italy industries are facing challenges and opportunities to maintain its competitive advantages and traditional craftsmanship approach in the context of the worldwide manufacturing transformation, while also increase their sustainability and inclusiveness. New factory concepts and models for work organization in the manufacturing sector, enabled by the digital technologies, should be put under the spotlight in order to maintain and foster creativity and excellence. Among these models, the role of collaborative spaces (CSs) seem to be particularly interesting to explore. CSs are Fab Labs, coworking, incubators and business accelerators and all the other typologies of spaces that are open to the collectivity, offering infrastructures and knowledge to those actors interested in sharing with others work space and resources – physical, virtual and Knowledge-based. The rapid spread of these spaces in Italy can be observed in the context of the technological and organizational changes underway in the manufacturing sector, within a new production scenario based on digitalization/automation of manufacturing (e.g., additive manufacturing), online commerce and open



	<p>innovation strategies, both market and non-market oriented. Through their service offer, the CSs can act as a technical platform for innovation, aimed at stimulating local entrepreneurship, and a social platform for innovation, aimed at promoting learning, creativity and collaboration, and contributing to the actual implementation of the so called “Urban factory”.</p> <p>Given all the above, there is the need explore in depth possible new forms of work organization, among which CSs, to enable and foster more sustainable and inclusive factories and manufacturing processes in Made in Italy.</p>
<p>Methods and techniques that will be developed and used to carry out the research</p>	<p>The project will use mixed methods. In particular:</p> <ul style="list-style-type: none"> - Literature review on the topic of new forms of organization, CSs and new manufacturing paradigms, with the creation of a typology of new forms of work in manufacturing- - Case studies on new forms of organization in manufacturing and on new “urban factory” concepts - Quantitative analysis to assess impacts and casual relationships between new paradigms and sustainability and innovativeness performances- <p>Action research and collaborative research. Action-based methodologies will be implemented selecting specific realities (e.g. CSs and the network of companies/SMEs/start-ups) that represent new factory concepts, supporting the design, the implementation, and the actions for improvements 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 (e.g., EurOMA).</p>
<p>Educational objectives</p>	<p>The PhD candidate will develop competences and attitudes aimed at developing and implementing new forms of work organization in the field of manufacturing and CSs:</p> <ul style="list-style-type: none"> - New methods and practices for urban factory concepts; - Innovative methods practices to assess and



	improve work organization effectiveness - New applications of digital technologies to improve work organization effectiveness
Job opportunities	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). The candidate will also have the opportunity to join companies in the following roles (among others) - Organization expert - Organizational transformation manager - Community manager within CSs
Composition of the research group	1 Full Professors 0 Associated Professors 1 Assistant Professors 1 PhD Students
Name of the research directors	Proff. Raffaella Cagliano and Filomena Canterino

Contacts
<i>raffaella.cagliano@polimi.it</i> <i>filomena.canterino@polimi.it</i>

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