Workers’ awareness context in Italian 4.0 factories∗

Valeria Cirillo† Matteo Rinaldini‡ Jacopo Staccioli § Maria Enrica Virgillito¶ § 11

1st August 2018

Abstract

The study of the co-evolution of processes of technological innovation and the resulting organisational changes has been a topic of interest since the first appearance of the idea of division of labour and specialisation in Adam Smith’s works. The major phases of organisational change are in fact the result of ‘waves’ of technological innovations attributable to the various industrial revolutions. Nowadays, a new potential technological paradigm dubbed ‘Industry 4.0’ is shaping the manufacturing output of USA, Europe, and China, particularly in the automotive/engineering industry. With reference to the latter, the present research contribution aims at investigating, by means of field-work research activity, the degree of openness of the awareness context of workers and their intervention authority on the production process within three factories in the so-called Italian ‘Motor Valley’. Together with state-of-the-art 4.0 technology adoption, these firms exhibit different organisational practices ranging from the Japanese Toyotism (Cesab-Toyota), to a mix of Taylorism and co-determination (Ducati), up to the example most akin to the German ‘Mitbestimmung’ (Lamborghini). This technological wave is fostering the process of making the production system lean. Our findings corroborate the presence of a hybrid process of Industry 4.0 adoption, reflected into a hybrid process of workforce empowerment.

JEL classification: L23, L6, M54, O33.

Keywords: Industry 4.0, Technological Paradigms, Organisational Change, Lean Systems, Awareness Context.

∗The authors wish to thank Giovanni Dosi, Francesco Garibaldo, Angelo Moro, participants to the SISEC (2018, Milan, Italy) and to the Workshop “A new Industrial Revolution? Labour, Technology and the Automotive Industry” (2018, Pisa, Italy) for helpful comments and insightful suggestions at various stages of this work. The authors wish to thank the Claudio Sabattini Foundation (Bologna, Italy) and the Institute of Economics of Scuola Superiore Sant’Anna (Pisa, Italy) for their support during field-work.

†Istituto Nazionale per l’Analisi delle Politiche Pubbliche (INAPP), Corso d’Italia, 33, 00198 Roma, Italy.

‡Dipartimento di Comunicazione ed Economia, Università degli Studi di Modena e Reggio Emilia, Via Allegri, 9, 42121 Reggio Emilia, Italy.

§Institute of Economics, Scuola Superiore Sant’Anna, Piazza Martiri della Libertà 33, 56127 Pisa, Italy.

¶Dipartimento di Politica Economica, Università Cattolica del Sacro Cuore, Via Ludovico Necchi, 5, 20123 Milano, Italy.

11To whom correspondence should be addressed: mariaenrica.virgillito<at>unicatt.it