

A methodological proposal for evaluating productivity through textual analysis: results from a simulated working environment case study

Gian Piero Turchi¹, Christian Moro², Tommaso Arcelli³, Luisa Orrù⁴

¹ University of Padova – gianpiero.turchi@unipd.it

² University of Padova –christian.moro@unipd.it

³ University of Padova –tommasoarcelli7@gmail.com

⁴ University of Padova – luisa.orrù@phd.unipd.it

Abstract

Productivity is considered a broad measure of various aggregate behaviours, often difficult to quantify. Commonly it is defined as the relationship between inputs and outputs: for individual workers, inputs are the information and materials received, and outputs are the tasks and decisions made. Methods for productivity evaluation are classified in physiological, subjective and objective. However, due to controversial results, no consensus has been reached on a comprehensive approach to evaluate it. To bridge this gap, we propose Dialogic Process Analysis (DPA) and introduce the concept of productivity management. DPA focuses on the analysis of natural language use, the medium through which humans attribute sense to the reality in which they find themselves – here, a working reality. Productivity management refers to the relationship between the interactive-discursive configurations of the (working) strategies employed and the results achieved, in relation to the pursuit of a corporate objective. Their combination made it possible to develop productivity management indicators, derived from 24 codified ways of using natural language: these allow for detaching from workers' personal assessments criteria, providing comparable evaluations of the efficiency and effectiveness of the work activity. Here we describe results from the application of this methodological proposal in a simulated working environment, where the aim was to evaluate the degree of participants' productivity management in varying indoor environmental conditions. We collected 59 participants' data through an ad hoc designed open-ended questionnaire, digitally administered after 2 hours of experimentation, and analysed the response texts using DPA and IRaMuTeQ. Overall, we evaluated a medium-high level of productivity management. Interestingly, however, only few of them directly linked productivity to comfort or stated that environmental conditions influenced their productivity management. In contrast to field literature, this observation suggests that a positive correlation is not necessarily an effective way to describe the comfort-productivity relationship.

Keywords: Productivity evaluation; Dialogic Process Analysis; Language.