

Streszczenie pracy w języku angielskim

Title: Productivity management model of semi-automatic production workstations in terms of the Lean Manufacturing concept

Keywords: productivity management, Lean Manufacturing, model

Productivity management at the level of the production position in the perspective of obtaining the required positive effects by organizations is a primary action to be implemented by managers. The author carried out research on the identified scientific gap in the area of productivity management of semi-automatic production stations in terms of the LM concept. He posed a scientific problem in the form of: *how does the LM concept affect the productivity management of semi-automatic production stations in terms of the LM concept?* Based on the research problem that was posed, as well as the planned way of conducting the research, research questions were determined:

Q1: How is productivity management implemented in production management?

Q2: How does the LM concept affect the productivity management of semi-automatic production stations?

Q3: How do productivity management models affect productivity management in production workstations?

Q4: What instruments are needed to verify the productivity management model of semi-automatic production stations in terms of the LM concept?

Q5: How do productivity management models affect the productivity management of semi-automated production workstations?

For the identified research problem, as well as the posed research questions, the purpose of the doctoral dissertation was formulated as follows: *to develop a model for managing the productivity of semi-automatic production stations in terms of the LM concept.*

To effectively achieve the main objective, specific objectives have been defined: theoretical and cognitive goals, methodological goal and utilitarian one.

Theoretical and cognitive goals:

C1: Study of theoretical considerations concerning the issues of productivity management in production management, as a subdiscipline of management and quality science.

C2: Operationalization of the production process, particularly in the field of organization of semi-automatic production stations – identification of elements affecting production management and productivity of the tested production stations in terms of the LM concept.

C3: Development of the concept of a productivity management model for semi-automatic production stations in terms of the LM concept.

Methodological objective:

C4: Development of research instruments to verify the productivity management model of semi-automatic production stations in terms of the LM concept.

Utilitarian objective:

C5: Assessment of changes taking place at semi-automatic production stations in terms of the LM concept after applying the proprietary productivity management model.

Subsequently, the author formulated the main hypothesis and auxiliary hypotheses.

Hypothesis: The development and implementation of a productivity management model in terms of the LM concept will improve the productivity of semi-automatic production stations.

Auxiliary hypothesis No. 1: If production management is characterized in the company it will be possible to determine the issues related to productivity management in manufacturing enterprises.

Auxiliary hypothesis No. 2: If the elements of the positive impact of production management on productivity are defined, it will be possible to determine the factors improving the productivity of semi-automatic production stations in terms of the LM concept.

Auxiliary hypothesis No. 3: If the processes carried out in the field of organization of semi-automatic production stations are carried out, it will be possible to identify the components of the productivity management model for these positions.

Auxiliary hypothesis No. 4: If research methods are defined, it will be possible to develop a research tool for the concept of the productivity management model of semi-automatic production stations in terms of the LM concept.

Auxiliary hypothesis No. 5: If a productivity management model is developed in terms of the LM concept, it will be possible to indicate the spectrum of benefits and potential limitations of implementing this model in the production process.

The first chapter describes the defined essence of productivity management in production organizations. It reviews the literature to systematize the concept of production management and productivity management in manufacturing enterprises. This made it possible to define the current state on semi-automatic production stations. In the first chapter, the author answered the first research question (P1). He also achieved the first specific goal, theoretical-cognitive one (C1). And also, a positive confirmation of the auxiliary hypothesis No. 1.

The second chapter characterizes the problems of the LM concept. It reviews the definitions found in the literature on the subject. Next, the principles of LM in a production enterprise and the principles of organization of production stations using the LM concept are explained. The second chapter answers the second research question (P2). The second specific objective, theoretical-cognitive one (C2), has been achieved. In addition, auxiliary hypothesis No. 2 was positively confirmed.

The third chapter explains the issue of productivity management models by reviewing the definitions used in the literature, as well as examining the structure of selected productivity models. Components of productivity management models, including management instruments, were also presented. Next, proposals for a proprietary productivity management model for semi-automatic production stations in terms of the LM concept were presented. The characteristics of the author's model have been described in detail, including the elements that make up the model, i.e.: productivity factors on semi-automatic production stations (external and internal), LM aspects, LM principles and Muda categories. The third research question (P3) is answered in this chapter. In this way, the third specific objective, theoretical-cognitive one (C3), was achieved. In addition, a positive verification of auxiliary hypothesis No. 3 was obtained.

The fourth chapter summarizes empirical research on the implementation of the productivity management model in organizations using LM concepts. A research schedule is presented, as well as research methods and tools are defined. Next, the selection of the research sample was presented and the developed research tool – the research questionnaire – was described. In the fourth chapter, the author answered the fourth research question (P4). The fourth specific objective, methodological one (C4), has been completed. In addition, auxiliary hypothesis No. 4 was positively verified.

The fifth chapter presents the results and analysis of own research on the applied proprietary productivity management model for semi-automatic production stations in terms of the LM concept in the surveyed organizations: Grupa Kęty S.A. and Diehl Metering Sp. z o.o.

Verification of the main hypothesis and auxiliary hypotheses and specific goals was presented, as well as an assessment of changes occurring after the implementation of the model in the surveyed enterprises. The benefits and limitations of the proposed productivity management model have been defined. Subsequently, recommendations for further scientific exploration and potential directions for improving the productivity management model were also indicated. The chapter answers the fifth research question (P5). The fifth specific objective, utilitarian one (C5), has been fulfilled. And the auxiliary hypothesis No. 5 was positively confirmed.

At the end of the work, an essential summary of the doctoral thesis was included. The author of the dissertation proves that by implementing the specific objectives he achieved the main goal, as well as obtaining positive verifications of auxiliary hypotheses led him to confirm the main hypothesis. Subsequently, arguments regarding the originality of the thesis were also given, which constitute the author's added value to the development of the theory of management and quality sciences, the limitations of research were pointed out and problems for further research were identified.

The doctoral thesis also contains an annex with seven appendixes, which complement the research carried out as part of this work. The dissertation is part of the tool gap regarding the phenomenon of productivity management. The theoretical-empirical research carried out and the obtained research results confirm that the issues raised are still a current research area, requiring further exploration.