

## **Industry 4.0: Applications Of Digitalization and Technical Applications in The Healthcare Sector Using the Example of The Pharmacy Sector in Germany\***

Stefan REZEPA and Jan PEKAR

Comenius University Bratislava, Berlin, Deutschland

Comenius University Bratislava, Bratislava, Slovakiai  
jan.pekar@fmph.uniba.sk

Correspondence should be addressed to: Stefan REZEPA; rezepe1@uniba.sk

\* Presented at the 42<sup>nd</sup> IBIMA International Conference, 22-23 November 2023, Seville, Spain

### **Abstract**

The integration of networking, artificial intelligence and robotic systems is the defining feature of the Industry 4.0 environment, as it enables systems to function with little human intervention. In the healthcare sector, this is even more important because, on the one hand, there is a high level of system relevance and, on the other hand, fast information and data are necessary for successful treatments of patients. In this case pharmacies are an important factor. However, digitalisation and the use of Industry 4.0 opportunities have been weak so far and require greater efforts than shown in the past. The resulting and logical core research question of this research paper is therefore: Where can Industry 4.0 implementations be used in the field of pharmacy, taking pharmacies as an example? In order to uncover the potentials, a separate considerably empirical approach was used to determine by means of questionnaires among pharmacies how advanced the transformation of processes at pharmacies towards more digitalisation is and which determinant problems still exist. The sample size, which was used, is n=420 and it can be stated as a result that both in the active use of technical possibilities and instruments as well as in digital networking and communication, the majority of pharmacies are far behind using the variety of possibilities that already exist. Thus it is not necessary to elaborate new solutions, but to utilize existing options. The objective of the report is to offer a management structure for pharmacies with the PIVOT approach, which will enable them to manage the problems better.

**Keywords:** Public health; pharmaceutical industry; Industry 4.0; digitalisation