

## The Relationship Between Industry 4.0 and Lean Production: An Empirical Study on Bursa Manufacturing Industry

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ARTICLE INFO	ABSTRACT
<p><b>Keywords:</b> Industry 4.0 Industry 4.0 Applications Lean Production</p> <p>Received 24 March 2020 Revised 29 April 2020 Accepted 4 May 2020</p> <p><b>Article Classification:</b> Research Article</p>	<p><b>Purpose</b> – This study intends to empirically determine the effect of Industry 4.0 (digital technology) on the companies adopted lean manufacturing in their production system. This study also gave importance to the factors that were not discussed in previous studies, such as Cause of Problems and Equipment Maintenance.</p> <p><b>Design/methodology/approach</b> – The universe of this study was the businesses adopting lean manufacturing system in Turkish city of Bursa. In order to achieve this goal, a survey was used as a data collection method. In this context, 250 questionnaires were sent to the related companies by Simple Random Sampling Method and received 169 usable responses. Then, frequency, reliability, correlation, and factor (ANOVA) analyses have been used to analyze the data obtained.</p> <p><b>Findings</b> – According to the research results, there are 7 dimensions of the lean production system. These dimensions are called Pull System, Production Equipment, Statistical Methods, Equipment Maintenance, Product Similarities, Communication with Suppliers and Cause of Problems. Also, there have been differences between industry 4.0 (digital technology) usage and lean manufacturing systems. In addition, the authors found that there are significant and positive relationship between factors; Pull System, Production Equipment, Statistical Methods, Equipment Maintenance, Product Similarities, Communication with Suppliers. However, there was no significant relationship between the problems causes factor and Industry 4.0 (digital technology).</p> <p><b>Discussion</b> – Considering the results obtained, the authors suggest that companies that use lean manufacturing systems should adapt to changing technology early by integrating with Industry 4.0 and meeting customers' changing requirements. In addition, a quantitative approach will be presented in future studies, where it is believed that companies using Industry 4.0 will make an additional contribution to the literature by identifying the competencies and departments changed.</p>

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