Abstract
This paper aims to propose a methodological approach to the design of conveyors and material handling equipment in the operations of a coal storage yard based on the use of quantitative techniques Design of Experiment and object-oriented discrete simulation. To achieve this objective, we consider the following aspects in the field of coal mining in Colombia: supply chain, logistics, warehouses, storage yards and conveyors. Concluding the article, you can specify that the storage yard operations have a direct impact on customer satisfaction and efficiency of the logistics of coal mining, hence the importance of using material handling equipment mechanics as conveyor belts. Finally, it was found that the use of experimental design and object-oriented discrete simulation, increase design capabilities or upgrading conveyor belts, as the first to identify and evaluate which factors affect the average time of shipment or transport of coal storage yard, for its part, the 3D simulation allows to represent the different experiments, thereby supporting effective decision making.

Keywords
Coal mining, logistics, storage yard, conveyor belts, discrete simulation, experiments design.