



جامعة الإسكندرية  
ALEXANDRIA  
UNIVERSITY



Faculty of Engineering  
Department of Textile Engineering

# Mass Customization in The Apparel Industry

A Dissertation submitted in partial fulfillment of the requirements for the  
degree of Doctor of Philosophy

In

Textile Engineering

Presented by

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2020

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**ABSTRACT**

Mass customization could be considered as a new trend in the garment industry. Not only, the fashion industry has limitations of the short life cycle and low predictability market also its supply chain also faces many obstacles to achieve this customization due to the need of high level of customer satisfaction and more flexibility at low cost. The present study aims to address the factors affecting the performance of the supply chain using a system dynamic model that highlights their influence in order to minimize the supply chain cost under the case of mass customization. Moreover, this research provides a cloth drapemeter in which a new modification of drape measurement has been obtained in order to enhance the garment simulation towards mass customization. This new design provides researches to investigate more factors affecting the garment drape. From this study, the number of seam lines reduces the drapeability while the increasing of the angle skirt design raises the drape. In addition, a comparison between the real and visualized skirts had been studied and it has been found that there is the difference between them, however; the heavy plain and light twill fabrics give good results.