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## Fashion and Ergonomic Design: Aspects that influence the perception of clothing usability

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### Abstract

The relevant issues about clothing have been increasing in recent times. The increase number of consumers and users that search for differentiated and appropriate products to their needs and expectations is impacting on the design stages as well as on manufacturing process. Thus the understanding of specified segments of consumers and users emerges as a competitive strategy that is favourable to the development of products that are adequate and satisfactory to different individuals. Regarding the fashion context, the clothing product provides to the emotional level channels of signification and subjective identification. Considering the direct contact between clothing and user, the information about anthropometric biomechanical and ergonomic are of extreme relevance for the development of modelling that are appropriated to different needs of different segments of users.

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### 1. Introduction

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direct integration of the clothing with the skin and the topography of the body, the garment generates value of judgment inherent to the perception of the aspects of usability, pleasantness, comfort, enjoyment and satisfaction regarding the needs of the subject.

From this principle, ergonomic design provides tools that when applied during the stages of clothing conception, may be able to direct more precisely the characteristics of the product in favor of safety, efficiency and comfort. In order to understand the complexity of the integration of body and clothing, the study of anatomy and body movement are necessary. It is important to understand the balance plans of the entire body as well as the its movements such as flexion, extension and other [1].

In this way, the multi and interdisciplinary interaction between project of clothing and ergonomic design contributes to the progress and to the resolution of the project of clothing projects. The understandings of the concepts of usability, comfort and ergonomics which are specific of certain groups (niches) are necessary in order to obtain fashion patterns that adequately meets to their expectation and requirements.

### 1.1. The metamorphosis of Fashion

Throughout the evolution of societies, fashion contributed to the identification of social and identity role of the subjects by hierarchical use of different clothes and accessories. Its symbolic character is a reflection of subjective and cultural aspirations of a certain period, which, in turn, significantly reflect on the physical and constructive aspects of fashion products, especially clothing.

With respect to the symbolic, physical and materials aspects of clothing, it can be noticed an infinity of transformation that expressed the social, cultural and technological context of a given period. In general, the clothing has gone through a process of simplification, especially from the decade of 1800. This phenomenon is primarily due to new industrial technologies, to higher demands of products and to the adaptation to new manufacturing process.

As an example, the revolution in women's clothing led by French designer Paul Poiret in the early twentieth century can be mentioned. Thanks to the fashion creator, the women's clothes were simplified becoming lighter, thus facilitating the movements of body [2]. The fashion innovation broke with the rigid structure of the corsets that made pressure on woman's abdomen in order to create and define a slim waist, a protuberant bust and a straight posture. The stylist also proposed a lighter silhouette, deeper necklines (mainly the "V" model), apparent shoulder, ample shapes, and other modeling variations.

In general, throughout history, a variety of social, cultural and professional practices have contributed to a more efficient and realistic view about the needs of the individual and of their daily tasks. Due to this trend and the industrial logic of large-scale production between 1950 and 1960, the fashion has become more democratic, and therefore, the user began to be perceived with more relevance by companies in the sector.

The new phase was characterized by what came to be known in France as *prêt-à-porter*, and in the United States as ready to wear. Rigidity, ostentation and exclusivity of the *haute couture* were no longer consistent with the new economic, cultural and demographic realities of the postwar years. There was a need for more agility and quantity of products. Thus a rapid production system began to be practiced under new industrial characteristics that were adapted to the increasing demands of garments product [3,4].

The new industrial system promoted great transformation within the creative and development process of fashion products. The demand for products increased significantly due to new social groups which had higher purchasing power and new forms of consumption established with the advent of mechanization and mass production. Consequently, the system was quickly disseminated through several regions of the world, favoring the strengthening of the textile and apparel industry. The design and planning stages of clothing increasingly improved concerning to new textile and industrial technologies, as well as became more sensitive to social and cultural movements.

The hedonistic consumption was becoming increasingly present, intensified primarily by aesthetic and symbolic elements of fashion products. Consequently, the industry had to be opened to the perceptions and desires of a society increasingly focused on the present, on the new and on the possibilities of identity expression. The youth groups, for instance, were a segment of consumer which significantly influenced guidelines of development and production of a few fashion products over the course of the decades after the consolidation of the industrial system [3].

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