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SEAMLESS TECHNOLOGY APPLIED TO THE FASHION DESIGN

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ABSTRACT

The seamless concept is rather new. Starting to be known in the 80's, the resulting products made with this technology are capable to fulfill the consumers' needs regarding functionality, performance and comfort. The products made with this technology that are more popular involve areas such as sports, health care, underwear and outerwear and less quantity exterior garment. From this study one understand that there is a significant design component to be further explored when it comes to integrating fashion in seamless garments, by inserting fashion trend elements that will give higher added value to these products.

Key Words: *Fashion Design, Design Methodology, Seamless Technology*

1. INTRODUCTION

Flexibility and speed are nowadays becoming essential factors if one intends to satisfy consumers' needs and desires. In order to win the race against time and the need for differentiation, fashion design seeks for backgrounds on technologies, being seamless one of the technologies that is available and still with a considerable expanding potential. Considered as relatively new, regarding to its application in Fashion Industry, seamless technology can start from one dimension (yarn) directly into three dimensions (ready to wear garment). Seamless designates the concept of cloths with no seams, where a significant number of seams - mainly the lateral seams - are eliminated or drastically reduced in number. This concept can be understood as a knitted fabric product ready to wear (accepting models that need some few addition clothing finishing operations) made with no seams, some of them made while the fabric is being knitted. The resulting products made using this technology are capable to fulfill the consumers' needs regarding functionality, performance and aesthetic, but these are normally basic products such as underwear, being also easily copied and susceptible to fierce competition, due to the low knowhow necessary to produce them.

Starting from the understanding behind the seamless phenomena, this work comprehends the research focusing the so called outerwear, or exterior clothing, by conjugating the knowhow from textile engineering and fashion design. Based on a previously made descriptive and exploratory study, interviews and questionnaires were conducted in order to identify business opportunities. This work pretend to contribute to develop a language (a codex) that will facilitate the communication between these two worlds: the creative and the technical. These two skills, together with a technical language would definitely result in innovative products.

2. MATERIAL AND METHODOLOGY

The adopted methodology of this work is based on bibliographic review, interviews with professionals, and a consumer survey as the form of problem identification according to the design approach. In a first stage, an exploratory research was conducted, with the main goal of understanding the principles behind the focus of this work – seamless technology applied to outerwear – by means of interviewing different agents directly related with this particular market segment, such as seamless knitwear producers, knitting machine manufacturers and

education professionals. In consequence of qualitative analysis from the interviewing, some hypotheses were considered in order to investigate the reason for not having a wider offer in terms of design and fashion regarding to these clothes as the exterior layer.

One of the hypothesis considers the lack of specialized education and professionals regarding creative fashion design specially conceived for seamless garments. The other hypothesis, which can be answered by analyzing the results obtained from the survey to possible consumers, assumes that these consumers do not know what seamless technology stands for, or do not find these products enough appealing in terms of fashion and design for exterior clothes.

After analyzing the formulated hypotheses and the information already collected, a survey was designed. Its purpose was to obtain information regarding the consumer's knowledge about seamless technology and the use of these products. The survey was made in a simple and clear structure in order to stimulate the reply and thus maximize the number of respondents. Available through an internet website, the survey was disseminated through the academic community – students, teachers and other employees – from University of Minho (Guimarães, Portugal) and the University Feevale (Novo Hamburgo, Brasil). The questionnaire was composed by fourteen questions, with open and closed answers, some mandatory and some with free answers. Some pictures were also used whenever it was needed in order to give better understanding about the products under research.

3. RESULTS AND DISCUSSION

The survey was maintained online between May and June 2009, with a final number of 205 respondents. From the results one could extract that 81% are women. About 63% were Portuguese, 36% from Brazil and 1% from other Portuguese-spoken country. The respondents were organized in four classes based on their age: Young (less than 25 yo) 40.5%; Young Adults (between 25 and 35 yo) 40.0%; Adults (between 36 and 45 yo) 15.6% and Mature (more than 45 yo) 3.9%.

The first question was intended to know about the knowledge of the responders regarding the seamless knitted products and technology. In this question, a definition was given together with some pictures and it was asked if the responders agree with that definition. About 82% of the responders knew what seamless stands for and agree with the definition. The remaining 19% disagreed or did not know this technology and products.

The next question asked about "What kind of garment made with seamlesss do you usually buy?". In all classes the majority of purchased seamless-based products are underwear, followed by sportswear. Exterior outfits, the goal of this study, has a very small representation in sales: about 4% for Young people, 12% for Young Adults, 6% for Adults and almost 19% for Mature people. Some reasons can be presented, such as the lack of offer of this products concerning to the outerwear, and the high cost of the available products, mainly when one considers the tendency to increase the purchase of these kinds of items with age, which probably can be related with the economic stability as a person becomes older.

Other question deals with the strong and weak points that can be indentified in the seamless products, such us: comfort/mobility, performance, body fitting, raw-materials used, available sizes, model diversity, price, aesthetic/fashion presence. Figure 1 shows the most

representative results for each of the above mentioned points. The comfort/mobility was identified as a strongest point (90.2%). Body fit showed 87.8% as a strong feature. Raw materials used are considered as a strong point by 48.3% and 37.6% having no opinion, which may be related with their lack of knowledge related with the fibers used in seamless products. The available sizes are considered as a weak feature, for 32.2%, while 27.3% understand as being a strong feature. Regarding the models diversity feature, some unsatisfaction can be observed, since 58.5% considers it as a weak factor. One can say that, based on the market research made, most of the seamless products do not offer variety regarding to styling forms or shapes. Aesthetics is a more controversial feature, with 38% considering as a strong feature and 35.6% considering a weak factor. Finally, 62.9% consider the cost of these products as a weak factor.
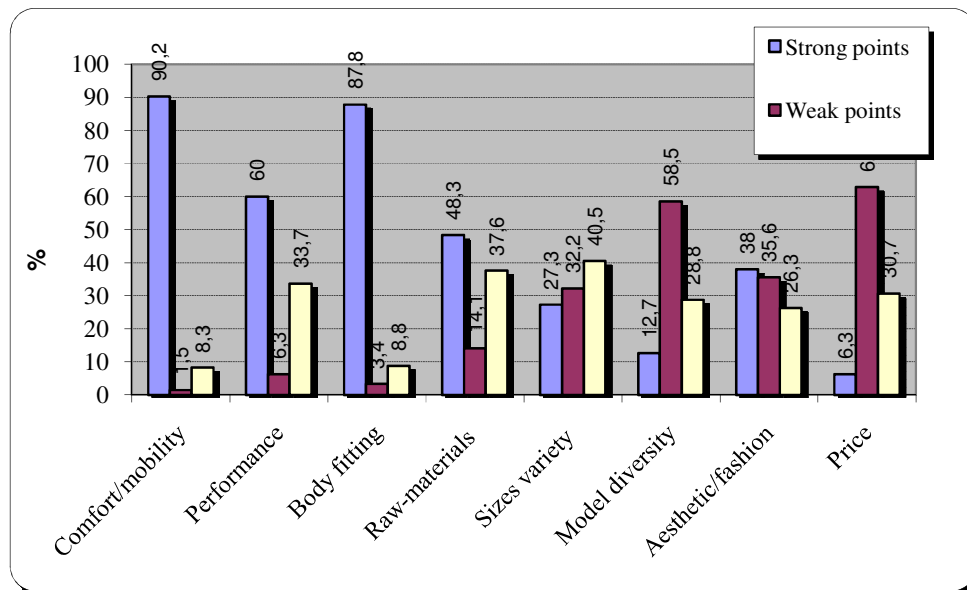

Figure 1. Strong and weak factors in seamless products.

Other particular relevant question for this research was the one that involves the presence/absence of fashion elements on seamless products. Again, a set of factors were asked to be checked as being present or not. Based on the results, one can say that 88.4% identify the basic colors, while 22.4% recognizes the fashion colors as being present. Basic styles are recognized by 73.2% of the respondents, while fashion trends models are recognized by only 19% of the respondents. Regarding to embroidery/prints application, 8.3% identifies their presence, but the number increases to 16.1% when patterns and textures are considered as being present in seamless products. The presence of natural fibers is recognized by 13.7%, while synthetic fibers are identified by 38% of the respondents. The overall results by class can be observed in figure 2.

4. CONCLUSIONS

The Seamless technology presents a vast research area, in particular when one considers fashion and textile design. There is not much literature available about this technology, and when there is, the focus is on technical issues, rather than design and fashion. This paper, deals the relationship between seamless technology and design, exploring its inherent advantages and capabilities, both from the aesthetical and technical point of view.
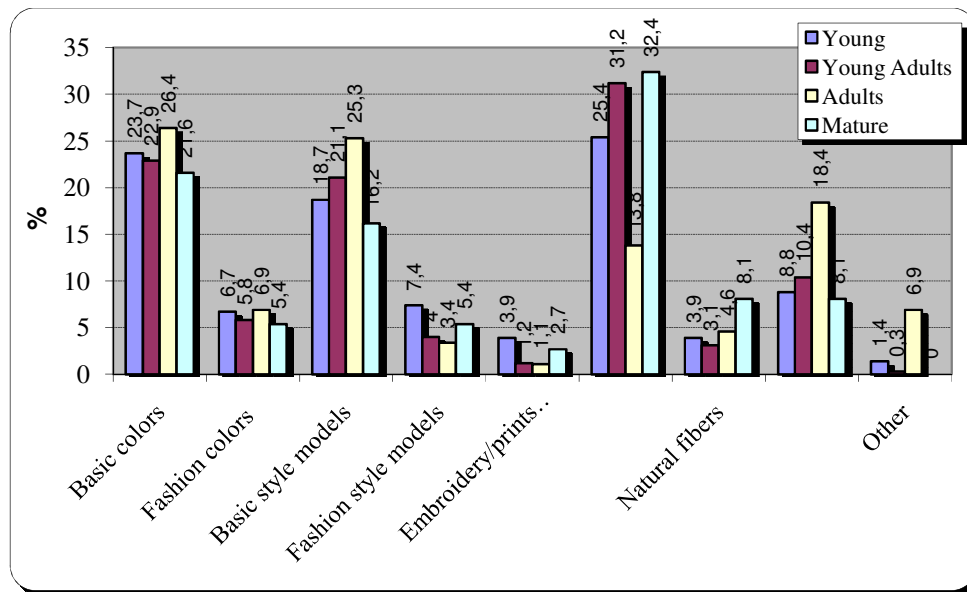
Figure 2. Fashion elements that are recognizable in seamless products.

From the results obtained one understand that there is a significant design component to be further explored when it comes to integrating fashion in seamless garments, by inserting fashion trend elements that will give higher added value to these products. One of the possible reasons for that it is the lack of fashion designers with know-how in seamless technology which compromises the final product in terms of textures, colors, shapes. The communication between designer and technicians based on the lack of technique language and specific codes inhibits the creation of appealing products, fact that should be addressed in order to overcome this problem and open the doors to a market opportunity. As a contribution to this proposal, in this project the authors are presently developing a methodology for creating outfits with seamless technology, by proposing common coding and lexicon in order to facilitate communication between technicians and fashion designers, able to stimulate and manufacturers, technicians and designers to invest in seamless outerwear market.

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