

# TAXONOMY OF APPAREL WEBSITES

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## ***Abstract:***

*The paper presents a typology of apparel websites. This typology includes three types of websites which are identified by applying the method of cluster analysis. The profiles of the three major types of apparel websites are described. The authors outline the guidelines for future research and explain that the present research is the first step of a larger project.*

***Key words:*** cluster analysis, apparel websites, visual merchandising, typology

## 1. INTRODUCTION

During the last decade we observe a huge increase of internet trade, especially in the sector of clothes and shoes. The internet space bristles with apparel online stores and their number rise constantly. The science and practice of visual merchandising develop fast nowadays and move toward a new dimension – that of the digital world. The visual merchandising principles as well as the elements of visual merchandising change rapidly in order to response to the changes. These elements need to be studied and analyzed. An important part of the analysis of visual merchandising elements of apparel (fashion goods) in digital environment is to classify the websites on the basis of these elements.

The objective of the present paper is to classify the apparel websites (online shops for fashion goods) on the basis of visual merchandising elements. We applied the method of cluster analysis and discovered three major types of apparel websites from the point view of their visual merchandising elements. We have analyzed hundreds of apparel websites and have determined the newly emerged elements of apparel presentation in digital environment or the so called visual merchandising elements. These elements concern the visual presentation of fashion goods within the online stores. We have identified tents of visual merchandising elements and used them for the sake of forming a typology of apparel websites.

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## 2. DEFINITION OF CLASSIFICATION DIMENSIONS

The list of classification dimensions are presented in Table 1. This list consists of 17 dimensions (variables). All of the variables are measured on the dichotomous scale (1 – yes; 0- no). If we point our attention to the first dimension which (“Site map”) we might say that a specific website could propose a site map (which is coded by 1) or could not (which is coded by 0). The same coding is done for the rest of the variables. The next 5 dimensions in the classification list are grouped together because they concern the searching options. Some apparel websites offer a searching option while others do not offer such an option. The different variants of searching options are included in the list – by brand, by item, by target, by price, and by style.

**Table 1 List of classification dimensions**

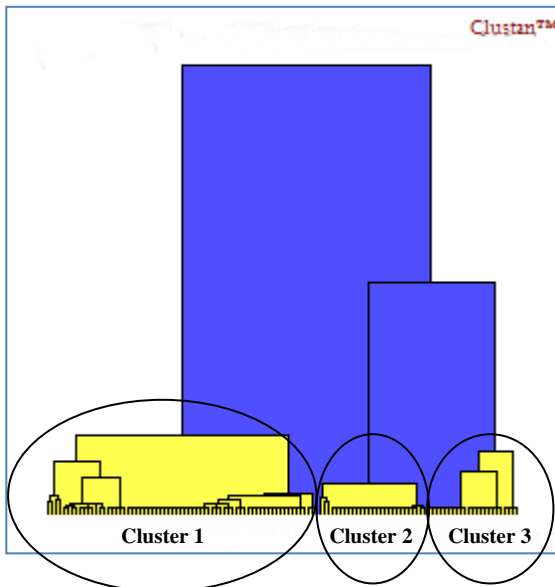
			Classification dimensions	Scale		
1			Site map	Dichotomous	0,808	0
2	Searching options	2.1	By brand	Dichotomous	0,802	0
		2.2	By item	Dichotomous	0,849	0
		2.3	By target	Dichotomous	0,853	0
		2.4	By style	Dichotomous	0,849	0
		2.5	By price	Dichotomous	0,884	0
3	Presentation style	3.1	Horizontal	Dichotomous	0,866	0
		3.2	Horizontal place/ appear	Dichotomous	0,866	0
		3.3	Vertical	Dichotomous	0,825	0
		3.4	Vertical place/appear	Dichotomous	0,825	0
		3.5	Intro-page	Dichotomous	0,932	0
4	Atmospheric features	4.1	Intro-music	Dichotomous	0,308	0
		4.2	Music during browsing	Dichotomous	0,952	0
		4.3	Video	Dichotomous	0,952	0
		4.4	Simple click-on	Dichotomous	0,429	0
5	Sales/ Promotions signages	5.1	Automatically-moving advertisements	Dichotomous	0,264	0,041
		5.2	Non-clickable advertisements	Dichotomous	0,922	0

The third group of dimensions includes decisions concerning the presentation style accepted within a specific website. An apparel website can be organized by a vertical or a horizontal order. The main presentation styles within this 3<sup>rd</sup> group of dimensions are the following: horizontal, horizontal place/appear, vertical, vertical place/appear and presence/absence of an intro-page. The fourth group of variables cover the so called atmospheric features – intro-music, music while browsing the website, vide, and simple click on. The last set of dimensions presents the Sales/Promotions signages. This set includes two options - Automatically-moving advertisements and Non-clickable advertisements.

It is important to point out that we used only a part of all dimensions in order to run the procedure of cluster analysis. The rest of the dimensions (the so called external dimensions) were used later for the sake of assessing the external validity of the defined clusters. This approach has applied in other classification studies and has proved its validity and appropriateness (Katrandjiev, 2011).

### 3. DEFINITION OF CLUSTERS' NUMBER

**Figure 1: Dendrogram of 3 cluster solution**

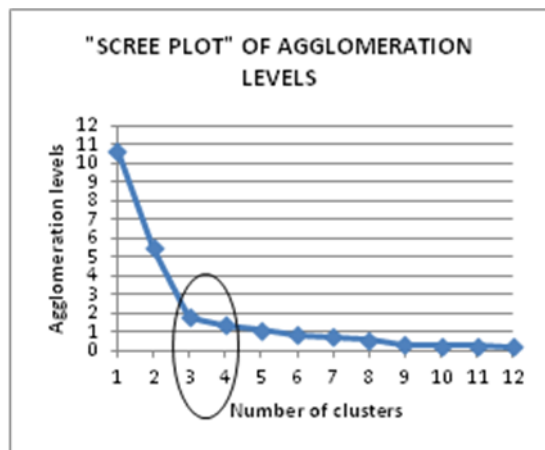


In the process of cluster analysis we applied the method of hierarchical clustering. Within the hierarchical methods we chose the method of Ward. The reasons we preferred this approach are the following: first, the hierarchical approach graphs the clustering process in clear and easy-to-interpret manner; second, the visual presentation of the clustering process eases the process of defining clusters' number. The dendrogram of the clustering process is shown at Figure 1. As can be seen we chose a 3 cluster solution (the clusters are surrounded by ellipses).

The decision for the final number of clusters was taken on the basis of some analysis and consideration.

First of all we applied a widespread approach for defining the number of the clusters – the “scree test”. According to Aldenderfer and Blashfield the practical application of this method means to “graph the number of clusters implied by a hierarchical tree against the fusion or amalgamation coefficient, which is the numerical value at which various cases merge to form a cluster” (Aldenderfer, Blashfield, 1984, p.66).

**Figure 2: Defining the number of clusters**



The scree diagram (called also the elbow diagram) is presented at Figure 2. According the rule of the “scree test” one must identify the point at which the amalgamation levels (Y-axis) drop suddenly and line becomes flat and not so steep. This point shows on the X-axis the number of clusters.

As shown on the diagram of agglomeration levels (Figure 2) the zone at which the flattening of the curve starts is corresponding to 3 or 4 cluster solution. The final decision of defining the clusters' number was taken after a thorough analysis of the two options.

#### 4. THE CLUSTERS' PROFILES

As stated earlier by the help of cluster analysis we identified three types of apparel websites. The websites were profiled on the basis of their characteristics (or elements) listed in Table 1.

From the "presence" or "absence" of these elements we analyzed the clusters' profiles. Applying this method we identified three major types of apparel websites: (1) simple, (2) practical and (3) convenient online stores for fashion goods.

The first type is characterized by its simplicity of implementation. It contains some basic elements such as sitemap (without an option for searching products). The positioning of the menu buttons is mainly vertical. The products are presented by a human model in 2-D version and there is a colour sample as well.

The second type of online stores is distinguished by its richer performance. It has a search criterion in the online stores - search. It has to look as option product and style of the garment. Site menus are vertical positioning. Advertising here is presented by static advertising brochures. Monochrome background is again presented in the cluster. When choosing the font color white was chosen. Products are offered in this kind of online stores and usually are represented by 2-D version accompanied by front and rear views of the product. Magnifying certain parts of the apparel is an extra option here.

Offering these products at the site also includes a model that provides an option for offering additional suggestions for each item (the so called cross-selling). Registration is mandatory.

The third type of clusters is "the richest" among all. There is a sitemap, search engine submission style menu on the site in a horizontal position, introductory page in the online store. Atmospheric features are characterized by music on demand and video. The Background color and text color is white. Also this type of cluster also has other predominant colors - black, red, etc. The type view of the product is 2-D with three options - front, rear and sides. And there is also a color sample. Featured products are represented by a model, and there are proposals related to the desired product called cross selling. Registration shopping here is mandatory.

To be more clear and summarized the status of the various clusters can be produced visually as shown on Fig. 3. As can be seen, all clusters of online stores can be characterized on the basis of the following characteristics:

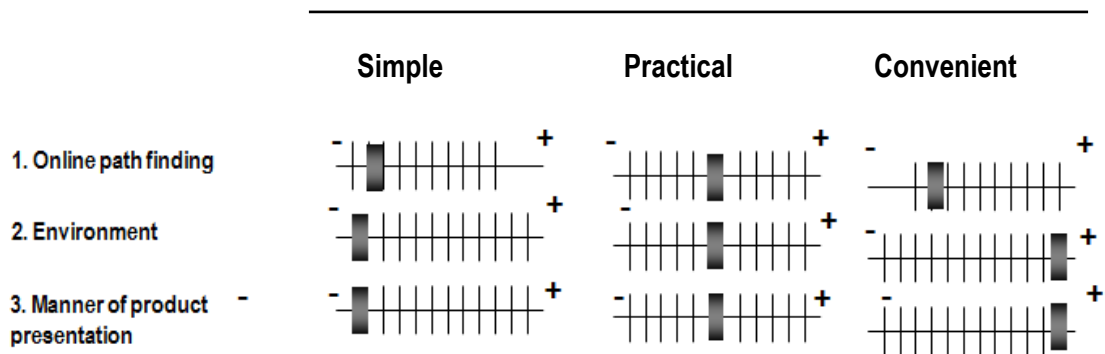
- Sitemap
- Search engine
- Presentation styles
- Atmospheric features

- Promotion signage
- Background color
- Text color
- Type of product view
- Product view presentation methods
- Product display methods
- Swatch
- Mix and Match
- and Registration

In order to enable easier and more compact visualization of the three types of online stores for fashion goods, the authors of this paper combine the elements into three main groups: Online path finding assistance (sitemap, search engine, presentation styles); Environment (Atmospheric features, promotion signage, color, background color, color surrounding product, text color); and manner of product presentation (Type of product view, product view presentation methods, product display methods, swatch, mix and match and registration).

Our method of cluster profiling is based on the idea that all clusters possess all these characteristics. The differences among clusters are sought from the point of view of the “degree” of the attributes (characteristics). For example some apparel websites include a rich product presentation (which is marked by “+” at Fig. 3). Other websites are relatively simple or poor from the point of view of the mane of product presentation (which is marked by “-“at Fig. 3). The same logic of cluster profiling is applied for the rest of the attributes.

**Figure 3 Classification of apparel websites (online stores)**



## **5. CONCLUSIONS AND FUTURE RESEARCH**

The present study attempts to provide a clearer guidance for online retailers of fashion goods in Bulgaria. The results of this study could provide useful information by giving a detailed list of visual merchandising's elements of apparel websites. This will help internet traders to adjust their online shops depending on regions and countries of residence of the target group of the style of clothing. This is especially important for companies offering products in several countries worldwide.

Our research is just the first step of a bigger project. Here we revealed the typology of apparel websites. The next step will be to conduct a survey and gather data about the specific requirements of Bulgarian online shoppers. The research design will include the application the method of conjoint analysis. This methodological approach is suitable for defining the optimal combination of visual merchandising elements from the point of view of Bulgarian consumers. The results of this stage of our research project will be published in a separate article.

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