

## A new and sustainable service to slow fashion brands

J. P. BERNARDES  
A. MARQUES

F. FERREIRA  
M. NOGUEIRA

### REZUMAT – ABSTRACT

#### Un nou serviciu sustenabil pentru încetinirea producției brandurilor de modă

*Această lucrare explorează crearea unui serviciu inovator de închiriere a îmbrăcăminte, inspirat din “mișcarea de încetinire a articolelor de modă”, care se concentrează asupra întrebării: “Sunt oamenii dispuși să poarte îmbrăcăminte second-hand și/sau închiriată atunci când călătoresc?”. Acesta este un serviciu de închiriere a îmbrăcăminte de zi cu zi, dar și a îmbrăcăminte business. Crearea și dezvoltarea acestui serviciu au fost posibile prin utilizarea unei metodologii de gândire a design-ului: cadrul de 9 etape al lui Kees Dorst. În ceea ce privește validarea sa, a fost realizat un chestionar cu 430 de răspunsuri. Lucrarea prezintă răspunsul pozitiv la această problemă.*

*Cuvinte-cheie: sustenabilitate, gândirea design-ului, mișcarea lentă a modei, închirierea îmbrăcăminte, călătorie*

#### A new and sustainable service to slow fashion brands

*This paper explores the creation of an innovative clothing rental service, that is inspired by the ‘slow fashion movement’, and that focuses on the question: “are people willing to use second-hand clothing and/or leased when travelling?”. This is a rental service for the day-to-day and also business clothing. The creation and development of this service was possible through the use of a design thinking methodology: the 9 steps framework by Kees Dorst. Regarding its validation, it was achieved with a questionnaire with 430 responses. The paper culminates with the positive response to the problem.*

*Keywords: sustainability, design thinking, slow fashion movement, clothing rental, travel*

### INTRODUCTION

Fashion is the way in which our clothes reflect and communicate our individual vision within society, linking us to time and space, and clothing is the material thing that gives fashion a contextual vision in society [1–2]. The fashion industry is evolving in a fast pace manner and presently witnessing situations of contradictions in consumer behavior: on one hand, consumers are becoming more conscious of the impact of their purchasing behavior, and willing to support a more sustainable fashion industry but on the other hand are complying with unsustainable business models where production is achieved to the lowest price in the shortest time possible. People say they want to become more sustainable but at the same time they cannot resist buying ‘cheap’ fashion. In fact, consumers’ attitude and behavior are in tune with fast production [3]. Figures from the UK show that people are buying more today than twelve years ago. According to Statista (2015) in 2005 consumer spending on clothing and footwear (in million GBP) was 44.4 M, and in 2015 was 66.1 M. [4].

Experts blame fast fashion as the reason for the dramatic expansion of our wardrobes [5]. Fast production and fast consumption inevitably lead to the systematic decrease of resources and increase of waste, thus stressing the earth’s capacity to regenerate at a natural pace. Guedes al (2017) state that the Portuguese clothing and textile companies have to prepare strategies to implement methods and processes

capable of improving the negative image of the sector in the society [6]. This is why the ‘slow fashion approach’ appears as a new model that intervenes as a revolutionary process in the contemporary world. It is focused on its link with human needs, awareness and responsibility. By using the concept of slow in the fashion industry not only in Portugal, but worldwide, it is possible to re-invigorate a healthy rhythm of production, meaning that the environment and people could healthily co-exist and the earth would have time to regenerate during production cycles [1]. While fast is the opposite of slow in language; in the context of slow culture; fast and slow are not in opposition. They are different worldviews, with different economic logics and business models, values, and processes [7]. If we continue to need ‘fast’ or at least inexpensive fashion, we have to ask how it can be made in an entirely environmentally acceptable way, throughout the whole life cycle [8]. The slow movement questions growth fashion’s emphasis on image, look, and ‘the new’ over making and maintaining actual material garments, re-finding earlier experiences of fashion linked to active making rather than watching [9–10]. McDonough and Braungart, in *Cradle-to-Cradle*, argue that creative sustainable design essentially means eliminating waste completely through the application of human ingenuity. Once a product has reached the end of its useful life in one form, it serves as the raw technical material, or biological nourishment, for another. That way, closed-loop industrial cycles will see recycling being

replaced by downcycling [11]. Fashion and sustainability wise, there are very real practical strategies that will enable designers to specify new environmentally friendly life cycles and inspire new business opportunities that attract consumers [8]. Consumers are an important part of the fashion system because they can create a valuable influence in the pursuit of sustainability in the fashion industry. Some companies start to be aware of this new framework and are preparing new competitive strategies to give to their new consumers innovative solutions [12]. There are several aspects to consider when analyzing fashion consumers and sustainability: the consumer knowledge about sustainability, consumer behavior and consumption habits and feelings associated with sustainable consumption. In fact, the attitude and the behavior of the younger generation are in line with the rapid fashion production. Encouraged by low prices and heavily influenced by marketing campaigns and constant changes of trends, consumers tend to speed up their fashion consumption [13]. The generation Y (Millennials) are defined as a group of people born more or less between 1980 and 2000 and their core values include confidence, loyalty to civic duty, sociability, morality, intelligence and diversity [14]. Millennials maintain a positive attitude in relation to sustainability in general. Young consumers are very aware of the opportunities that companies have to help the environment and reduce the ecological footprint. Also, this is a generation that thinks that it is the companies' duty to invest in a better environment and society by producing or selling products in a sustainable way.

## STATE OF THE ART

This research focuses on one main theme that is essential to the development of the service: design thinking that supports its creation and development.

### Design thinking

Design thinking is described as an interesting new paradigm regarding problem-solving solutions in many different occupations, mainly in the fields of technology (IT) and also business [15]. There isn't a consensual definition of design thinking because the definitions for this concept are very confusing [17]. These authors present disparity between the concepts of 'thinking of' (design), 'thinking about' (design), and 'thinking through' (design) and suggest that the most accurate definition brings together these three different perspectives. The eagerness to adopt and apply these design practices in other fields created a sudden demand for clear and definitive knowledge about the design thinking (including a clear definition). For Cooper, Junginger and Lockwood, design thinking (think through design) involves the ability to quickly visualize problems and concepts, the development of scenarios based on people, and the construction of business strategies based on designers' research methods [17]. Lockwood defines design thinking as being essentially a process of human-centred innovation that emphasizes the note, collaboration,

rapid learning, visualization ideas, a quick prototype of concepts and analysis of business competitors. Brown states that design thinking is about observing an unclear phenomenon and try to look at it away from conventional scenarios in order to preview future scenarios [16]. In this way, by using an appropriate business strategy, it is possible to turn customers' needs into value and create a market opportunity.

Kees Dorst describes a new approach, which focuses on problem-solving innovation in organizations that is called the creation of frames [18]. Dorst applies design thinking, but goes one step ahead of the tricks and techniques that regularly characterize it. Creating frames focuses on the ability to create new approaches to the analysis of the situation of the problem itself, and not only on creating solutions to problems. The strategies suggested by Kees Dorst are drawn through the consistent practices in several sophisticated and unique layers from top designers, and also through ideas that emerged from 50 years of research in Design [18]. Dorst describes nine steps in the process of creating frames and illustrates its application to real-world problems. It maps innovative solutions and provides tools and methods to implement the creation of frames, in other words, it is a way of thinking in design that helps professionals to develop their own approaches to problem solving and creating innovation along with the Design. This way it is possible to see companies as a series of frames: frames for resiliency, Kees Dorst [18]. The 9 steps are:

- 1 – Archaeology of the problem (why is it the problem? how did it become a problem? Why haven't been solved? who has this problem?);
- 2 – Paradox (what makes this problem difficult to solve?);
- 3 – Stakeholders (who are the stakeholders?);
- 4 – Problem Arena (what else is part of the problem?);
- 5 – Themes;
- 6 – Frames;
- 7 – Future;
- 8 – Transformations (what needs to change to be implemented?);
- 9 – Connections (how does it connect to the rest of the world?).

## RESEARCH METHODS

The main research goal of this paper is to analyse the feasibility of a service of this kind and realize its acceptance, in order to respond to the problem: "Are people willing to use second-hand clothing and/or leased when traveling?". The methodology adopted in this study (table 1) is based on a quantitative approach, resorting to a questionnaire technique.

Table 1

Specific objectives	Methodology
Creation of the service	9 steps framework
Validation of the service	Questionnaire

## TRAVELING NEVER FELT SO LIGHT

The proposition on this paper is an exciting new clothing service that respects slow fashion and points towards the promotion of sustainable lifestyles. The way it works is simple: different types of clothes and accessories from different brands can be rented, via online or via store, and then delivered at the desired location (e.g. hotel, resort, and company) or picked up at the store (figure 1). After they are used they return to be carefully and environmentally washed so they can be reused. Besides everyday clothes, it is a service that also provides suits and outfits for business trips, depending on the associated brands in the destination of choice. The idea behind this service is for the associated fashion brands to offer a new experience to their customers, a luggage free trip. Free of all the packing drama and everything around buying new and specific clothes for certain destinations. In sum, this is a service that gathers several brands, and works as a link between the brands and their customers. Besides offering a new fashion experience, the brands are also promoting a slow fashion approach, due to the constant circulation of clothes. After some research on the subject, the use of second-hand or rented clothes has not yet been given much thought in the way this service intends to act, so this is a problem that ends up becoming a business opportunity. At the time being, the only type of clothing that is possible to rent are carnival costumes and garments for specific events, usually parties and galas. Also, the differentiation would be in offering all kinds of clothes, with the possibility to also rent depending on the type of country (for example: snow clothes for the Nordic countries or beach wear for the hot/exotic countries). Still, the service offers the possibility of renting clothes for business trips. Promoting a new sharing economy and respecting the slow fashion movement, clients can drop off clothes in exchange for new clothes, and this way there is good circulation fomenting the reuse of clothes and experimentation. This way, looking for a collaborative economy can enter as a solution to the crisis we face today, since this is based on economic, social, technological and environmental pillars. And that is exactly what this new service promotes: an economy in which people are the focus, and the exchange of goods and services between themselves, in this case, clothing and accessories, contributes to a healthy growth, not only mind-set wise but also of economies. It should be noted that, in accordance with the results of the questionnaire people feel awkward in acquiring second-hand products. To overcome this constraint there are various complicated stages, among which raising awareness to solutions such as the proposed service. It is also necessary to ensure total cleanliness and quality of clothes, to try to minimize the stigma about the use of clothes already used by other people. The biggest obstacle to the use of this type of service is the doubt in the consumers' minds if the clothes are clean enough and ready to use without having to question its cleanliness. These problems

came up during the questionnaire, and were a very important insight for the development of the service.

### Design thinking: 9 steps framework by Kees Dorst

The section below presents the application of the 9 steps framework to the new service:

**1. Archaeology of the problem.** The research question became a problem from the time when the economic crisis in Portugal started. From that moment, there was a decrease in purchasing power, forcing people to direct their income for other less superfluous goods. It is a problem that was never solved because there is not yet a rental service that enables the customers to rent clothes for every occasion and not only for special events and that also promotes exchanging clothes for new clothes or store credit to be later used in renting. This is a philosophy that encourages a collaborative economy, by promoting sustainability values. The main holder of this problem is anyone who travels and/or that has true sustainability concerns, and as the questionnaire will show, the Millennials are the generation with the most worries about sustainability and that show a greater acceptance for these kinds of sharing services.

**2. Paradox.** According to the questionnaire results, this is a problem that is difficult to solve because people don't like the idea of using second hand clothes. They have doubts concerning its quality and cleanliness. This resistance to leased and/or used clothing is what makes this a complicated problem to solve.

**3. Stakeholders.** The interested parties are all the associated brands willing to be a part of this new fashion experience, the community in general (partnership with travel bloggers; and business partners as advertising agencies), institutions (airports, municipalities and national tourism departments) and lastly, all customers who are able to share the same vision, and thus join the service. Essentially, it is expected that the adhesion to this service is made mainly by people that are part of generation Y (also known as Millennials), that support and share a more collaborative vision.

**4. Problem arena.** Not all is about clothes, but education in a way. Another concern that is inherent in the problem is the luggage. The fact that tourists have to pack causes an inconvenience to the extent that they need to select the clothes they want to take, and later, the psychological cost of a potential loss of bag is quite high. With this service, the tourist's clothes are "safe and sound" at home, and they don't need to worry at all with luggage. It is only necessary to bring their essentials (hygiene). Also, by not bringing their clothes, they are offered the experience of trying clothes that they don't own, to step outside their comfort zone if they feel like it. That said, this is an ultimate fashion service that exists not only to facilitate the travelling moment but also to make it an unforgettable fashion moment, as it promotes sustainability and all the brands associated to it.

**5. Themes.** In this step the themes start to emerge, and they are the bases for new frames. In this case there are four major themes for the service to exist: clothes and accessories; Physical stores, Website and mobile application (figure 2).

**6. Frames.** The main frame is its motto: "Traveling never felt so light". This is because tourists don't need to take anything with them. On the other side, they bring home a baggage filled with great experiences and fashion moments that are only emotional and not physical. This is how this service wants to position themselves, because looking at the problem from this perspective, shows that being a part of this fashion experience serves to enrich and not only to facilitate the traveling moment.

**7. Future.** Nowadays society is more susceptible to a collaborative and sharing way of living, either in the sense of physical goods, experiences or information. This service is just one of the mechanisms of this collaborative economy, where people can share tastes, styles, goods, but, above all, experiences.

**8. Transformations.** This is the complicated step because in order for this service to succeed, the mentality of people when it comes to renting clothes that has already been used by third parties needs to change. For this to be possible a major campaign of demystification of the service needs to be in correctly done. With good communication, people can understand the advantages clearly. As will be shown by the questionnaire results, the question of hygiene and cleaning of the clothes is in fact a barrier and a huge resistance.

**9. Connections.** If this reaches the needs of the population in general, it has the potential of becoming a social collaboration tool. That way this model can be quickly replicated in other cities around the world, always respecting the way of dressing and the fashions of each culture and country.

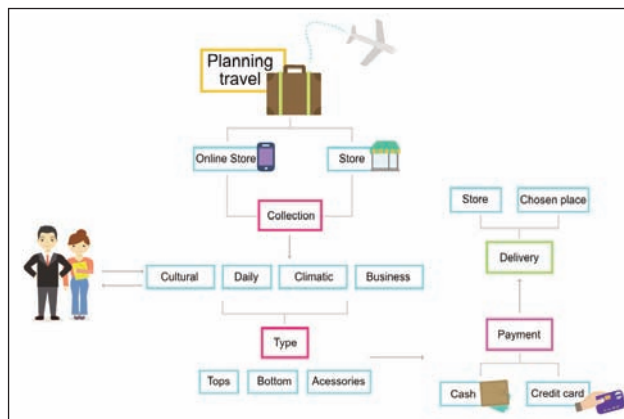


Fig. 1. How the service works

## RESULTS AND DISCUSSION

To allow an analysis of the feasibility and acceptability of a service like this, a questionnaire was conducted in two parts: the basic characterization of the respondents and the analysis of the feasibility and acceptability of the service. The questionnaire was completed by 430 individuals, and was applied via online. Demographically the majority of respondents are female, with a total of 273 responses, representing

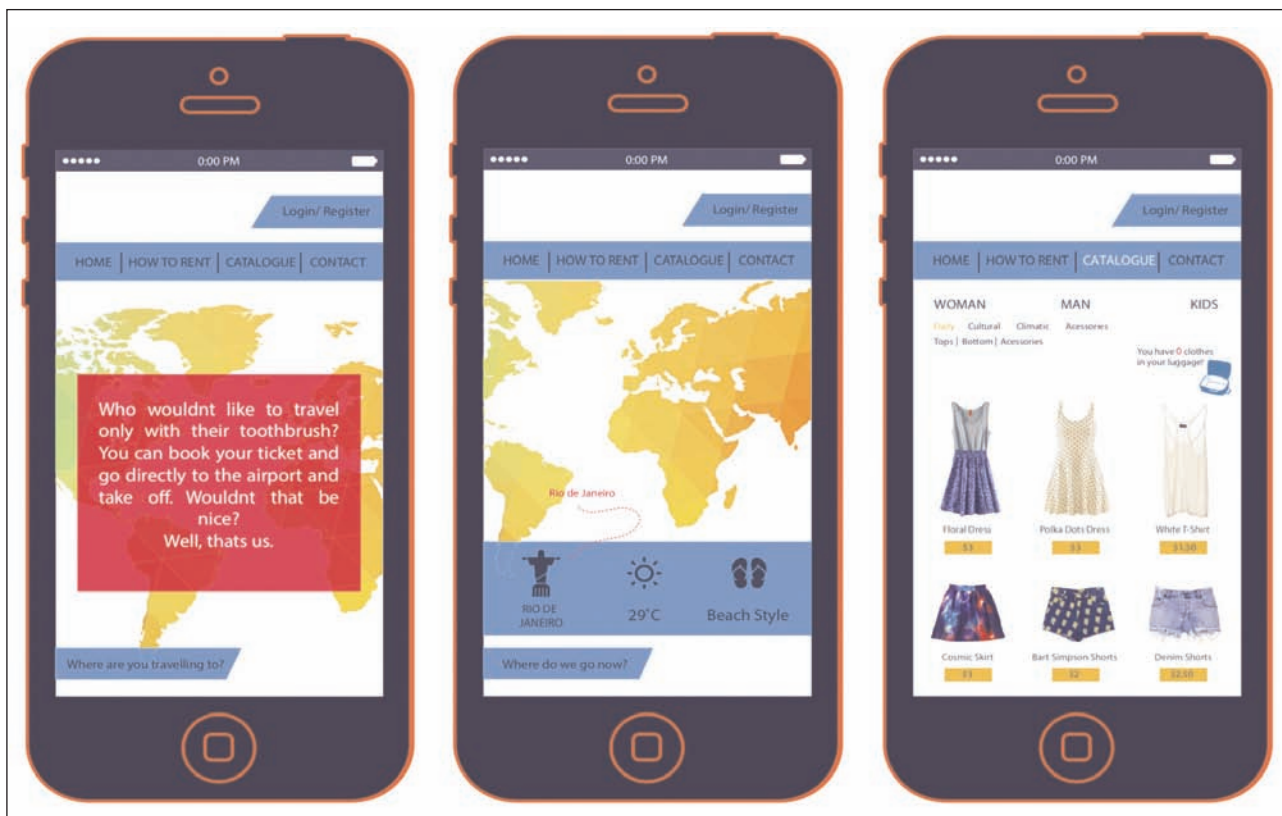


Fig. 2. App mockups

63.5%. The males represent 36.5% of the sample, making a total of 157 responses. Regarding their age, the majority focuses on the age group of 21 to 30 years, followed by the age group of 18 to 20 and 31 to 40. Therefore, the target audience, which are the respondents aged between 18 and 30 years (Millennials), represent 56% of the total responses. Regarding the district where the respondents live, the majority belongs to the District of Porto (40.5%) and Aveiro (30%). Although the questionnaire reached all districts of the country and Islands, the North of Portugal was the one that had a higher incidence of responses, making a total of 79.4% that translates in 341 individuals. The District of Lisbon also had a significant amount, resulting in a total of 48 responses (11.2%).

In terms of the analysis of the viability of the service, the respondents had to answer if they usually buy clothes to take on trips. The majority (60%) answered "Yes", and 40% who do not. This means that most people spend part of their budget on the purchase of new clothes for travelling, with the possibility of these clothes being seasonal and have little use after the trip. Respondents were also asked regarding the type of benefits they seek when purchasing clothes when they travel. Quality and price had the biggest response rate having 344 and 321, respectively. This means that there is a consistent demand for a product that has an excellent price-quality ratio.

The question "Do you consider using or have you used something borrowed or in second-hand?" was the most important for the validation and acceptability of the service. That way, 82.1% responded "Yes", i.e. 353 people responded positively. Only 77 of the respondents said they wouldn't use something used/borrowed. The respondents who answered "Yes" were then questioned regarding the type of borrowed or second-hand products they have used or would consider using. The responses "Clothing and accessories" and the "Educational materials" were the answers with higher incidence, having the first obtained 213 positive responses, and the second 221. It is possible to note that the respondents are willing to wear second-hand clothes and accessories. The respondents were then asked if when travelling to a place whose climate is quite different than what they are used to, if they usually buy clothes suitable for that particular climate. This way, 75.3% responded "Yes", i.e. 324 people claim to have bought clothes when they go traveling to a different climate country. This translates in an investment in clothing that is used only a few times since they are to be used in a very different climate. So, by renting clothes/accessories suitable for all climates, allows travellers to save money.

The next question is also one of the most important parts of the questionnaire, because it questions the respondents "Would you use rented or in second-hand clothes or accessories?". The response was very positive because 66.5% (286) of the respondents answered "Yes" and only 33.5% (144) replied "No". To those who responded "Yes" in the previous

question, a new question was applied trying to figure out for what purposes the clothes and accessories were/would be used. Clothes for "parties and events" and "Day to day clothes" achieved the highest number of responses, with 63.2% and 59.3% respectively. Therefore, and since this is a service that intends to focus on clothes for day to day, business and for special events, the answers are quite positive for the project. The number of responses is reflected in a strong acceptability in the use of this type of clothing. Those who answered "No" were able to justify their answer. Of the 144 negative answers, only 105 responded. Therefore, the majority of respondents does not use rented or in second-hand clothes because they "Don't like it" (37%), and because they believe that "It's not sanitary" (26%). Also, one of the predominant reasons that came up as an obstacle to the use of this type of clothing is the fact that travellers do "Not know the history of use of the clothes", with 21% of the responses.

Finally, and in order to figure out if the lack of hygiene and cleanliness is one of the eliminating factors to the use of second-hand and/or rented clothes and accessories, the respondents who replied "No" to the question "Would you use rented or in second-hand clothes or accessories?", were questioned if the quality and cleanliness of the clothes is guaranteed, if they would change their negative answer to a positive one. An astounding 39.5% of the 144 negative answers changed it. Therefore, only 87 of the 430 total respondents wouldn't wear second-hand clothes or accessories. That way it is possible to affirm that 343 of the total of 430 respondents would be in fact willing to wear clothes or accessories rented and/or in second-hand.

Similar conclusions were obtained in previous studies using the focus group methodologies. In this qualitative approach, all the participants of the focus group responded positively to the question "Have used or considered using something borrowed/used?", and referred as justification: the economic aspect because it allows saving by avoiding ongoing investments in new clothes and still be able to find different clothes, which encourages experimentation. Also, after the focus group it was perceived that this is an innovative service that will be very well received, as long as the partnerships are made intelligently and the quality and hygiene of the clothes is well communicated [19].

## CONCLUSIONS

This is a new and exciting service that is born to be a new way of promotion of a more sustainable society, encouraging different consumption habits and approaching fashion in a way that promotes a shift from fast to slow fashion, changing the way we consume clothes. The research problem was positively answered, showing that people are willing to use second-hand clothing and/or leased when traveling but only if the cleanliness and hygiene of the clothes are guaranteed, and all participants showed a high interest

in a service like this. However, the main limitation of this study is that the results from the analysed sample are 100% Portuguese, therefore it is not possible to extrapolate these results to other countries where this service would like to be present. Different market

studies are needed to a better assessment of the business, and also, different contacts with clothing brands must be made in order to understand their willingness to join a sustainable and more conscious way of being in the world.

## BIBLIOGRAPHY

- [1] Fletcher, K. *Sustainable fashion and textiles: design journeys*, In: London: Earth Scan, 2008.
- [2] Cataldi, C., Dickinson, M. and Grover, C. *Slow fashion: Tailoring a strategic approach towards sustainability*, In: Masters' thesis; Karlskrona, Sweden: School of Engineering, Blekinge Institute of Technology, 2010.
- [3] Morgan, L., and Birtwistle, G. *An investigation of young fashion consumers' disposal habits*. In: International Journal of Consumer Studies, 2009, vol. 33, pp. 190–198.
- [4] *Statista (2015) Expenditure on clothing and footwear in the UK*. In: Retrieved on March 2017. Website: <https://www.statista.com/statistics/289996/expenditure-on-clothing-and-footwear-in-the-united-kingdom-uk/>
- [5] Dirksen, K., *Fashion guide I: Slow fashion*, <http://faircompanies.com/news/view/fashion-guide-i-slow-fashion>, 2008.
- [6] Guedes, G., Ferreira, F., Urbano, L. and Marques, A. *Corporate social responsibility: competitiveness in the context of textile and fashion value chain*, In: Environmental Engineering and Management Journal, 2017, vol. 16, no. 5, pp. 1193–1202, ISSN: 1582-9596.
- [7] Fletcher, K. *Slow fashions: An invitation for Systems Change*. In: Fashion Practice, 2016, vol. 2, no. 2, pp. 259–266, DOI: 10.2752/175693810X12774625387594.
- [8] Blackburn, R.S. *Sustainable textiles: Life cycle and environmental impact* In: Cambridge: Woodhead Publishing Limited, ISBN 978-1-84569-453-1, 2009.
- [9] Clark, H. Slow fashion – An oxymoron or a promise for the future? In: Fashion Theory, 2009, vol. 12, no. 4, pp. 427–46.
- [10] Thorpe, A. *The Designer's Atlas of Sustainability*. In: Washington, DC: Island Press, 2007.
- [11] McDonough, W. and Braungart, M. *Cradle to cradle: Remaking the way we make things* In: New York: North Point Press, 2002, ISBN-13: 978-0-86547-587-8.
- [12] Marques, A., Guedes, D., and Ferreira, F. *Competitive strategies in fashion industries: Portuguese footwear industry*, In: IOP Conference Series: Material Science and Engineering, 2017, vol. 254, DOI: 10.1088/1757-899x/254/20/202006.
- [13] Birtwistle, G. and Moore, C.M. *Fashion adoption in the UK: A replication study*. In: Paper presented at the Anzmac Conference Brisbane CA, 2006.
- [14] Zemke, R. *Here come the millennials*, In: Training Magazine, 2001, vol. 38, no. 7, pp. 44–49.
- [15] Brooks, F. *The design of design: essays from a computer scientist*. In: NJ: Addison-Wesley Professional, 2010.
- [16] Martin, B. *Change by design: how design thinking transforms organizations and inspires innovation*. In: Harper Collins, New York, 2009.
- [17] Cooper, R., Junginger, S. and Lockwood, T. *Design thinking and design management: A research and practice perspective*. In: Design Management Review, 2006, vol. 20, no. 2, pp. 46–55, DOI: 10.1111/j.1948-7169.2009.00007.x
- [18] Dorst, K. *Design problems and design paradoxes*, In: Design Issues, 2006, vol. 22, no. 3, pp. 4–17.
- [19] Bernardes, J.P. and Nogueira, M. *OKG: creating and developing an innovative clothing service*, In: IOP Conf. Ser.: Mater. Sci. Eng., 2017, vol. 254, 212001, DOI:10.1088/1757-899X/254/21/212001.

### Authors:

J.P. BERNARDES<sup>1</sup>  
A. MARQUES<sup>1</sup>  
F. FERREIRA<sup>1</sup>  
M. NOGUEIRA<sup>2</sup>

<sup>1</sup>University of Minho, 2C2T, Textile Department, Campus de Azurém,  
4800-058, Guimarães, Portugal

<sup>2</sup>IPAM, IPAM Lab,  
Rua Manuel Pinto Azevedo, 748, 4100-320, Porto, Portugal

### Corresponding author:

J.P. BERNARDES  
e-mail: joapedro\_bernardes11@hotmail.com