Table 2 the percentage of three scenarios ("big", "equal" and "small") of three groups ("fitted", "regular", "loose") for each product. big: preferred size > theoretical size; equal: preferred size = theoretical size; small: the preferred size<theoretical.

	"adjusted" group			"regular" group			"loose" group		
	big	equal	small	big	equal	small	big	equal	small
P1*	26,3%	57,9%	15,8%	31,1%	47,3%	21,6%	70,0%	30,0%	0,0%
P2*	11,5%	69,2%	19,2%	42,6%	34,4%	23,0%	42,1%	52,6%	5,3%
P3*	20,0%	48,0%	32,0%	26,2%	48,8%	25,0%	48,8%	39,5%	11,6%
P4*	16,7%	50,0%	33,3%	22,7%	45,5%	31,8%	31,4%	40,0%	28,6%
P5*	9,7%	61,3%	29,0%	26,5%	44,1%	29,4%	33,3%	44,4%	22,2%
P6*	4,8%	61,9%	33,3%	22,1%	54,5%	23,4%	58,3%	41,7%	0,0%

* when p-value<0.05 between the "adjusted" group and "loose" group

Despite the effort of brands to harmonize all the products using the same sizing system, there is always a slight difference among products. It can be observed in table 2 that the percentages of having the same size between the theoretical one and real one are not the same. As discussed in the introduction section, this could be due to the difference in design intention, material elasticity and experience of pattern maker etc. Ignoring this would make a part of the return issue incompressible. It implies that one potential way to improve the effectiveness of size recommendation is to take into account the product information, like product dimensions of each size, design intention and material characteristics. These are generally existing, known information for brands. One future analysis of this study is to evaluate the effect of these mentioned product parameters and to explore the possibility of integrating these information into the size recommendation algorithm.

One of the main contributions of this study is to design a relatively large scale experimental study with 330 subjects to evaluate the effects of different types of information on the garments size selection: body morphology, personal preference and products information. The second contribution is to confirm the important effect of fit preference on size selection for online shopping in an experimental way. One of the main messages of this paper is to highlight the necessity to integrate preference information into recommendation algorithms to achieve better recommendation success and reduce return rate.

4. Conclusion

In this study, the effect of fit preference impact apparel size selection was explored in a controlled experimental way with a relatively big number of participants. It was shown that fit preference has a significant impact on the size choice. Independent from the body shape, the participants who declared preferring a loose fit have more chances to choose a bigger size than the theoretical size compared to the groups of "adjusted" and "regular" fit. The difference is even more important when it comes to the product with less elasticity, like a jacket. Future research is needed to explore how to integrate the preference information, and product related information into a garment size recommendation algorithm.

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