

USERS SELF-ASSESSMENT OF A DAILY MOISTURIZING OF THE SKIN, WITH NATURAL INGREDIENTS

Sarra Jelidi¹, Olívia R. Pereira², Paula Cabo^{2*}, Maria João Sousa²

¹School of Agriculture, Polytechnic Institute of Bragança, Campus of Santa Apolónia, Apartado 1172, 5301-855, Bragança, Portugal; sarrajelidi7@gmail.com;

²Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal; oliviapereira@ipb.pt; paulacabo@ipb.pt; joaos@ipb.pt;

*Correspondence: paulacabo@ipb.pt; Tel.: +351-273-303-200



Abstract

Nowadays, sustainability awareness is gaining relevance in the cosmetic sector. The increasing market trend in favour of green cosmetic products, which use ingredients from natural inputs, portrays the ecological and social weight of consumer choices when using products that contribute to nature in a sustainable way. This study aims to analyze the user self-assessment effectiveness of a cream formulation for daily moisturizing of the skin, with natural ingredients, including bee products, local plant material of the region of Trás-os-Montes, and vegetable oils. Twenty-two individuals aged between 24 and 74 years were included in the product's effectiveness study. The pre-use self-assessment shows that most of volunteers presented mixed skin type (at least three in five individuals). For dry skin individuals (one in five individuals), skin jerking and the rapid absorption of the products are the main issues. The assessment of product efficacy was measured based on a post-use questionnaire. The results obtained for non-placebo users demonstrate that the product exhibits positive performance for all the attributes under assessment. For products efficacy the highlight is for hydration and skin smoothness. For products attributes, ease of application scores the maximum of 3.3 points. Different, wrinkles reduction and fragrance present less favourable results. When asked about the willingness to buy the product only one in four users respond negatively, mainly because of the strong fragrance of the preservative agent product. Users willing to buy/recommending the product to a friend mention the satisfactory results obtained, hydration performance and natural product as the determinant for that decision. The users willing to buy the product consider to do it at an average price of 10€ for a 50ml package.

Introduction

Nowadays, sustainability awareness is gaining relevance in the cosmetic sector. The increasing market trend in favour of green cosmetic products, which use ingredients from natural inputs, portrays the ecological and social weight of consumer choices when using products that contribute to nature in a sustainable way. The natural cosmetics market can be an important opportunity for the valorization of the endogenous natural resources and creation of jobs in low-density, mountain regions, such as Trás-os-Montes.

Cosmetics Europe (2019) refers that European consumers spend, on average, 135€ per year purchasing cosmetic products. The increase in the life span and mindset changing open a new and profitable market segment for the cosmetic industry. As this trade association highlights, the literature review indicates that average annual spend on cosmetics increases by age, such that older consumers spend considerably more than their younger counterparts, e.g., European women over the age of 60 spend three times as much on skincare as women under 25 (Credit Suisse, 2013). In 2018, the European natural cosmetics market share was (valued at 3.6 billion €) of less than 5% of the European cosmetics market. However, this market is growing faster than the overall cosmetics market. Skincare is the most important product category, in which a wide range of products use natural ingredients. The leading country markets for natural personal care products are Germany, France, Italy, and the UK. These countries comprise almost 80% of the European natural and organic personal care products market (CBI, 2020). This study aims to analyze the user self-assessment effectiveness of a cream formulation for daily moisturizing of the skin, with natural ingredients, including bee products, local plant material of the region of Trás-os-Montes, and vegetable oils.

Methodology

The effectiveness of the product was verified through an online questionnaire addressed to the study volunteers after 15 days of using the product.

The recruitment of the volunteers for the user self-assessment test was based on the results of a questionnaire addressed the users of cosmetic products, administered by electronic means, in order to identify the profile and habits of using facial care products. The study was carried out through a self-administered questionnaire, previously structured according to the objectives of this study. The study were made with the informed consent of the respondents, ensuring all the constitutional values and rights of the individuals. Respondents were previously informed about the voluntary nature of their participation, about the research objectives. The information collected was treated in order to guarantee confidentiality and anonymity and the data exclusively used for the scope of this investigation. Data collection was carried out online, during the month of November, 2020.

Materials

Twenty-three individuals aged from 24 to 74 years were selected for the product's effectiveness study. Table 1, and Figures 1 to 3 present a brief description of the volunteers' socioeconomic and physical condition, lifestyles, and skincare profile. For skin type, most of the volunteers present mixed skin type (at least 3 in 5 individuals); for the 20% of dry skin volunteers, skin jerking and the rapid absorption of the products are the main issues. 30% of volunteers referred to have visible wrinkles (30%) or no wrinkles (26%). Elasticity indicators performed well for the great majority of them, while brightness proved to be their main concern.

Table 1: Study volunteers' socioeconomic and physical condition profile

Variable	Parameter	Frequencies	
		N	Percentage
Age	<25 years old	3	13%
	25-35 years old	6	26%
	35-45 years old	2	9%
	45-55 years old	5	22%
	>=55 years old	5	22%
Gender	Non response	2	9%
	Male	3	14%
Schooling	Female	19	86%
	Secondary School	1	4%
Marital Status	Degree or higher	20	87%
	Non response	2	9%
Professional Status	Single	12	52%
	Married or cohabiting	9	39%
Household Size	Separated / divorced	1	4%
	Non response	1	4%
Monthly Household Income	Students	9	41%
	Employed	12	55%
Body Mass Index	Retired / Pensioner	1	5%
	1 or 2 persons	6	26%
Skin problems or diseases	3 or 4 persons	3	13%
	5 or more persons	6	26%
Skin problems or diseases	Non response	8	35%
	Any less de 500 €	3	13%
Skin problems or diseases	500 to 1000 €	2	9%
	1000 to 3000 €	12	52%
Skin problems or diseases	3000€ or higher	4	17%
	Non response	2	9%
Skin problems or diseases	Healthy weight	14	61%
	Overweight	8	35%
Skin problems or diseases	Obese	1	4%
	Pigmentation	2	9%
Skin problems or diseases	Rosacea	1	4%
	Acne	3	13%
Skin problems or diseases	Atopic dermatitis	1	4%
	No skin problem	14	61%
Skin problems or diseases	Other	2	9%

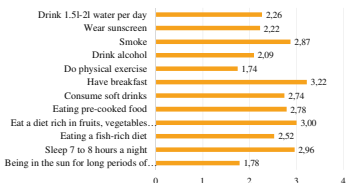


Figure 1: Score on healthy behaviors from the sample of volunteers (Positive behaviours: 1. Never or rarely; 2. Sometimes; 3. Often; 4. Always; Negative behaviours: 4. Never or rarely; 3. Sometimes; 2. Often; 1. Always))

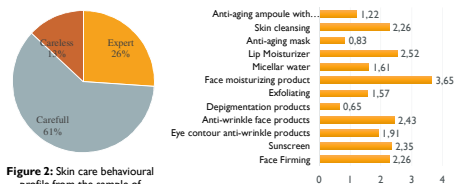


Figure 2: Skin care behavioral profile from the sample of volunteers

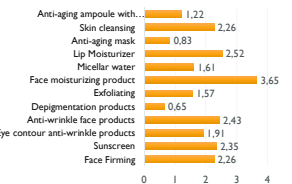


Figure 3: Score on habits of using facial cosmetic products from the sample of volunteers (0. Never; 1. 1 or 2 times a year; 2. 4 times a year; 3. 1 or 2 times a month; 4. 1 or 2 times a month or rarely; 5. Daily)

Results

The assessment of product efficacy was measured based on a questionnaire applied to the selected volunteer users. The twenty-two volunteers (one individual was unable to participate, due to logistic reasons) were asked to apply the product (Figure 4) at night, after face cleansing, for a two weeks' period.

None of the volunteers were excluded from the study, but 5 of them didn't comply with the minimum of week of using. The end study results include data from seventeen users, five of them being placebo users. The results obtained for non-placebo users in the assessments were presented in Figure 4 for each of the attributes.



Figure 4: Image of the samples of the moisturizing cream

The product exhibits positive performance (score superior to 2 points) for all the attributes under assess. For products efficacy the highlight is for hydration and skin smoothness. For products attributes, ease application scores the maximum of 3.3 points. Different, wrinkles reduction and fragrance present less favourable results.

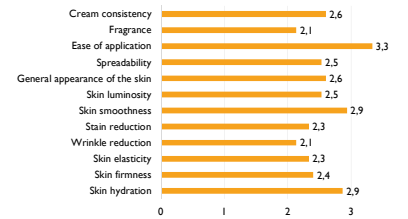


Figure 5: Results from consumers' satisfaction based on the self-assessment from the users' sample (0. Totally dissatisfied; 1. Dissatisfied; 2. Indifferent; 3. Satisfied; 4. Totally satisfied)

When asked about the willingness to buy the product (Figure 5) only one in four users respond negatively. The users willing to buy the product consider to do it at an average price of 10€ for a 50ml package (Figure 6).

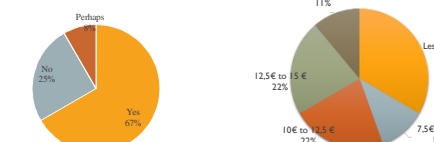


Figure 5: Willingness to buy the product tested of users

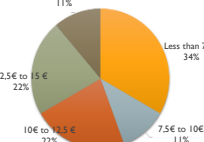


Figure 6: Willingness to pay for 50ml of product, in percentage of willing users

The main reasons for users willing to buy/recommending the product to a friend mentioned were the satisfactory results obtained, hydration performance and natural product as the determinant for that decision (Figure 7). Four users respond negatively, mainly because of the strong fragrance of the preservative agent product.

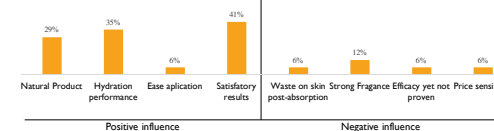


Figure 7: Determinant attributes on the recommendation/buying decision of the product, accordingly to the percentage of users

Conclusion

The present study analyzed the user self-assessment effectiveness of a cream formulation for daily moisturizing of the skin, with natural ingredients, including bee products, local plant material of the region of Trás-os-Montes, and vegetable oils. A volunteer group of users answered a questionnaire and the evaluation of their answers contributed to inform us about the cream's effectiveness and areas for improvement in the formulation. The results obtained demonstrate that the product exhibits positive performance for all the attributes under assessment. When asked about the willingness to buy the product only one in four users responds negatively, mainly because of the strong fragrance of the preservative agent product. Users willing to buy/recommending the product to a friend mention the satisfactory results obtained hydration performance and natural product as the determinant for that decision.

The next steps include the improvement of the cream formulation, namely its consistency and fragrance, and expand the size of users' group and the experimentation period in order to have more robust results. Plus, further analysis should be done to test for the influence of users' socioeconomic and physical condition, and purchase intentions. Literature shows that consumers' product attitudes and shopping behaviour are influenced by their health and environmental consciousness (Kim and Seock, 2009; Kim and Chung, 2011). Generally, people who strongly desire to maintain a youthful look and improve their appearance look for chemical-free personal care products. In the context of skin/hair care product purchases, consumers with high health consciousness may consider whether a product is safe for the skin and body; therefore they may be more seriously concerned with the types of ingredients used to make the product than the consumers with low health consciousness (Johri and Sahasakmontri, 1998).

Bibliography

CBI (2020). What is the demand for natural ingredients for cosmetics on the European market? Centre for the Promotion of Imports from developing countries, December 2020, 33p. Available in <https://www.cbi.eu/market-information/natural-ingredients-cosmetics/what-demand>.

Cosmetics Europe (2019). Socio-Economic Contribution of the European Cosmetics Industry, 44p. Available in https://www.cosmeticseurope.eu/files/4715/6023/8405/Socio-Economic_Contribution_of_the_European_Cosmetics_Industry_Report_2019.pdf

Credit Suisse (2013). Global Beauty Industry. Available in https://research-doc.credit-suisse.com/docView/language=ENG&source=emfomsendlink&format=PDF&document_id=1025509521&extdocid=1025509521_L_eng.pdf&serialid=xabsnH6scTaeDfMQXcNkDfT3SvddwD2yK32jWVTh4E%3d

Johri, L. M., Sahasakmontri, K. (1998). "Green marketing of cosmetics and toiletries in Thailand", Journal of Consumer Marketing, Vol. 15, No. 3, pp. 265-281.

Kim, H. Y., Cung, J. (2011). "Consumer purchase intention for organic personal care products", Journal of Consumer Marketing, Vol. 28, No. 1, pp. 40-47. 14.

Kim, S. K., Seock, Y. (2009). "Impacts of health and environmental consciousness on young female consumers' attitude towards and purchase of natural beauty products", International Journal of Consumer Studies, Vol. 33, No. 6, pp. 627-638.

Acknowledgements

The authors would like to thank the Foundation for Science and Technology (FCT, Portugal) and the ERDF under the PT2020 program for financial support to CIMO / AGR / 00690/2019.