Analysis Of The Factors Affecting The Women's Cosmetics Consumption In Terms Of Sustainability

Ercan BALDEMİR
Muğla University
Faculty of Economics and Administrative Science
Turkey
ebaldemir@hotmail.com

Funda KAYA
Muğla University
Faculty of Economics and Administrative Science
Turkey
fundaky@yahoo.com

Abstract: Women's effort to seem more beautiful may as older as the beginning of the history. Though "beauty" concept varies from culture to culture, the use of cosmetics became almost a global consumption behavior. The reason is that "beauty" products fulfill the inner desires, fantasies and dreams of women. In addition to the widespread use of the cosmetics by women, some of that kind of products causes various debates concerning sustainability because of the factors as non-natural, non-recyclable or tested on animals etc. Moreover a growing number of companies are looking to recognize the role of sustainability as an integral part of their marketing strategy. Therefore, the study aims at examining the factors, including alcohol, hypoallergenic and UV protection, which are expected to stimulate women's cosmetics consumption and the level of customer knowledge of women for cosmetics on the basis of logit regression model.

Key Words: Consumer Behavior, Sustainability, Women Cosmetics, Logit Regression Model

Introduction

Diversification of consumption customs increasingly is one of the most explicit outcomes of economic development and industrialization. As disposable income increases, the budget which individuals devote to their consumption increases; moreover, satisfaction and happiness come by consumption becomes dramatically significant in their lives (Hayta, 2009:145).

Besides, nowadays the relation between consumption and sustainability is often discussed. According to Schaefer (2005) sustainable development is perhaps the most significant and the most difficult problem currently facing marketing. Moreover, cosmetic industry is one of the most arguable fields in terms of sustainability. For example, during the nineteenth century, chemicals were used to replace more expensive natural ingredients making the cosmetics more widely used, but nowadays the health aspect of consumers is changing this trend involving an increased interest related to some factors as natural ingredients, skin protection, hypoallergenic and not tested on animals so on (Dimitrova et al., 2009:1155). Several companies, which pay attention to this trend, have developed advertising campaigns to project environmentally conscious corporate images and promote cosmetic products. Despite the fact the common assumption that marketing and sustainability are set for a head on collusion because marketing is about selling more while sustainability is about consuming less, these two concepts have something offer to each other (Chartered Institute of Marketing, 2007). Sustainable marketing which has been defined by Charter et al. (2006) as "creating, producing and delivering sustainable solutions with higher net sustainable value while continuously satisfying customers and other stakeholders" explains the offer between marketing and sustainability. As such marketing can be seen to recognize the key role of consumers as decision makers in moving towards sustainability, studying the current behavior of women consumers of cosmetics can provide important clues.

To increase sustainable patterns of consumption it is important to understand more about how consumers arrive at their purchasing decision (Jones et al., 2008:127). Therefore, this study aims at exploring the relation

between the demographic attributes of women respondents and the levels of their sustainable cosmetics consumption. With the data acquired from women consumers, some solutions are recommended for companies in order to make more sustainable marketing decisions.

Literature Review

Sustainable consumption has appeared in literature with the 21st agenda item, which is about sustainable development action plan, of World Summit carried out in Rio in 1992. As a result of Rio Summit, "to alter the consumption customs of individuals for ensuring the sustainable development and minimizing the damaging effects of human on ecology is a great struggle of human being" was concluded. To understand the factors affecting consumer behavior is a right starting point for ensuring sustainable development and consumption (Hayta, 2009:144-145). In this manner, the sustainable consumption substantially focuses on conscious consumer behavior. McDonald and Oates (2006) argue that it is easier to encourage sustainable buying behavior in fast moving consumer goods, such as cosmetics.

Cosmetics industry is one of the most discussed fields regarding ecology and sustainability (Prothero, 1995; Prothero, 1996; Johri and Sahasakmontri, 1998; Dimitrova et al., 2009). During the last years, the cosmetic industry has dramatically diversified its managerial and marketing orientation towards customer requirements due to the growth in response to the customer trends towards healthier lifestyle and requirements for natural cosmetics (Dimitrova et al., 2009:1156). Johri and Sahasakmontri (1998) found that many companies, foreign and national, have adopted programs to deploy technologies and market products that minimize the extent of environmental damage of cosmetics. For example, The Body Shop and Oriental Princess have adopted a wide range of policies and practices as part of sustainable marketing of cosmetics in Thailand (Johri and Sahasakmontri, 1998:278).

Customer knowledge level of the cosmetic consumers is one of the key factors affecting the sustainable consumption. Dimitrova et al. (2009) assumes customer knowledge management as an innovative approach, which studies both marketing tools and managerial practices, in order to achieve coordination between knowledge of the customers and the learning of the companies about a product, especially for cosmetics. The authors found natural aroma, high quality, hydration, skin protection, medical advice, long lasting, good promotion, hypoallergenic and not tested on animals are the most important motivating factors for the customers in Bulgaria, Montenegro and Italy in choosing cosmetics products (Dimitrova et al., 2009:1158). Furthermore, they agree that the customers are motivated to make use of successful united promotional mix for the ecological and sustainable cosmetics created by TV, internet and journals related to grooming products (Dimitrova et al., 2009:1164). According to Guthrie et al. (2008), a well-developed and established brand name is also a good motivator in the cosmetics industry.

The cosmetic products are criticized frequently regarding tests on animals. Although these kinds of tests are applied more on plant tissues, testing cosmetics on animals have not ended (Altug, 2009:61). Some cosmetic companies position themselves on this issue both to show how they act ecologically and to contribute for sustainable consumption. For example, Body Shop have declared that they have campaigned for years to bring about a ban on testing cosmetics on animals and declared that they are among the few companies to comply with the stringent requirements of the internationally recognized Humane Cosmetics Standard (http://www.thebodyshop-usa.com/beauty/against-animal-testing).

At the present time, many of the materials used in production are non returnable, but in recent years recycling economy have begun to take disposable economy's place and this substantially provides the minimization of pollution and energy utilization of society. Moreover, recyclable products will provide a base for the sustainable economy of future (Brown et al., 1998:47-50). To use recyclable materials and recyclable packages in the production process point to the green marketing. It is also possible to mention the green marketing of cosmetics. According to Johri and Sahasakmontri (1998), the Body Shop follows green marketing approach in its business policies and practices. All packaging is made of recycled materials, such as paper and plastic, demonstrates how the company is going green (Johri and Sahasakmontri, 1998:269).

As it is mentioned above, the cosmetic industry is so vulnerable to criticism regarding sustainability. Although marketing is often seen as the antithesis of the concept of sustainability in many ways, it is obvious that they can work for each other. The way of it is marketing sustainable cosmetics. To pursue sustainable marketing actions, the behavior of cosmetic consumers need to be analyzed.

Research Method

In the study, the proposed investigation of the cosmetic consumers' behavior and their sustainable consumption is based on the logit regression model, which modules different customer variables Xj (the set of

questions) with some principal data. The reason to use the logit model is that it is useful to sift out those important factors for the women consumers, which influence their sustainable consumption behavior and stimulate the increase of cosmetics purchasing. According to Koseva and Kaneva (2000), because of the specification of the variables with index (j), weak scales are needed to be used, of the so-called "significant numbering difference". This method is using literally based results or distinction, such as "yes" or "no". In this study, women respondents are kindly asked to distinct the factors affecting their cosmetics consumption as "I care" or "I do not care". Such a statistical methodology presents a part of a general evaluation of the factorial influence of different, and independent statistical scales, over their definitions. The main question of the study is:

RQ: How the demographic attributes (independent variables) of women cosmetic consumers are related to the factors (dependent variables) affecting sustainable consumption of them?

The universe of the study is the women consumers aged from 21 to 65 who are living in Mugla Province Center, totally 29.880 women (http://report.tuik.gov.tr/reports/rwservlet?adnksdb2=&report=turkiye_il_ilce_yasgr.RDF&p_il1=48&p_ilce1=1532 &p_kod=3&p_yil=2009&p_dil=1&desformat=html&ENVID=adnksdb2Env). The sample size of 21-65 aged women is determined by the formula below (Miran, 2003:142-143):

$$n = \frac{Np(1-p)}{(N-1)\sigma^2 + p(1-p)}$$

The sample size calculated: $\dfrac{29.880 * 0.5 * 0.5}{\left[(29.880 - 1) * (0.02551)^2\right] + \left[0.5 * (1 - 0.5)\right]} \cong 393$

To conduct logit regression model, 392 women respondents aged from 21 to 65 years are kindly requested to fill in the questionnaire provided which includes some items adopted from Dimitrova et al. (2009). The rest of the items were acquired from a focus group discussion carried out with women consumers of cosmetics. The reason for choosing 21-65 aged women consumers is that the assumption of this range falls into the majority period; moreover, there is no compromise among social scientists about the sub-periods related to age of human (http://www.e-psikoloji.com/forum/showthread.php?270-Yeti%FEkinlik-d%F6nemi).

Findings and Discussion

Table I identifies the demographics (age, occupation, educational level, marital status, income, living quarter) of the 392 women respondents.

Age	Freq.	Percent	Cum.
21-29	176	44.90	44.90
30-39	104	26.53	71.43
40-49	71	18.11	89.54
50-59	32	8.16	97.70
60-65	9	2.30	100.00
Occupation	**Freq.**	**Percent**	**Cum.**
Retired	26	6.63	6.63
Worker	24	6.12	12.76
Officer	132	33.67	46.43
Housewife	55	14.03	60.46
Self-employed	51	13.01	73.47
Student	68	17.35	90.82
Private Sector	36	9.18	100.00
Educational Level	**Freq.**	**Percent**	**Cum.**
Primary School	42	10.71	10.71
High School	110	28.06	38.78
Bachelor	200	51.02	89.80
Postgraduate	40	10.20	100.00
Marital Status	**Freq.**	**Percent**	**Cum.**
Married	226	57.65	57.65
Single	166	42.35	100.00
Income	**Freq.**	**Percent**	**Cum.**
0-1000 TL	166	42.35	42.35
1000-2000 TL	163	41.58	83.93
2000-over TL	63	16.07	100.00
Living Quarter	**Freq.**	**Percent**	**Cum.**
Urban	222	56.63	56.63
Rural	170	43.37	100.00

Table I: The demographic attributes of women respondents

As it is shown in Table I; 21-29 aged, officer, bachelor degree, married, 1000-2000 TL income and city dweller women constitute the majority of respondents in the study.

The demographics of women respondents are analyzed based on logit regression in terms of cosmetics including alcohol as the dependent variable in the equation, Table II is reached. According to logit model likelihood statistics, R-squared, which shows the explanatory power of the model, is found 0.0332. Ozer (2004) states that R-squared statistics ranges between 0-1, and R-squared in this range has enough power to explain the factor (at Table II. cosmetics including alcohol).

Factor I	Coef.	Std.Err.	z	P>|z|	(95% Conf. Interval)	
Bachelor	.3630314	.2761627	1.31	0.189	.9043003	.1782374
Postgraduate	.66131	.4128811	1.60	0.109	1.470542	.147922
30-39	.6948538	.3098879	2.24	0.025	.0874847	1.302223
40-49	.645027	.3667354	1.76	0.079	-.0737613	1.363815
Private Sector	.9483088	.6348338	1.49	0.135	-.2959426	2.19256
Constant	1.215664	.2449706	4.96	0.000	.7355305	1.695798

Table II: The relation between demographics of respondents between cosmetics including alcohol

By examining the data obtained, the model that clarifies the observations best is chosen as a final logit model in terms of cosmetics including alcohol. Table II shows that bachelor and postgraduate degree, 30-49 aged, working in private sector women form the best logit model regarding cosmetics including alcohol. The probability of bachelor and postgraduate women's notice about alcohol-include cosmetics respectively 0.36 and 0.66 more compared to others (primary and high school degree women). It is possible to say that mid-age women (30-49) notice alcohol-include cosmetics respectively 0.69 and 0.64 more than the young and old cosmetic consumers. The women working in private sector cares cosmetics whether to include alcohol possibly 0.94 more than the other groups as retirees, officers, workers, and students so on.

Factor II	Coef.	Std.Err.	z	P>|z|	(95% Conf. Interval)	
Bachelor	1.138652	.5843049	1.95	0.051	-.0065646	2.283868
Urban	.8702247	.5594443	1.56	0.120	-.226266	1.966715
Student	.8161036	.6261938	1.30	0.192	-2.043421	.4112137
Single	.8161036 -1.619258	.7563434	-2.14	0.032	-3.101663	-.1368516
Constant	3.571052	.6234572	5.73	0.000	2.349098	4.793006

Table III: The relation between demographics of respondents between hypoallergenic cosmetics

As it is shown at Table III, bachelor degree, single students whose living quarter is urban is found significant regarding hypoallergenic cosmetics. Having bachelor degree is significant at 0.05 levels and 1.13 more probable to notice hypoallergenic cosmetics than other educational levels. The students with a significance level of 0.19 are 0.81 more probable to notice while consuming hypoallergenic cosmetics. In this point, this can be concluded that the students are more concerned about their facial image because as Craik (1993) argues cosmetics assist one in completing an overall look. Moreover, marital status shows a negative relation between notice of hypoallergenic cosmetics even if it is significant at 0.03 level.

Factor III	Coef.	Std.Err.	z	P>|z|	(95% Conf. Interval)	
Postgraduate	.950704	1.074508	1.88	0.176	-1.155293	3.056701
Urban	.7638016	.4801071	1.59	0.112	-.177191	1.704794
Student	1.1595	.7028292	1.65	0.099	-.2180197	2.53702
Housewife	-1.005884	.7311068	-1.38	0.169	-2.438827	.4270594
2000-over	1.286201	1.052996	1.22	0.122	-.7776329	3.350035
Constant	3.166364	.5431155	5.83	0.000	2.101877	4.230851

Table IV. The relation between demographics of respondents between UV protection cosmetics

Table IV indicates the demographics as educational level, living quarter, occupation and income constitutes a significant logit model regarding UV protection cosmetics. Postgraduate women consumers notice cosmetics to have UV protection 0.95 more probably than other educational degrees with 0.17 significance level. This is an expected result because the customer knowledge of cosmetics consumers should increase as educational level increases. Furthermore, the probability of city-dweller women to consume UV protection cosmetics at 0.11 significance level is 0.76 more than women who live in rural. As in the logit model of Factor II, students are 1.15 more probable than others to consume cosmetics with UV protection. In contrast to the student respondents, the probability of housewives is 1 less than the other groups with significance level of 0.16. As the price of UV protection cosmetics tend to be more than those are not, women consumers whose income is 2000 and above are 1.28 more probable the other income groups where the significance level is calculated 0.122.

In addition to the cosmetics including alcohol, hypoallergenic cosmetics and UV protection, data obtained from women respondents regarding the cosmetics tested on animals and recyclable cosmetics, but significant logit models cannot be reached. This result may indicate that respondents with different demographics do not notice these sustainable attributes of cosmetics while making decisions.

Conclusion

Cosmetic industry is a growing market not only for women consumers but also men. Besides the huge growing rates of the industry year to year, the debates about sustainable consumption, which deals with the damages of human on ecology and the health of their own, and marketing of cosmetic products continue.

In the study, three sustainable factors (including alcohol, hypoallergenic and UV protection) are examined based on logit regression model. The relations between these factors and demographics of women respondents are calculated to show how different groups behave sustainable in consumption of cosmetics. To learn to what extent cosmetic consumers behave sustainable gives important clues for developing better sustainable marketing strategies for companies.

The limitation of the study arises from generalizing the cosmetic products in one category. Normally, the cosmetics mostly refers to make-up segment, but cosmetic products includes some sub-segments like baby care, bath and shower products, deodorants, hair care, oral hygiene, fragrances so on. Therefore, analysis of factors affecting the sustainable consumption for each cosmetic segment separately is needed. Despite the cosmetics mainly refer to women consumers; there is a growing market of men's cosmetics. For this reason, the future studies are needed to examine men consumers of cosmetics regarding sustainable consumption.

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