

**INCLINATION TOWARDS THE PURCHASE OF GREEN COSMETICS: THE  
ROLE OF HEALTH AND BEAUTY CONSCIOUSNESS IN DETERMINING  
CONSISTENT BUYING AMONG WOMEN IN SIVAGANGA DISTRICT****Rajalakshmi. M\***

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**ABSTRACT**

As the concept of health maintenance and environmental consciousness had become a high necessity to safeguard mankind, promoting green products usage and consumption is a demand of this hour. Cosmetic industry is one among the sector that picked up the pace of development and exposed a sustainable progress in Indian Context. Owing to this scenario, the magnitude of green cosmetics is more behind the ideal one for the security primitives in environment and consumers. The market witnesses a novel trend wherein the consumers shifts from purchasing habits of chemical-based cosmetics towards organic cosmetics, due to its huge benefits to health and environment. For achieving this pious goal, it is utmost required to identify the determinants insisting the user to opt towards green cosmetics products, thus could be ventilated towards masses to extend the base of consumers for green products. The present research is exploratory and empirical in nature, and examines the determinants influencing the purchasing behaviours of consumers towards green cosmetics and their consistency. Simultaneously the different local brands entering into the market of green cosmetics and certain barriers such as cost, availability and so on of green cosmetics the necessity to maintain the consistency in purchasing growth of green cosmetics and brand loyalty in competitive market is essential. The study is put forth to fulfil this objective, through quantitative analysis gathered from the perception of 150 cosmetic users (women population) from Sivagangai district, Tamilnadu through semi-structured questionnaire distribution. The outcomes of research explores the basic association, of determinants of green cosmetics, beauty, health conscious factors, hurdles to buy, brand loyalty and sustainability in purchasing decision of respondents using statistical method through SPSS 20.0 version.

**Keywords:**

Green cosmetics, consistency, determinants, Sivagangai District, health, purchasing behaviour.

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**I. INTRODUCTION**

Generally, “Green cosmetics” referred as the part of cosmetic industry, which utilises environmentally-friendly production practices, formulations and associate methods of packaging for making cosmetic products. A cosmetic could be assumed truly to be “green” only if the cosmetic consists of active ingredients obtained or extracted from plants, inclusive of minerals, not like the active ingredients, been reproduced in laboratory. These products were manufactured in sustainable environmental way. The bacterial sources and renewables plants are used as the active ingredients by exhibiting low toxicity and transparent practices in production. Those green cosmetics paves its contribution to reduce the ecological effects on environment and minimize the undesired impacts of chemical ingredients such as synthetic surfactants including drying alcohols, essential oils, silicones, fragrances, dyes, synthetic sunscreens and parabens have upon the health.

Consumers had commenced to realise the harmful consequences of conventional cosmetics, on environment and skin layers due to because there prevails the dramatic shift in buying intention of the customers. As green cosmetics ingredients were all the natural resources like almond oil, castor oil, aloe vera oil, argan oil, coconut oil, olive oil etc., there is no any harmful effects upon the health, since those natural ingredients comprises of anti-oxidants that are mostly the anti-inflammatory, anti-aging, anti-allergic, anti-bacterial, and so on. Hence the

necessity for the availability natural products, seems rocketing higher. Hence the manufacturers were to take up a peculiar step towards green in order to sustain the pace and have sustainability on business.

In recent days, there stands an increasing needs for herbal medicine, herbal cosmetics and natural food globally. This arrived as reaction to broad utilisation of medicines, chemical dyes, derivatives, cosmetics and synthetic food. The usage and production of those products in the past two hundred years had caused different side effects that lead to different diseases. There arises the growing demand for those homemade formula for manufactured products as herbal cosmetics to maintain and to enhance the human beauty[1]. This necessity had rise because of lack of side effects and skin friendliness. Examples of herbs such as Turmeric, avocado, natural oils, Sandalwood and henna applied to offer the defined cosmetic advantages like body care, face care, eye care, hair care.

The increase in by concerning towards environment, and knowledge and awareness on environmental problems had impacted the requirement for high sustainable and harmless products[2]. It had turned out a trend that pressures many brands and firms in implementation of sustainable objectives in business model, in order to stay competitive amidst market[3]. In this cosmetic stream, the essentiality for green cosmetics, had been growing with 5.50% rise of market share of global cosmetics, in the year of 2018, in comparison to the past years[4]. The utilisation of cosmetics evolved since long time, as the Egyptian rule, utilising health, hygiene and other components[5].

The term cosmetics defines the products, applied to external body parts to change and enhance the appearance. This comprises of products including for skin, lips, nails, hair and more. The cosmetic products ranges from fragrance, personal care and to makeup. This fills out in the part of daily routine of consumer and their necessity. In case of green cosmetics, it primarily concentrates upon the positive environmental effects, sustainable development and environmental commitment in green products productions. This includes of environmental campaigns, ingredients and packaging and so on all green initiatives[6].

The consumer behaviour that exposes the sequence of emotional, mental and physical activity performed by human to select, use, purchasing, goods disposal, services and decision to fulfil the demands. The most predominant determinants which impact the consumer behaviour were the personal preferences, purchasing capability, Economic conditions of marketing campaigns and group influences. Hence to learn the consumer behaviour is significant to aid the non-profit organisations and other firms in forecasting the future consumer behaviour. The research goals are two-fold. The study applies conceptual model on the basis of Theory of planned-behaviour (TPB) to examine and find out the association among the constructs to explain and recognise the engagement and acceptance towards the green cosmetics.

### **1.1. Revolution of Green cosmetics and Consumer preferences**

Green cosmetic, presently gained more popularity, even though there is yet certain lack in awareness and knowledge among the people towards those green products, specifically in developing nations. In recent days, many female consumers opting towards the direction of eco-friendly products. Hence one of a research by explored the intention in purchasing the eco-friendly products by female consumers in Jordan. These purchasing intention has impact of three specific brand-equity dimensions such as brand loyalty, perceived quality and brand awareness. A quantitative method adopted to gain the appropriate information needed for research. The research comprises of one hundred and seven female consumers, who are in age limit of 20 and above that. The collection of data accomplished through online questionnaire, distributed on various platforms of social media. SPSS software package utilise to assess the data collected. The outcomes exhibited that all the antecedent variables possess significant impact on other consequent variables, with purchasing intention of consumer to have high mean value. The inferences of the research would furnish assistance eventually towards future and also present cosmetics manufacturers, to boost sales process and in enhancing the business performance whilst keeping a pace with nation evolving to go green[7].

Many customers opts this green cosmetics that are environmentally friendly, beauty products, creams to have hope that it may not yields any harmful impacts towards health primitives and minimize the pollution. Moreover to this, repeated mini-lock down in the period of COVID-19 pandemic, had fuelled awareness which beauty consciousness associated to the well-being of human beings both internal and external factors. The outcomes implies that the consumer preferences for make-up seems to get decline, whilst the preferences towards skin-care products gradually increases. The Nutricosmetics, that integrates advantages obtained from cosmetic treatment and food supplementation to enhance the beauty responds towards the demands of new market. The cosmetic industry and chemistry travel together in the promotion of outside and inside well-being. The nutricosmetic optimizes nutritional micro-elements intake to meet out the demands of skin and appendages, to reduce the ageing factor for consumers, health conditions improvisation hence aid in skin protection from environmental factors.

Numerous researchers in literature exposes a significant association between adequate supplement intake, enhanced skin-quality (both aesthetic and histological) and to accelerate wound healing. One such research revised the bio-active molecules and main foods utilized in nutricosmetic formulations, their analytic approaches and cosmetic impacts which permit the active ingredients dosage in food[8].

To consider this, the research, focusses to shed light on determinants, affecting the green purchase behaviour of consumers in Malaysia. More particularly, the goal of the research relies in investigating the impact of hedonic and altruistic values and mediating consequence of pro-environmental and personal norm beliefs towards the purchase of green products. The outcomes of the research enable policy makers, marketers and managers in executing the green strategy that will boost the green purchasing behaviour of consumers towards cosmetic-products. Inferences of the study explicated that hedonic value possess positive and significant impact upon the pro-environmental belief[9]. It is also determined that this pro-environmental belief positively influences the personal norms, and as leading to that personal norms have effect on the green purchasing-behaviour.

### **1.2. Theoretical framework**

Theory of planned behaviour (TPB) were acknowledged widely and employed as theoretical model in understanding and to identify the consumer's behavioural intentions. This is accomplished through using certain factors of subjective norm, perceived behavioural control and attitude of customers[10]. The extant literatures, had utilised this model of TPB to investigated and envisage consumers intention in broad variety of pro-environment and green areas including organic personal-care products[11], sustainable food, green products and green areas. Hence it proves the applicability and robustness of framework[12]. In accordance to researcher sun and others, the readiness as green constitutes the significant factors such as conscientiousness, openness and extraversion that predicts the intention of buyers ultimately towards purchase of green products[13]. Various researchers also emphasized that with using those green cosmetics, stands as life-style to treat themselves and environment with high respect[14].

Vaithinathan and Taufique applied this TPB to predict the natural products' purchasing intentions[15]. The outcomes delineated that predictors of TPS are important in association towards purchasing intention specifically the attitude of consumers to the environment impacting positively and directly the behavioural attitude. Further to this the TPB has been used in research upon organic products to pick out the antecedents of sustainable products among young individuals, residing in Belgium. The outcomes of the research deliberated that TPB, offered approximately fifty percentage of variance to explain the purchasing intention of customers[16].

Similar to this different researcher applied this model of TPB to assess this parameter of consumer intention, that reveals that attitude and subjective norms to bring out the variance in this intention. Further to this, it is recommended that in perception of cultural settings, cognitive parameters were to be embraced to estimate the purchasing behaviour of green products through using modified TPB framework[17].

### **1.3. Problem statement**

The focus upon green cosmetics seems crucial since it minimize the negative effects on environment and in health of living organisms[18]. The sustainable approach is highly familiar and employed in certain developed nation in comparison to developing countries. This could be because of variations in awareness level and environmental knowledge of the consumers. In the year 2021, many developing nations, turned out to more conscious on environmental impacts and does investment in sustainable progress with green plans and initiatives from NGO and government for encouraging sustainable consumption[19]. The Malaysian Government had implemented 20 percentage costs upon plastic bags to minimize the disposal of plastic bags. The Initiatives from NGO, businesses and Government would support in order to maximize the awareness of environmental issues. Owing to this, other side the consumers themselves, also pose more concern and became more conscious regarding their purchasing products that had direct influence on health as well. Most of customers, attempted to involve in purchase more sustainable, organic and natural products to lessen the negative environmental and health impacts.

There is lacking in research specifically to focus on consumption of green cosmetic globally and their determinants. Most of previous researchers perceive towards sustainable food-consumption or organic foods. The previous studies focussed on different context like in Malaysia and some western countries. As the outcomes, the implications may not be applicable and generalizable towards Malaysian context. Some research looked at theory of planned behaviour[20] or norm activation theory[21] perspectives and may encourage future studies to explicate more theoretical perceptions. Another research by were the first in exploring the association of components of brand equity, purchasing intentions of green cosmetics and sustainable brand trust in Malaysian context. Along with such it is capable to offer the inference from varying theoretical perspective, however the research must address the practical gaps as well. On the basis of theoretical background and literature, the research

attempts to analyse the inclination or the preference towards green cosmetics, with respect to beauty and health consciousness of women population in Sivagangai district.

#### **1.4. Paper organisation**

Section I presents the introductory section of study. The assessment and outcomes of different literature related to research idea represented in section II. The research method is described in section III. Section IV elucidated the results. Further discussion and conclusive statements are enumerated in section V and Section VI.

## **II. REVIEW OF LITERATURE**

### **2.1. Concerns towards directing Green cosmetics**

The concern towards Environment are shown by the snowballing number of consumers. This results in moving onto green market by business firms and investigating about consumers' outlook towards the purchase of organic products. Eco friendly products are acquiring more popularity than the ordinary products because of cognizance that spread among consumers about their health and also significant in protecting the environment. Moreover consumers are even ready to pay premium amount for the organic products. To maintain young look and enrich their appearance, eco-friendly consumers are seeking chemical free personal health care organic products. Because organic products are made either with negligible amount of chemical substances or completely natural substances.

S. Akter and M.S. Islam examined the behaviour of green consumers by examining the women's behaviour with the purpose of determining the factor which stimulus their purchasing attitudes towards organic cosmetics in Sweden [22]. The research is based on the revised Theory of Planed Behaviour (TPB) which explains with the gathered primary data which has collected through online review of 220 women who in live Sweden. The consumers' behaviour towards purchasing organic products have optimistic effect on purchase intention which are proven through previous studies. Besides, this research had found out that education of individual and their income has an optimistic relationship with behaviour and intention on purchasing in future. In a research perspective, the purchasing intention towards organic cosmetics started to seek attention exclusively, since now, there is an imbalance between increasing usage of cosmetic products and limited research for this type of products. The green cosmetics products are huge which includes fragrances, mousses or styling gel, personal care product and make up or colour. Hence, it is significant to assume the different kinds of green-cosmetics, whilst assessing the major determinants of those products. Therefore, the work reviewed the researchers upon purchasing behaviour of green cosmetics, and developed the model to analyse the determinants of purchasing intention of personal care-products, styling products and make-up products[23].

Its known that, a vital role has been played by social media in enhancing the satisfaction of customer, as it influences a primary phases of alternate assessment, changing the opinion of customer, purchase choice as well as information search. Therefore, the deep awareness about the influence of social media in selecting herbal cosmetics over organic will help in gaining unique stance in shared market for non-profit organisation, health care centre and pharmaceutical companies. With an aim of reducing the side effects and enhance the customers' health related to organic products, social media widely spread the awareness of significant usage of herbal products over chemical synthetic. Therefore, economic loss caused due to lack of understanding in the market have been reduced.

The fascination towards Herbal cosmetics are rising globally as a homemade formula or product because of its safety. The motive of contemporary research is to find the role of social media towards herbal cosmetics regarding the health behaviour of customers. The results found out that social media has a vital role in changing the desire of using herbal products over organic products which has been approved by 61.33% of samples. Further, it revealed that herbal products are chosen for its safety by the people of Jorden. The results also states that social media influencer has huge role in the effects of desire change. In Jorden, to advertise the herbal product, a unique ways has been used to drive people into herbal cosmetics by inviting influencers from social media[24].

### **2.2. Health and Beauty constructs and norms in different sites in opting and moving a fringe towards green cosmetics**

The increase of public concerns about the utilisation of hazardous chemicals as ingredients in cosmetic products and emergence of ethical concerns boosts the market of organic cosmetics. The global revenue in 2018 on organic cosmetics, were deliberated as USD 13.30 billion as per grand View research[25]. In accordance to Company Kline, Skin care and cosmetics are predicted as dollar 33 billion, that accounts for thirteen percentage of entire global beauty-market. This has been estimated to hit to 50 million after 2020. One such research by Ueno and Franca conducted a first and foremost step to address the problems. The goal of study is in assessing the state of

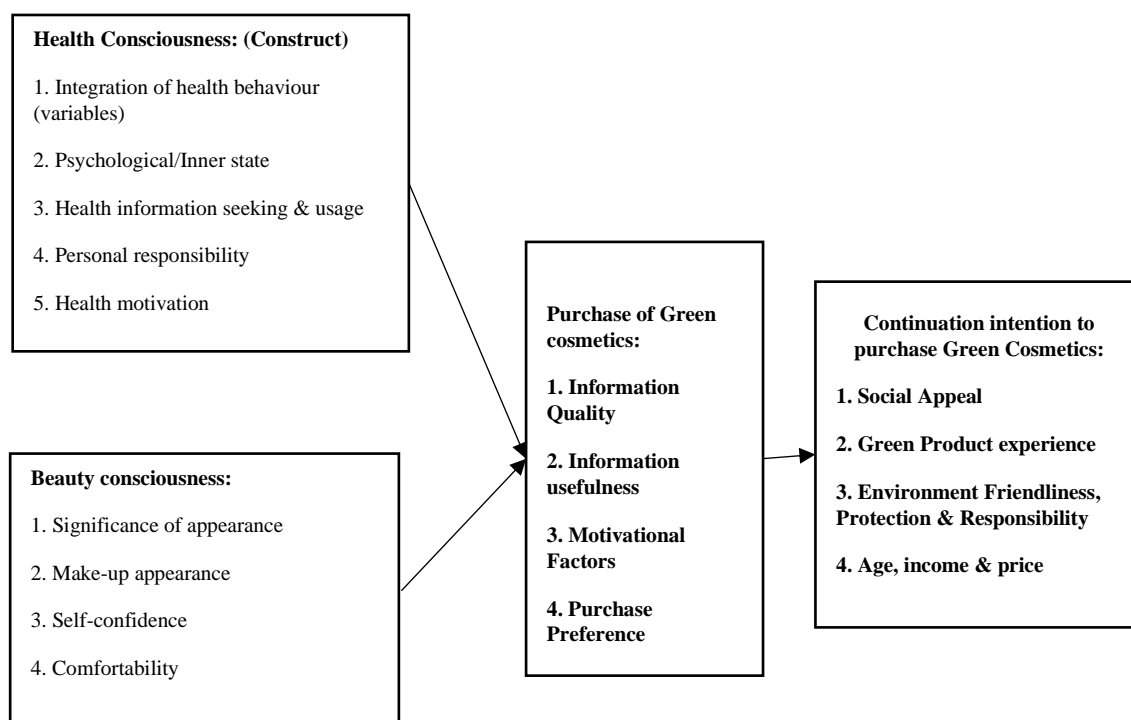
art of green-cosmetics, to focus on risk assessment, regulatory assessment and conceptual analysis limitation and different perspectives of those products in Green chemistry context[26].

Many chemicals such as bio-active compounds were characterized by environmental persistence, bio-accumulation hence exerting a prominent risk to eco-system health and human health. Therefore the indiscriminate cosmetic consumption might pave a looming challenge to the adverse effects upon public health. Another review by Iqbal, Mehmood and Bilal intended to shed light on the present overview of used ingredients in the formulation of cosmetics including formaldehyde, sunscreen products, parabens, 1,4-dioxane, triclosan, plastic microbeads, diazolidinyl urea and in tracing metals. Specific concentration provided in enumerating the biological challenges of those substances upon aquatic system and human health in accordance to neurotoxicity, cytotoxicity estrogenicity, genotoxicity and mutagenicity[27].

To increase awareness regarding the concerns and environmental sustainability across health had causes the increasing willingness to focus on high cost for those environmental-friendly products. But also there leave the large gap associated towards those green cosmetics, which is caused lacking in efficient communication. The firms must have consistent focus to fix those gaps through making utilisation of integrated channels for marketing[28].

Another research by Salim and Khan focused firmly on the green personal-care products which were manufactured out of green ingredients, three primary aspects which are forming the sales towards green cosmetic-industry with association with purchase preferences, (THC) Tendency to health-consciousness and motivational factors are analysed. The women-population are categorised under three main sectors such as non-working women, college students and working women. Developing nations and developed nations possess various legislative control upon the cosmetic products and their cosmetics items usage of ingredients. This factors would impacts the mobility adversely from one level of market to other market and thrives as inability in the sales process over the nations.

The cost gets increases because of legal restrictions towards varying quality test, formulation, package etc., When each of cosmetic industry continuous to work on formulation and on the basis requirement that would not cause damage towards environment. The improvised inclination over globe in green-cosmetic industry seems to get rise as part of present life-style and an essentiality in daily life[29].



*Figure 1. Conceptual Design*



**2.3. Purchasing behavioural context of consumers in green cosmetics**

A research by Ming Man and Shimul examined the consumer behaviour of customers through assessing the attitude towards purchasing behaviour in cosmetics products. The research relies on the basis of TPB elucidated with primary data using online survey assessment, of two hundred and twenty women living in Sweden. The inferences showed that income and education possess positive association with future purchase-intention and attitude of consumers. As the outcomes, the brand-image also exhibit positive relationship with purchase intention of green cosmetics and sustainable trust of brand[30].

Similarly the purchasing intentions are also influenced through different factors like corporate social-responsibility (CSR), intrinsic cues and extrinsic cues. The brand image, CSR and perceived quality were implemented in exploring the effects on purchasing behaviour of green-cosmetics [31]. In order to revisit the purchasing intention of customers in those eco-friendly items, specifically the green cosmetics, an empirical study persuaded tests out the conceptual framework. One such research by Shimul derived the literature from the literature associated with ecological motive environmental knowledge and health consciousness against the dependent parameters of attitude of consumers (female population) towards green cosmetics purchasing intention. The inferences recommended that the practitioners must attempt to improvise the involvement and knowledge of consumers about the green cosmetics. The organisation must educate and inform the consumers using different integrated communication marketing channels through means of public-relations, advertisement and campaigns[20].

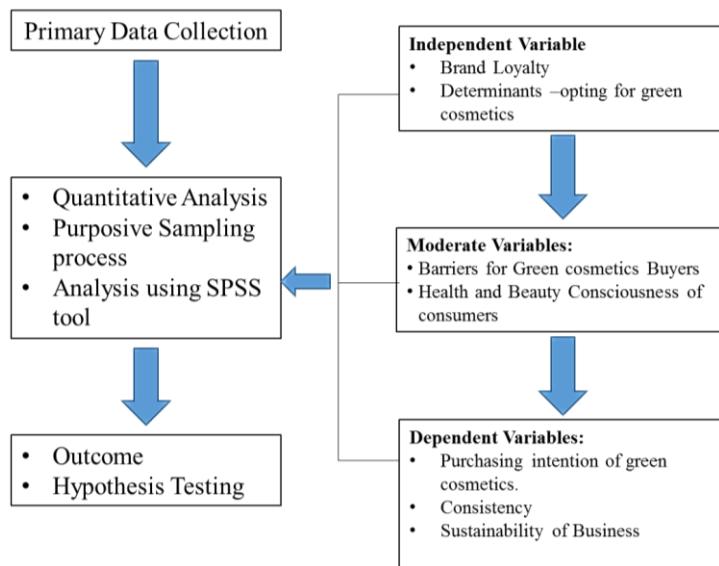
**III. RESEARCH METHODOLOGY**

Research methodology is a means of clarifying how an investigator proposes to convey out their study. It's an organised, analytical strategy to give a solution for the research problem. The methodology part of a study specifies an Investigator's technique to the research to guarantee consistent and effective results that discourse their intentions and purposes

**3.1. Research Design**

This research is used to examine the determinants of the consumers paving path towards the purchasing intention of green cosmetics among the women population in Sivagangai District. The association of health and beauty consciousness of the population and the consistency in the purchasing intention towards green cosmetics are explored in the study. The hypothesis are framed based on the theoretical framework and literature studies. The study proceeds with descriptive and empirical approach.

The impact and effectiveness of determinants of consumers towards green cosmetics, and its association with purchasing behaviour of respondents were studied through the semi-structured questionnaire. The questionnaire was developed based on the objectives of the study. The demography of the target population was also observed and their corresponding responses were analysed to bring out exploratory data assessment. The study chosen brand loyalty status and the determinants opting towards green cosmetics impacting the purchasing behaviour as independent variable. The consistency and purchasing behaviour of consumers affecting organisation were taken as dependent variables of the study. These study variables are significant to categorize the data collected through the questionnaire. These variables were used in the hypothesis testing of the research. The primary data collection was made through the Semi-structured questionnaire. Purposive-sampling technique is followed in Quantitative analysis. The collected data were enumerated and evaluated through excel and SPSS software. These evaluated data were statistically analysed with methods like ANOVA, regression and correlation tests. The results were evaluated and discussed. Thus, the overall research framework is comprehensively presented in Figure.1 below

*Figure 2. Study Design***3.2. Research objectives**

- To examine the statistical difference on age, educational qualification and income level with attitude of women towards green cosmetic products
- To determine significant factors influencing the consistent purchase of green cosmetics among women in Sivagangai district
- To examine the relationship between health and beauty consciousness with purchase intention towards organic cosmetics
- To investigate the relationship between brand loyalty and persistent buying of organic cosmetics?

**3.3. Research questions**

- What are the significant determinants impacting the purchasing intention towards green cosmetics?
- Is there any relationship between health and beauty consciousness attitude of respondents with purchase intention towards organic cosmetics?
- How is the brand loyalty of green cosmetics associated with consistency state of purchasing behaviour of organic cosmetics?

**3.4. Research hypothesis**

**H<sub>10</sub>:** The determinants of the respondents has significant impact with purchasing intention of them towards green cosmetics.

**H<sub>11</sub>:** The determinants of the respondents does not significant impact with purchasing intention of them towards green cosmetics.

**H<sub>20</sub>:** There is a significant association between brand loyalty of green cosmetics influencing the consistency or sustainability in purchasing intention of those organic cosmetics.

**H<sub>21</sub>:** There is no significant association between brand loyalty of green cosmetics influencing the consistency or sustainability in purchasing intention of those organic cosmetics

**3.5. Target population**

The study population identified from Sivagangai District in Tamilnadu. The targeted population are the women population, who have more preferences towards cosmetics buying, working in different sectors and domains. The determinants to opt for particular type of cosmetics, their consciousness factors that drive for their buying behaviour were all gained from this target population. The target population chosen, must be able to provide responses and be aware on these perspectives.

**3.6. Sample size**

The study population was not narrowed and was generalized. Hence, a total of 150 participants have registered their response to the questionnaire. As mentioned, the respondents who are the customers/users of different categories of cosmetics were chosen for this survey assessment. However, all the individual respondents had the awareness about both chemical cosmetics, chemical synthetic cosmetics and green cosmetic.

### **3.7. Sampling method**

The participants of the survey are irrespective of their age, gender, educational qualification, income and occupation. After the data required for the analysis is collected, the questionnaires are categorized base on the dependent, independent and moderating variables. The method adopted in this research for selecting the repliers is Purposive sampling method. By applying the purposive sampling technique the researcher's knowledge will get enhanced in terms of selecting the target audience without any diverse. The present study utilizes the purposive sampling method carried out in the primary data sources. This is a sort of non-probability sampling approach in which the researcher decides who must be incorporated or obtained as the sample on the basis of unique characteristics like capability or the expertise in the specific research topic and willingness to involve in the research [32].

The samples under this purposive sampling-approach are the different customers, who are using cosmetics and make up products. Customers are informed to pose their responses chosen selectively, to the survey questionnaire from consumer's perspective.

### **3.8. Research instrument**

The Research Instrument has been denoted as a tool that has utilized to measure, analyze and collect data based on the proposed research interests. The Semi-structured questionnaire was a research tool featuring with a sequences of questions employed to accumulate valuable statistics from respondents. These tools were specifically efficient in measuring subject behaviour, intentions, opinions, preferences and attitudes. Their use of closed ended research questions enabled the researchers to attain both quantitative data, fallouts in wide-ranging of outcome

### **3.9. Data collection**

The data required to perform the analysis of the study is presented through a questionnaire. The questionnaire is developed based on the objectives and study variables. The targeted population are provided with the questionnaire and the data is collected. The researcher reviewed and verified the responses to each questionnaire for its completeness.

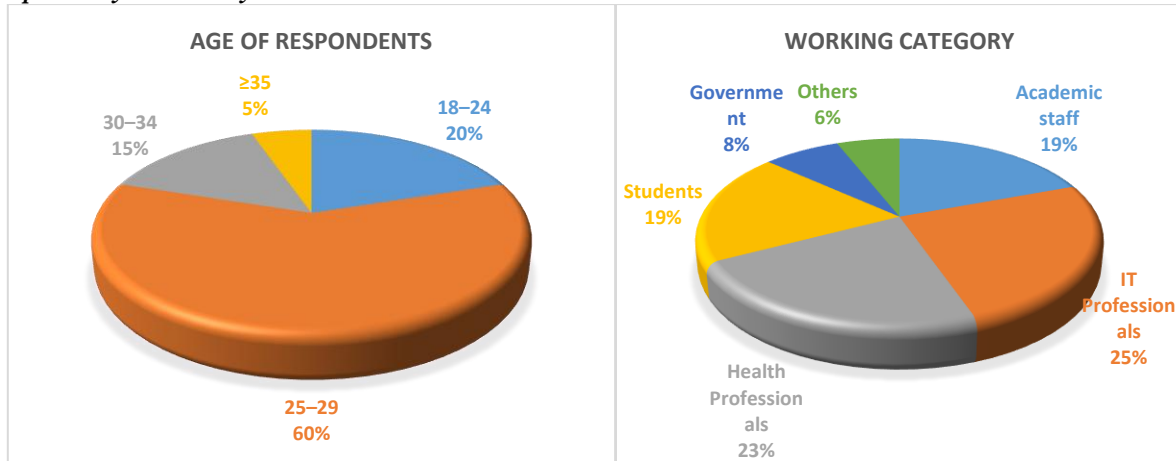
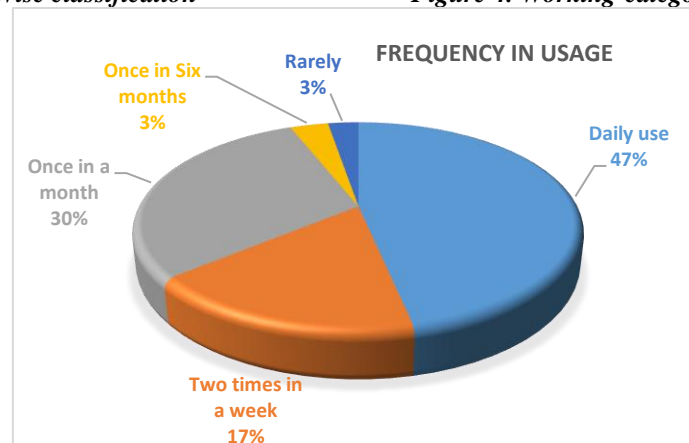
### **3.10. Data analysis**

The collected data is converted to a worksheet format for simplicity of analysis. The quantitative analysis of the collected data is performed based on the statistical approach. For this purpose, the Statistical Package for Social Sciences (SPSS) software package is used. The demography of the respondents is studied through graphical representation of the data presented in the worksheet. The survey questionnaire is encoded to corresponding factors and given as input to the SPSS software. The software performs the analysis based on the study variables and provides the outcome of the study. The input variable of the study are analysed through three different approaches, namely one-way ANOVA, regression and correlation

### **3.11. Ethical concerns**

In a research aspect, the ethical consideration is known to be the collection of principles that paves a way in helping to carry out the entire study and research with appropriate design section and practices. These can be either of an informed consent or a voluntary participation and results communication. Some of the ethical considerations include environmental responsibility, discrimination, disclosure of a corporate, espionage and any forms of harassment. A research ensure to have much of possibility in facing some of ethical concerns such as confidentiality and anonymity. Also, the capability of the particular researcher also plays a vital role in the ethical concern on a respective research or a study. This respective research is much devoted and are more applicable to practical ethical concern and practices.



**IV. RESULTS AND DISCUSSIONS***Exploratory Data analysis***Figure 3. Age-Wise classification****Figure 4. Working-category of respondents****Figure 5. Frequency in using Green cosmetics**

The above figures 3, 4 and 5, illustrates the distribution of respondents of the study with respect to Age factor, frequency in how far green cosmetics is used and the working category of the population. The higher count of population were indulged from women population working in IT sector (25%), second category of population accompanied by 23% by health professionals. It could be seen that IT Sector women population and health professionals were keen in using green cosmetics due to their health benefits. Other sector population participated less in this research. The frequency how the green cosmetics are used, differs, with respective to the preference given by the respondents towards green cosmetics. Nearly 47% of population, buy this green cosmetics, for daily use purposes and 30 percentage of population purchase this green cosmetics for once in a month. It can be taken that increase in frequency to purchase this green cosmetics, for daily use and often intervals may be due to their health consciousness and beauty consciousness attitude of the respondents. Similarly the age group of respondents maximum participated by profile within 25 years to 29 years girls only. The involvement in using green cosmetics and sharing the opinion of the role of green cosmetics, were provided by respondents within the age group 25-29 years old.

**One-way Anova**

The first section of the data analysis explicates the statistical test performed on the responses gained from the customer preference perspective. The One-way anova test is explored to examine if the different levels or the variations of independent factor possess a measurable impact on the dependent variable.

**Independent variable:** Green cosmetics can be recommended for enhancing the beauty without side effects

**Table 1. ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
Chemical free, health improvisation and beauty improvisation makes customers to opt again and again only to Green cosmetics	Between Groups	24.103	2	12.052	8.494	.000
	Within Groups	208.570	147	1.419		
	Total	232.673	149			
Effective results tends to purchase green cosmetics	Between Groups	12.337	2	6.168	5.601	.005
	Within Groups	161.903	147	1.101		
	Total	174.240	149			

The above table 1 enumerated the One-way Anova result among the independent variable recommendation opinion of green cosmetics to other users to enhance the beauty of the consumers without any side effects to have impact on the dependent variables. The significance value of test seems to be 0.000 and 0.005 (less than p value) indicated that the dependent variables are the sustainability of green cosmetic products in market to opt again and again for the users because of chemical-free, beauty improvisation and health consciousness determinant to have dependency on this brand loyalty of green cosmetics. These dependent parameters relies on the recommendation of organic cosmetics brand to other consumers without side effects.

**Partial correlation Test****Table 3. Partial correlation test**

Control Variables			Price sensitivity-green product is likely to be more expensive	Green cosmetics gives permanent results to skin complexion	Can be used for Daily purposes due to nil sideeffects
Chemical free, health improvisation and beauty improvisation makes customers to opt again and again only to Green cosmetics & Green cosmetics can be recommended for enhancing the beauty without side effects	Price sensitivity-green product is likely to be more expensive	Correlation	1.000	.132	.788
		Significance (2-tailed)	.	.011	.000
		df	0	146	146
	Green cosmetics gives permanent results to skin complexion	Correlation	.132	1.000	.160
		Significance (2-tailed)	.011	.	.052
		df	146	0	146
	Can be used for Daily purposes due to nil sideeffects	Correlation	.788	.160	1.000
		Significance (2-tailed)	.000	.052	.
		df	146	146	0

Partial correlation, defines as the measure of strength and the direction of linear-relationship among the continuous variables, whilst having control for the impact of other continuous variables (referred as control variable or co-variate). Partial correlation test in the above table 3 has significance value as 0.011, 0.000 and 0.052 less than 0.05, implies that there exists a strength and direction of linear relationship among those mentioned above

variables by control variables. The significance value of test, indicates that variables price sensitivity, permanent results features and daily purpose usage of green cosmetics by having controlling impact by consistency of the purchasing intention of the consumer to buy again and again due to its chemical-free ingredients, beauty improvisation factors and without side effects. This clearly indicates the relationship of price sensitivity (barrier in buying intention), health consciousness to go for daily usage without side effects and beauty consciousness attitude with Consistency in opting the purchasing of green cosmetics.

#### Regression Test

**Table 4. Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.884 <sup>a</sup>	.782	.782	4.524

a. Predictors: (Constant), Green cosmetics can be recommended for enhancing the beauty without side effects, The green cosmetics products gains concerns and gives quality in brand for right customers

The R square value in the above table 4, indicates the 78.2% of probability the predictor variable that has its relationship on the opinion of dependent variable.

**Table 5. ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.407	2	1.703	1.466	.023 <sup>b</sup>
	Residual	170.833	147	1.162		
	Total	174.240	149			

a. Dependent Variable: Effective results tends to purchase green cosmetics

b. Predictors: (Constant), Green cosmetics can be recommended for enhancing the beauty without side effects, The green cosmetics products gains concerns and gives quality in brand for right customers

The above table 5 enumerates the anova test for the regression test. The significance value 0.023 in anova test, exposes the prevalence of relationship among the predictor and dependent variable. The above table 5 elucidates the regression test, to assess the degree of probability of the predictor variable it has its impact on the dependent variable. The outcomes, deliberates the prevalence of relationship among the predictor variable recommendation opinion(sustainability in purchasing decision) and brand loyalty to give quality-wise and nil side effects of green cosmetics product to enhance beauty to have impact with the dependent variable purchasing intention of customers.

**Table 6. Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.280	.283		4.523	.000
	The green cosmetics products gains concerns and gives quality in brand for right customers	.054	.100	.044	.541	.005
	Green cosmetics can be recommended for enhancing the beauty without side effects	.180	.113	.130	1.594	.001

a. Dependent Variable: Effective results tends to purchase green cosmetics

The significance value in regression test brings out 0.000, .005 and .001, lesser than value, hence this proves the prevalence of positive relationship of respondent's opinion in recommendation (consistency in health and beauty

benefits)of green cosmetics to enhance beauty and brand loyalty to give quality product possess prediction capability to have changes with the dependent variable purchasing intention of customers to buy more.

**Table 7. Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Green cosmetic for Body protection	Equal variances assumed	18.017	.000	1.984	148	.049	.193	.097	.001	.386
	Equal variances not assumed			3.896	118.000	.000	.193	.050	.095	.292
Less knowledge and late permanent results about green cosmetic	Equal variances assumed	.531	.046	1.888	148	.061	-.357	.189	-.731	.017
	Equal variances not assumed			1.934	48.381	.059	-.357	.185	-.728	.014
Chemical free, health improvisation and beauty improvisation makes customers to opt again and again only to Green cosmetics	Equal variances assumed	316.057	.000	15.765	148	.000	-2.435	.154	-2.740	-2.130
	Equal variances not assumed			8.979	31.178	.000	-2.435	.271	-2.988	-1.882

Independent T sample test does the comparison of the means of the independent groups, and the outcomes of significance value, reveals out if there prevails the statistical significant variations in the mean values in two independent groups. This t test also defined as the parametric test.

The significance value for this independent T-sample test, are deliberated and it shows that the significance values are all lesser than 0.04,  $p < 0.05$ . these outcomes, exposed that the mean values of the variables body protection feature by green cosmetics, lacking in knowledge awareness(barrier) and permanent results of green cosmetics to give better complexion and the sustainability/consistency in the purchasing intention of the consumer towards green cosmetics, of the health-care professionals opinions, seems to be statistical significantly different to the mean value of the same variables of population groups under other department professionals. The mean variance of the determinant Beauty improvisation, health-consciousness attitude and consistency in green cosmetics, to have impact on purchasing behaviour outcomes of respondents between statement of health-care respondents, seems to be different to the non-health care respondents

**V. CONCLUSION AND FUTURE WORKS**

The research explicated based upon primary data obtained using semi-structured questionnaire administered to those 150 women population working in different sectors such health, corporate, IT, government and other streams. Different factors such as beautification, permanent results, personality maintenance, body protection, price sensitivity, availability, brand awareness influencing to buy green cosmetics products were identified. Exploratory data analysis propounded the frequency statistics of demographic attributes of the respondents and daily usage preferences. The significance of association of those barriers to avail green cosmetics and impacting determinants with the purchasing intention of the respondents are deliberated through statistical tests. The implications of research would aid organisation to determine a significant factors that leads to high acceptability of green cosmetics, in competitive market more particularly in Sivagangai, and to pursue correction actions for overcoming the barriers standing to block the purchase of green products. More efficient promotional campaigns must be undertaken to elucidate the green cosmetics positive effects targeting entire geographies commencing from urban regions to rural regions. High efforts must be afforded whilst consumers holds out ambivalent attitude in buying green cosmetics. The future researches must be encouraged in creation and in developing novel constructs to reflect the marketing revolution better and community lifestyle changes. The propensity of customers to the innovative solution and co-creation opportunities by marketers, and enthusiastic brand affiliation must be followed to increase the green consumers count and to minimize the environmental degradation, with healthy mankind.

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