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Psychology

SUNSCREEN PURCHASES: A PSYCHOLOGICAL ANALYSIS OF DECISION-MAKING PROCESS

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ABSTRACT Effective marketing strategies require understanding of the psychological variables in consumer decision-making processes, particularly in industries catering to skincare products for marketing products as per individual customer needs with a focus on sustainability. Studies provide evidence that psychological factors, societal pressure and the physical burden of looking good influences consumer behavior. Furthermore, theories in social psychology hint influence of endorsement and association to a particular product/ brand influences decision making process. This study explores the influence of underlying psychological and personality factors during sunscreen purchase and planned consumers' practice to sun safety measures. We framed 44 statements to address psychological and personality factors such as persuasion, motivation, perception, and association with association as a reflection to personality factors in a semi-structured interview format and data was collected from 275 young adult participants. Results suggested awareness, brand consciousness and psychological factors to significantly impact sunscreen purchase decisions. Interestingly, 'association' as a psychological factor seemed to emerge as a primary influencer as compared to persuasion, motivation & perception. Analysis between age and gender was found significant for association as a good psychological predictor and extraversion as a personality factor to influence in sunscreen purchase decisions.

KEYWORDS : sunscreen use, persuasion, motivation, perception, association, extraversion

INTRODUCTION

Studies in India reported increased incidence of skin cancers (23,143 male and 17, 286 female cases) reported every year (Labani et al. 2021); possible increase in cases of skin disorders/ diseases/ cancer (Saraiya et al. 2004); and head, face, and neck as the most affected areas (Lal et al. 2016). Increasing temperature and Global warming provided markets an opportunity to create a sunscreen as a product for consumers with as a protective feature to excessive sun exposure (Rodrigues et al. 2017).

Sunscreen usage in India seems to be inconsistent owing to attitudes, and misconceptions of the effects of using cosmetics overtime (Agarwal et al. 2018; Diehl et al. 2021) with age and gender reflecting older adults to be more sensitive to sunscreen use (Glanz et al. 2022).

Furthermore, social psychological theories posit social conformity and authoritative endorsements to highly influence consumer decisions that may be understood in consumer behavior (Asch 1956; Milgram 1963) and other psychological factors such as 1. Motivation to maintain skin tone as a strong predictor of sunscreen use (Hafez et al. 2024); 2. perception about a product reflected one's experience, observational learning, awareness through social media and other resources (Yakup and Diyarbakirlioglu 2011) and 3. personality factors (Badgaiyan and Verma 2014) seemed to play a significant role in an individual's decision-making process.

Gender studies on sun exposure report men's skin to be safer and equipped with UV-induced immune suppression that reduces the risk of skin problems (Alkallas et al. 2020; Liu-Smith et al. 2017).and income to be an important predictor (Roberts et al. 2021) for sunscreen use in men, while it becomes an important routine in women (Holman et al. 2015) because the physical burden of looking pretty (Hassan et al. 2009; Kim and Lee 2018; Strahan et al. 2006). A study by Turrissi et al. (1999) reported a significant relationship between psychological determinants and the purchase decision of sunscreen and its use as a preventive health behavior; cosmetic elegance, promotion and availability might be considered as important influential societal factors for consumers' decision-making behavior (Tribby, et.al., 2021; Ventenilla et al. 2018)

Our explorative study was planned to understand influence of psychological factors such as Motivation, Perception, and Persuasion; and Association as underlying features of personality factors to impact sunscreen purchases in young adults in the city of Mysore.

METHOD

TOOL FOR DATA COLLECTION:

Data for the study was collected through a semi-structured interview on a 5point Likert scale (1 -strongly disagree, 2- disagree, 3- neutral, 4- agree, and 5- strongly agree) in the English language. We framed 100 statements that were evaluated by evaluated by two experts and necessary changes were incorporated and a final set of 44 statements were used in the study. Of the 44 statements the first focused on awareness and use; second on brand preferences and the remaining were based on the psychological factors- Persuasion (9), Motivation (10), Perception 910), and personality factor *Association* (13).

PARTICIPANTS:

Participants were from varied background, race, ethnicity, socioeconomic status and qualification in the age group of 18-30 years presently living in Mysore city with English as a medium of study. The sample consisted of a total of 275 participants (males, N=130 and females N=145)

PROCEDURE:

Participants were instructed to read each statement carefully and tick the option that best suited them. They were encouraged to choose the option that first came to their mind. It took approximately 20-30 minutes to complete the questionnaire.

RESULTS

The first two statements were analyzed individually for a. yes and no answers and b. for brand preferences. The data collected for 42 statements was log-transformed. We analysed the study to understand the influence of psychological factors (Persuasion, Motivation, Perception) and personality factor- Association during purchase decisions Analysis of the first statement suggested positive awareness with 89% being aware of sunscreen use in their daily routine (N= 275; awareness- 245; not aware- 30)(Table 1).

Statement two focused on brand preference. It was found that consumers were more inclined to brand loyalty single brand (N=113); switching between 2 brands (N=59); minimum brand preference (N=73) and participants not choosing any brand (N=30) in the said sample population, and gender differences in brand preference were higher in males than females (Figure 1) and age suggested younger adults were more conscious about brand than older adults (figure 2)

One sample t-test for the whole population (Table 1, Figure 3) reported psychological factors had a significant effect on consumer's purchase decisions during sunscreen purchase (Persuasion - M=1.36, SD=.1, t274=203.65, p = .00, motivation - M=1.43, SD=.14, t274=169.62, p = .00, perception-M=1.39, SD=.11, t274=198.98, p = .001 and association- M=1.52, SD=.10, t274=240.64, p = .00) with

'Association' as a factor playing a major role followed by motivation to purchase sunscreen

Figure 1: Brand Preference across Genders

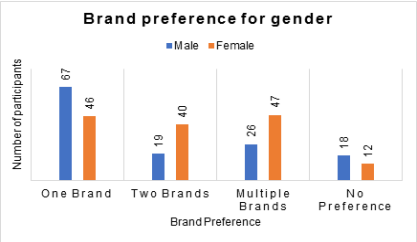


Figure 2: Brand Preference across Age

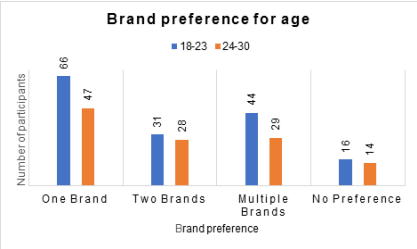
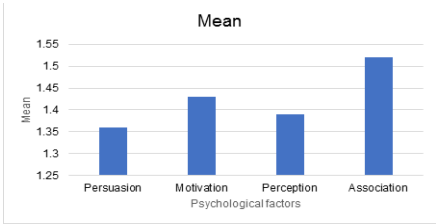


Table 1: Mean, SD, and t-value for psychological factors for the whole population

Psychological factors	Mean	SD	T	Sig (2 tailed)
Persuasion	1.36	0.11	203.65	0.00**
Motivation	1.43	0.14	169.62	0.00**
Perception	1.39	0.11	198.98	0.00**
Association	1.52	0.10	240.64	0.00**

**p <.01 (highly significant).

Figure 3: Mean of psychological factors of the total sample population.



Pearson correlation analysis (Table 2) revealed a significant positive correlation across the four variables with persuasion- motivation (r=0.528), perception (r=0.555), and association (r=0.588); motivation-perception (r=0.581) and perception- association (r=0.666); interestingly, a very strong correlation was observed between motivation and Association (r=0.704).

Table 2: Results of Pearson Correlation for Psychological Factors.

Psychological factors	Persuasion	Motivation	Perception	Association
Persuasion	-	0.528*	0.555*	0.588*
Motivation	-	-	0.581*	0.704**
Perception	-	-	-	0.666*
Association	-	-	-	-

*: strong positive relationship; **: very strong positive relationship.

The results of independent *t-test* across age 18-23 (N=115) and 24 to 30 (N=117) revealed no significant difference between age groups for Persuasion ($M_{(18-23)}$= 1.36, $SD_{(18-23)}$= 0.09; $M_{(24-30)}$= 1.36, $SD_{(24-30)}$= 0.12; t_{229}=0.003, p = 0.98), Motivation ($M_{(18-23)}$= 1.43, $SD_{(18-23)}$= 0.13; $M_{(24-30)}$= 1.43, $SD_{(24-30)}$= 0.16; t_{230}=0.134, p = 0.89) and Perception ($M_{(18-23)}$= 1.38, $SD_{(18-23)}$= 0.11; $M_{(24-30)}$= 1.39, $SD_{(24-30)}$= 0.12; t_{230}=0.57, p = 0.56) and a significant difference for Association ($M_{(18-23)}$= 1.51, $SD_{(18-23)}$= 0.11; $M_{(24-30)}$= 1.54, $SD_{(24-30)}$= 0.09; t_{229} = 2.27, p =0.02) as a personality factor seemed to influence sunscreen purchase (Table 3)

Table 3: Results of independent sample test across age groups

Psychological factors	F	Sig	T	df	Sig (2tailed)
Persuasion	5.08	0.02	0.003	229	0.98
Motivation	0.29	0.58	-0.134	230	0.89
Perception	0.37	0.54	-0.57	230	0.56
Association	0.31	0.57	-2.21	229	0.028*

* p<0.05: significant.

Analysis across gender (male vs female) (Table 4) revealed no significant difference between gender for persuasion ($M_{(male)}$= 1.35, $SD_{(male)}$ = 0.11; $M_{(female)}$= 1.36, $SD_{(female)}$ = 0.11; t_{273}=0.187, p = 0.85), and motivation, ($M_{(male)}$= 1.41, $SD_{(male)}$ = 0.14; $M_{(female)}$= 1.45, $SD_{(female)}$ = 0.14; t_{273}=1.572, p = 011); perception revealed a significant difference ($M_{(male)}$=1.37, $SD_{(male)}$ = 0.11; $M_{(female)}$= 1.40, $SD_{(female)}$ = 0.11; t_{273} = 2.043, p = 0.04) and high significant difference was observed for Association ($M_{(male)}$= 1.50, $SD_{(male)}$ = 0.11; $M_{(female)}$= 1.54, $SD_{(female)}$ = 0.08; t_{273} = 2.42, p = 0.01).

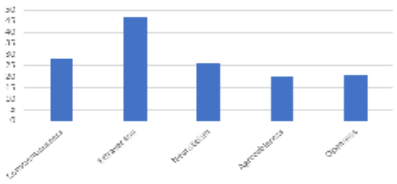
Table 4: Results of independent sample test across gender.

Psychological Factors	F	Sig	t	df	Sig (2 tailed)
Persuasion	1.028	0.311	0.187	273	0.852
Motivation	1.667	0.198	1.572	273	0.118
Perception	1.586	0.209	2.043	273	0.042*
Association	6.859	0.009	2.424	273	0.017**

*p>0.05: significant; **p>0.01: highly significant

Further analysis of 'Association' assumed to be characteristic of personality factor, we analyzed the 13 statements that were framed under the pretext of the five dimensions of the Big Five theory (2 statements addressed Conscientiousness, 4- Extraversion, 3- Neuroticism, and 2 each addressing Agreeableness and Openness to experience). We analyzed the items on which participants scored high (4 and above) on the 5-point Likert scale on this dimension. Of the 275 participants, 102 scored high on different dimensions of the five personality traits (Conscientiousness N=28, Extraversion- N= 47, Neuroticism- N=26, Agreeableness N= 20, and Openness N= 21), (Figure 4), i.e., 37% of the population seemed to have scored high on each dimension differently, suggesting individual differences.

Figure 4: Number of Participants scoring high on each Dimension.



The results suggest that Extraversion is pronounced underlying personality factors that influence an individual's association with a particular product.

DISCUSSION

Effective marketing strategies mainly needs to focus on resonating consumer products with consumer needs, and psychological factors such as perception, and motivation for sustainability of the product in the market (Galvano 2021; Abroms et al. 2003; Falk and Scholz 2017; Heckman et al. 2012; Hillhouse et al. 1997; Rukhsar et al. 2023; Vainikka 2015)). Our findings on psychological and personality factors addon to the contribution of understand consumer behavior.

Our study reports 89% of the sample population was aware of sunscreen use as a protective feature against sun-induced disorders is in line with studies by Lee et al. (2015); and Mousavi et al. (2011). Brand consciousness suggests the sample population as a whole was brand conscious (41%) , 21.6 % switched between two brands, 26.8 % reported minimum brand preference and 10.9% had no preferences. Interestingly, males seemed to adhere to single brands while females were open to multi-brand choices and young adults (18-23 years) were brand-conscious than older adults (24-30 years) and replicated the results of other studies on brand image, cosmetics, and skin care (Bachleda, Fakhar, and Hlimi 2012; Baek, Kim, and Yu 2010; Eze et al. 2012; Gilaninia and Mousavian 2012; Lee, Goh, and Mohd Noor 2019;

Rizwana and Nasarulla 2023; Upamannyu, Bhakar, and Chauhan 2015).

Furthermore, we report 'Association' as a strong predictor of purchase decisions. We also found very strong positive correlation between Motivation and Association as factors influencing purchase decisions during sunscreen purchase. Analysis across gender again suggested 'Association' as a highly influential factor in sunscreen purchase decisions as compared to other psychological factors (persuasion, motivation, and perception)

The intriguing results of 'Association' bearing a strong influence during purchase decisions seemed to confirm our assumption that 'Association' may be a predictor of the five major personality factors. Our analysis of high scores on personality factors influencing purchase decision suggests 'Extraversion' as dominant personality characteristic influencing decision-making process. However, our claim needs more studies for the results to be generalizable. We plan to increase the number of statements under the said psychological factor and see if the results are replicable in the future.

LIMITATIONS

1. The results are subject to generalizability as data was collected on a semi-structured interview-based questionnaire which lacks reliability and validity.
2. The statements for the 'Association' with personality factors were very limited to claim results for generalizability.

IMPLICATIONS

The novel findings that psychological factors may be important to understanding consumer behavior may make significant contribution to marketers and marketing strategies. More research on similar lines shall enable marketers to address individual differences in consumer behavior and realize the notion that 'one size fits all' is far from true.

CONCLUSION

Sunscreen is crucial for protecting against UV radiation and preventing skin disorders. We found 89% of the sample population was aware of sunscreen use, and were critical about brand preferences. Psychological factors such as persuasion, motivation, and perception influenced the sunscreen purchase. Association as a personality factor seemed to highlight Extraversion to be predictor of sunscreen purchase hinting the critical need of market research to understand psychological and personality factors as crucial features of consumer behavior.

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