CHOOSING HERBAL TOOTHPASTE: STUDY ON CONSUMER BEHAVIOR AND PREFERENCES IN THE GREATER JAKARTA AREA

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Abstract: The research aims are investigating consumers' psychology and behavioral characteristics and investigating the consumer's characteristics that affects experienced preferences in the Greater Jakarta Area. Consumer profile and consumer behavior were carried out using descriptive statistics analysis and cross tabulation analysis. Meanwhile, to measure consumer preferences for herbal toothpastes, logistic regression analysis (logit) was used. This survey was conducted on 459 respondents in the Greater Jakarta area. The results of the analysis show that in general the customers of toothpaste products are women aged 25-44 years and have more than 3 family members. The majority of customers are well educated segments, work as private workers and belong to the SES A group. Based on cross tab analysis, it is known that gender (p value = 0.037) and age (p value = 0.025) have a significant correlation in choosing herbal toothpaste. These results were confirmed in the logit analysis where women prefer herbal toothpastes than men. Based on consumer psychological factors, most customers believe in buying toothpaste at offline stores, except for those who are under 30 years old. However, for consumers who live in DKI Jakarta, they prefer to buy toothpaste through online channels compared to those who live outside DKI Jakarta.

Keywords: consumer behavior, consumer profile, herbal toothpastes, logistic regression

Abstrak: *Penelitian ini bertujuan menyelidiki psikologi dan karakteristik perilaku konsumen serta menyelidiki karakteristik konsumen yang mempengaruhi preferensi yang dialami di wilayah Jabodetabek. Profil konsumen dan perilaku konsumen dilakukan dengan menggunakan analisis statistik deskriptif dan analisis tabulasi silang. Sedangkan untuk mengukur preferensi konsumen terhadap pasta gigi herbal digunakan analisis regresi logistik (logit). Survei ini dilakukan terhadap 459 responden di wilayah Jabodetabek. Hasil analisis menunjukkan bahwa pada umumnya pelanggan produk pasta gigi adalah wanita berusia 25-44 tahun dan memiliki anggota keluarga lebih dari 3 orang. Mayoritas pelanggan adalah segmen berpendidikan tinggi, bekerja sebagai pekerja swasta dan termasuk dalam grup SES A. Berdasarkan analisis tabulasi silang diketahui bahwa jenis kelamin (p value = 0,037) dan usia (p value = 0,025) memiliki hubungan yang signifikan dalam pemilihan pasta gigi herbal. Hasil ini dikonfirmasi dalam analisis logit di mana wanita lebih memilih pasta gigi herbal daripada pria. Berdasarkan faktor psikologis konsumen, sebagian besar pelanggan percaya membeli pasta gigi di toko offline, kecuali yang berusia di bawah 30 tahun. Namun, bagi konsumen yang berdomisili di DKI Jakarta lebih memilih membeli pasta gigi melalui jalur online dibandingkan dengan yang tinggal di luar DKI Jakarta.*

Kata kunci: *perilaku konsumen, profil konsumen, pasta gigi herbal, regresi logistik*

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INTRODUCTION

Oral health is now seen as a significant and fundamental element of overall health. It is common knowledge that a healthy mouth and body are inextricably linked. Any deviation in oral health leads to poor oral health, which can lower a person's quality of life and contribute to the onset of oral illnesses (Agrawal and Gupta, 2020). Oral care items are those that are used to clean the mouth, freshen the breath, and keep oral hygiene in good shape. As the dentistry industry grows, a wide range of oral care goods, such as toothbrushes, toothpaste, mouthwash, floss, and whitening agents, are available on the market. However, toothbrushes and toothpaste are the most extensively used oral care items. It's difficult to go a day without using toothpaste and a toothbrush in today's modern civilization, where the standard of living is rising by the day. The primary goal of using toothpaste is to reduce bacterial flora in the mouth while also delivering fluoride to the teeth (Okpalugo et al. 2009) since oral hygiene was a top priority in society as early as 5000 BC.

In the modern era, people rely on experience to make decisions, including choosing toothpaste. Therefore, selecting toothpaste becoming more important these days. Toothpaste selection, like other products, is based on learning that leads to experience. People learn and enlighten themselves through the interaction of knowledge. Product knowledge provides the consumer with firsthand experience with the product, which helps to brand the product. There has been a lot of research into the factors that influence consumer happiness, with psychological processes playing a big part. Not only has the study of satisfaction become a focus of attention for researchers, but it has also become a focus of attention for businesses that provide goods and services to consumers and are competing in an increasingly competitive market (Palaci et al. 2019). As a result, more than at any other time in recent memory, the growing interest for more varied items by consumers, combined with the current enormous amount of data accessible to buyers and the propensity to become more esteem cognizant with respect to consumers, has demonstrated the need to be exceptionally sensitive to customer needs and needs today than at any other time in recent memory (Acharya et al. 2018). Sarker et al. (2013) investigated some of the factors that influence toothpaste brand selection and discovered that a number of factors influence toothpaste brand selection, including quality, benefits of using the product, duration

of freshness, smell, perceived performance, brand awareness, and product attribute. Vani et al. (2010) conducted research to determine customer behavior, examine consumer preferences, and determine consumer awareness of toothpaste brands. According to the findings, people's opinions on toothpaste brands are formed by dentist recommendations, price, availability, packaging, quality, brand, flavor, healthy teeth and gems, freshness, prevention of tooth erosion, whiteness, and the impact of friends, kids, or parents.

The decision-making processes and actions of people who buy and use things are referred to as buying behavior (Acharya et al. 2018). The pattern of toothpaste usage differs greatly between countries and should be investigated independently in diverse demographics (Soltani et al. 2018). Since, this behavior changes depending on the individual's characteristics (Acharya et al. 2018). Consumer behavior is assessed in terms of the things they buy, the reason for purchasing, the time of purchase, and the frequency of purchase. Several factors influence a consumer's decision to purchase toothpaste, including peer recommendations, pricing, product attributes, brand of product, commercials, toothpaste flavor, and manufacturer incentives (Soltani et al. 2018). Consumer satisfaction was added to the prevailing methodologies, both cognitive and affective in some research (Palaci et al. 2019). With regards to this context, many researchs have employed the cognition-affection-conation paradigm to describe a consumer's emotional intellectual processing and purchasing behaviors (e.g., Hilgard, 1980; Kidwell et al. 2008; Wilkie, 1994; Kim et al. 2013).

Further research on women's knowledge and attitudes regarding toothpaste in the Greater Jakarta area has been suggested to determine the elements that influence consumer's oral toothpaste choice. A large body of research has been performed to investigate the critical influence of consumer's oral health knowledge and attitudes. Similar studies have also been conducted in Indonesia. These studies' findings are relevant, especially in societies where consumers play a significant role in family oral health. However, previous studies have examined more related to toothpaste consumer behavior in general such as understanding the factors like demographic, social, cultural, price, quality, product attributes for buying toothpaste (Vani et al. 2010, Dani, 2013, Thakur, 2016). There is limited research that examines toothpaste consumer research with a more in-depth perspective, especially

in investigating the relationship between consumer demographic factors and consumer past behavior on consumer preferences for herbal toothpaste. Based on this reasoning, the present study aimed to improve the understanding of consumers' reactions to toothpaste stimuli by pursuing a twofold objective: i) investigating consumers' psychology and behavioral characteristics; ii) investigating the consumer's characteristics that affects experienced preferences; and iii) analyzing correlation between consumers' characteristics and toothpaste preferences. This study uses a grand theory of consumer behavior and consumer preferences which is a combination of relevant previous research (Spiggle and Sewall, 1987, Heider and Moeller, 2012, Indrawan et al. 2018).

METHODS

Non-probability sampling was employed in this study. Furthermore, convenience sampling was used, in which data was obtained from population respondents who were readily available to provide it (Sekaran and Bougie, 2009). Consumers in the Greater Jakarta area constitute the study's population. Data was gathered through the use of self-administered questionnaires. Primary data collection was carried out by distributing questionnaires through an online platform from August to October 2021. There are several criteria to become respondents for this research, namely those who live in Greater Jakarta and bought toothpaste within the last 1 month. From the data obtained as many as 560 respondents there are some respondents who did not fill out the questionnaire questions completely. After data verification, there were 459 respondents who filled out the questionnaire completely and could continue for further processing and analysis.

This study's measurement instrument was created to collect primary data on customer profile and consumer behavior. The following procedures were taken in the development of the instrument: measurement instrument design, content validity, and formulation of psychometric features, such as validity and reliability. The instrument consists of 21 items and were grouped into consumer profile (8 items) and consumer behavior (13 items). Consumer profile constitutes age, gender, education, marital status, employment, monthly income, family member, and location. Consumer behavior were assessed by questions with regards toothpaste brand usage, amount of toothpaste used per use, volume of toothpaste used, frequency of purchase per month, frequency of use per day, regular dental checkups, today's toothpaste varieties, switching toothpaste brands experience, consumer reason for switching to another brand, how much toothpaste consumer used in the last 6 months, the main reason consumer bought toothpaste, who influenced consumer to buy toothpaste, promotions and promotional factors.

The survey used in this study was developed to investigate market channels and consumer preferences for herbal toothpastes based on demographic factors and consumer behavior. The questionnaire consisted of 5 parts following a research framework adapted from earlier retail selection research (Heider and Moeller 2012, Indrawan et al. 2018) shown in Figure 1. The first determinant to be measured is the consumer psychological factor using the trust model approach by de Jonge et al. (2008). To measure the consumer psychological factor, several questions were asked about consumer trust in various purchasing channels of toothpaste. This refers to several previous studies where the trust in food as an important psychological factor (de Jonge et al. 2007, 2008; Van Kleef et al. 2007). In the questionnaire, trust is divided into 2 categories, namely low trust and high trust, which are then tested for their influence on herbal toothpaste preferences and market channel selection. The second part of the questionnaire consists of a collection of consumer demographic questions including: gender, age, education, marital status, occupation, monthly expenses, family member and domicile (Iton 2015; Indrawan et al. 2018). The third part includes measurements related to consumer behavior, namely the quantity of toothpaste product used, the frequency of monthly purchases, the frequency of toothpaste usage per day, and the frequency of regular dental checkups. The fourth part of the questionnaire is aimed at the market channels where consumers usually buy toothpaste. Responses are grouped into 2 market channels: online channel and offline channel. The last part of the questionnaire contains questions about consumer preferences for herbal toothpastes. Details of the operationalization of the variables can be seen in Table 1.
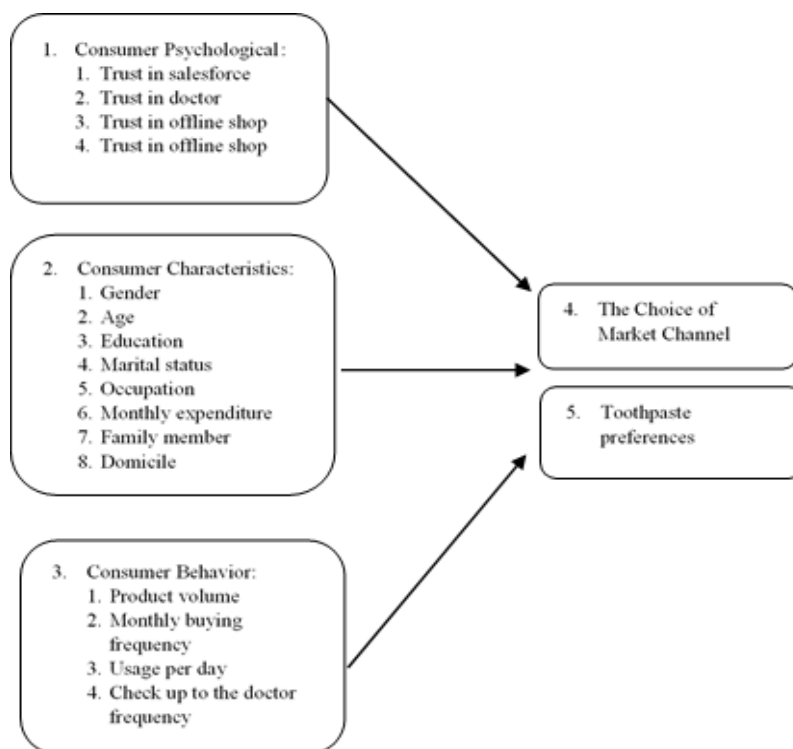
Figure 1. Research framework for the choice of market channel and the toothpaste preferences

Table 1. Operationalization of the variables

Variable	Indicator	Scale	References
Consumer Psychological	Trust in salesforce	Ordinal	de Jonge et al. (2007), de Jonge et al. (2008), Van Kleef et al. (2007)
	Trust in doctor	Ordinal	
	Trust in offline shop	Ordinal	
	Trust in offline shop	Ordinal	
Consumer Characteristics	Gender	Nominal	Iton (2015), Indrawan et al. (2018)
	Age	Ordinal	
	Education	Ordinal	
	Marital status	Nominal	
	Occupation	Nominal	
	Monthly expenditure	Interval	
	Family member	Ordinal	
	Domicile	Nominal	
Consumer Behavior	Product volume	Interval	Spiggle and Sewall (1987), Heider and Moeller (2012), Indrawan et al. (2018), Dani (2013), Thakur (2016)
	Monthly buying frequency	Interval	
	Usage per day	Interval	
	Check up to the doctor frequency	Interval	
The Choice of Market Channel	Offline shop vs Online shop	Nominal	Spiggle and Sewall (1987)
Toothpaste preferences	Herbal vs Non-herbal	Nominal	Indrawan et al. (2018), Septiani & Indraswari (2018)

Descriptive statistical analysis was conducted to summarize respondents' responses using cross tabulation. Differences between determinants in different market channels and between determinants of respondent behavior change were statistically tested using Pearson's chi-square. Furthermore, multivariable logistic regression analysis was used to measure the determinants relevant to respondents to market channels and consumer preferences for herbal toothpastes. Logistic regression is a robust test that predicts the probability of an event occurring (Hair et al. 1998). The general format of the multivariate logistic regression model is shown by Equation as follows:

$$ln\left(\frac{v}{1-v}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_p X_p$$

where the log of the odds of the outcomes is represented by estimated intercept is represented by β_0, and the coefficient regression of each independent variable is represented by $\beta_1 ... \beta_p$. The hypotheses of this research are: H_0 = There is no significant correlation between the two variables being measured and H_1 = There is a significant correlation between the two variables being measured. The test criteria are if the significance p-value is > 0.05 then accept H_0 and if the significance p-value is <0.05 then accept H_1.

RESULTS

Consumer profile analysis was carried out using descriptive statistical approach and cross tabulation. Based on descriptive statistical analysis, it is known that 62.7% of respondents are female and 37.3% are male. These results indicate that women have a dominant role in making purchasing decisions in their families. The majority of respondents' ages were in the range of 25–34 years (37.7%) and 35–44 years (30.5%). In this age range, most of the respondents are married (78.9%). There are most of the respondents belonging to the mature family group with the number of families living in 1 house the majority of which is more than 3 people (57.3%). The large number of people who live in one house will certainly determine the respondents in making their purchasing decisions. In line with research conducted by Vani et al. (2010) that a family exerts a complex influence on the behaviors of its members. When viewed from their latest education,

it is known that generally respondents belong to the well-educated group which is dominated by those with undergraduate/postgraduate education at 78.9%, work as private employees (36.6%) and generally dominated by those belonging to the SES A group with monthly expenses of more than IDR 3 million (52.7%).

Furthermore, cross-tabulation analysis can be seen in Table 2. Table 2 provides an overview of 17 general characteristics which include socio-demographic factors and consumer behavior related to the usage of toothpaste. There are 2 demographic characteristics that are significantly correlated (p value < 0.05) with preference for herbal toothpaste. Gender was significantly correlated with preference for herbal toothpaste with a p value of 0.037. Cross tabulation shows that women seem to prefer herbal toothpaste more than men. The level of environmental awareness of consumers will significantly shape consumer attitudes in choosing a product (Riptiono 2022). In addition, the age factor also has a significant relationship with the selection of herbal toothpaste (p value = 0.025). Based on the distribution of respondents' responses in the cross tabulation, it can be seen that in general, each age level prefers herbal toothpaste even though the amount varies.

On the other hand, there are 5 socio-demographic factors that have a significant correlation with the choice of market channel. Consumer trust in offline stores (p value = 0.000) and online stores (p value = 0.001) was found to be strongly associated with the selection of toothpaste market channels. Both groups that have low trust and high trust, generally choose toothpaste directly in offline stores. Age factor is also significantly correlated with the selection of toothpaste market channels with a p value of 0.022. In general, every consumer at various age levels chooses toothpaste at offline stores, although there is an interesting trend for those aged less than 40 years, there are still quite a lot of respondents who choose to buy toothpaste online and it is decreasing in consumers aged 40 years and over. In addition, the consumer's monthly expenditure (p value = 0.027) and domicile (p value = 0.003) are also significantly correlated with the choice of toothpaste market channel. Although in general every consumer chooses the offline channel, the number of consumers who choose toothpaste online is increasingly seen in the SES A and SES B groups. Based on the results

of this analysis, it is known that consumers in SES categories C and D, toothpaste products are positioned as convenience goods which are generally easier to buy at offline stores. However, for customers belonging to SES A and B, the toothpaste products offered must have special values such as herbal ingredients and others. Toothpaste products can be effectively promoted through online media.

Table 2. Descriptive statistics of the social-demographic characteristics of the respondents in relation to their choice of market channel and toothpaste preferences

General Characteristics	Toothpaste preferences			Market channel		
	Herbal	Non-herbal	P Value	Offline	Online	P Value
Toothpaste preferences						
Herbal	-	-	-	340	51	0.709
Non-herbal	-	-	-	58	10	
Sales force						
Low trust	184	33	0.823	187	30	0.749
High trust	207	35		211	31	
Doctor						
Low trust	279	49	0.906	288	40	0.274
High trust	112	19		110	21	
Come to the store						
Low trust	61	10	0.851	48	23	0.000
High trust	330	58		350	38	
Online shop						
Low trust	258	44	0.837	273	29	0.001
High trust	133	24		125	32	
Gender						
Male	138	33	0.037	150	21	0.624
Female	253	35		248	40	
Age						
<25 yr old	50	13	0.025	52	11	0.022
26 to 30 yr old	59	3		47	15	
31 to 35 yr old	108	28		122	14	
36 to 40 yr old	60	5		54	11	
41 to 45 yr old	39	6		41	4	
>45 yr old	75	13		82	6	
Education						
lower education	5	0	0.641	5	0	0.407
senior high school	47	8		50	5	
university	339	60		343	56	
Marital status						
married	309	53	0.662	315	47	0.705
single	80	14		80	14	
divorced	2	1		3	0	
Occupation						
non-housewife	313	57	0.468	319	51	0.525
housewife	78	11		79	10	

Table 2. Descriptive statistics of the social-demographic characteristics of the respondents in relation to their choice of market channel and toothpaste preferences (continue)

General Characteristics	Toothpaste preferences			Market channel		
	Herbal	Non-herbal	P Value	Offline	Online	P Value
Monthly expenditure						
less than IDR 700k	18	3	0.862	16	5	0.027
IDR 700k - 1 million	24	3		27	0	
IDR 1 million - 2 million	59	9		55	13	
IDR 2 million - 3 million	88	13		93	8	
IDR more than 3 million	202	40		207	35	
Family member						
1	26	5	0.806	27	4	0.772
2	43	7		41	9	
3	101	14		101	14	
more than 3	221	42		229	34	
Domicile						
DKI Jakarta	73	14	0.71	67	20	0.003
Outside Jakarta (Bogor, Depok, Tangerang, Bekasi)	318	54		331	41	
Product volume						
25 gr	17	1	0.461	17	1	0.477
100 gr	121	26		126	21	
150 gr	182	28		179	31	
Others	71	13		76	8	
Monthly buying frequency						
Once	237	44	0.636	245	36	0.882
Twice	118	20		118	20	
More than twice	36	4		35	5	
Usage per day						
Once	17	7	0.119	20	4	0.516
Twice	272	43		277	38	
More than twice	102	18		101	19	
Check up to the doctor						
every 6 months	53	10	0.793	52	11	0.452
once a year	53	7		50	10	
not sure / if sick	260	45		270	35	
never	25	6		26	5	

Table 3 provides the results of 2 logistic regression models related to consumer preferences for toothpaste market channels and consumer preferences for herbal toothpastes. The market channel choice logistic regression model was significant where 31.2% of the variation could be explained by the model (pseudo R2 value = 0.312). There is one variable that has a significant effect on toothpaste preferences, namely gender (p value = 0.039). These results were confirmed in the logit analysis where women prefer herbal toothpastes than men. Kotler and Armstrong (2008) state that

consumer purchasing decisions are influenced by psychological factors, namely motivation, perception, learning, beliefs and attitudes. Herbal toothpaste is a psychological product that offers a need for recognition or appreciation for consumers. Based on the Odd Ratio value, it is known that, compared to female consumers, the chances of male consumers choosing herbal toothpaste are smaller than non-herbal toothpastes (OR=0.579). Women have a better perception of herbal toothpaste (OR=1/0.579) so that this psychological factor can improve purchasing decisions in the future

(Septiani & Indraswari, 2018). Based on consumer psychological factors, most customers believe in buying toothpaste at offline stores, except for those who are under 30 years old. This refers to the Odd Ratio value, namely those aged less than 25-30 years compared to those aged more than 45 years choosing an offline store of 0.346 and 0.229 instead of choosing an online store. However, for consumers who live in DKI Jakarta, they prefer to buy toothpaste through online channels compared to those who live outside DKI Jakarta (OR=1/0.415).

Based on the toothpaste brand used today, the majority of respondents use Pepsodent toothpaste (53.6%). This is in line with previous research (Vani et al. 2010, Zeithaml et al. 1988) that brand image plays an important role in the preference for toothpaste selection. Besides that, there are 10% of Close Up users, 8.7% using the Sensodyne brand, 6.1% using the Enzyme brand, and 3.9% using the Colgate and Sasha brands respectively. The rest use other brands with an average portion of less than 3%. This proportion shows that herbal toothpaste that focuses on a niche market still has a good chance to be developed.

Table 3. Odds ratio (OR) of the variables in the estimated logistic regression model for the consumers' choice of market channel and toothpaste preferences

Determinant	Toothpaste preferences			Choice of market channel		
	OR	95% CI	P value	OR	95% CI	P value
Consumer psychological factor						
Salesforce						
- Low trust (reference)	1			1		
- High trust	1.061	0.634 to 1.776	0.823	1.092	0.637 to 1.872	0.749
Doctor						
- Low trust (reference)	1			1		
- High trust	1.035	0.584 to 1.837	0.906	0.728	0.411 to 1.289	0.276
Come to the store						
- Low trust (reference)	1			1		
- High trust	0.933	0.452 to 1.925	0.851	4.413	2.424 to 8.036	0.000
Online shop						
- Low trust (reference)	1			1		
- High trust	0.945	0.551 to 1.621	0.837	0.415	0.241 to 0.716	0.002
Consumer characteristics						
Gender						
- Male	0.579	0.344 to 0.972	0.039	1.152	0.654 to 2.029	0.624
- Female (reference)	1			1		
Age						
- <25 yr old	1.500	0.642 to 3.502	0.349	0.346	0.121 to 0.992	0.048
- 26 to 30 yr old	0.293	0.080 to 1.077	0.065	0.229	0.083 to 0.631	0.004
- 31 to 35 yr old	1.496	0.728 to 3.075	0.274	0.638	0.235 to 1.727	0.376
- 36 to 40 yr old	0.481	0.162 to 1.424	0.186	0.359	0.125 to 1.029	0.057
- 41 to 45 yr old	0.888	0.313 to 2.516	0.822	0.750	0.200 to 2.806	0.669
- >45 yr old (reference)	1			1		
Education						
- lower education	0.000	0.000 to -	0.999	0.000	0.000 to -	0.999
- senior high school	0.962	0.433 to 2.137	0.924	0.613	0.234 to 1.602	0.318
- university	1			1		
Marital status						
- married	2.915	0.260 to 32.720	0.386	241,028,599.826	0.000 to -	0.999
- single	2.857	0.242 to 33.667	0.404	282,695,777.988	0.000 to -	0.999
- divorced (reference)	1			1		

Table 3. Odds ratio (OR) of the variables in the estimated logistic regression model for the consumers' choice of market channel and toothpaste preferences (continue)

Determinant	Toothpaste preferences			Choice of market channel		
	OR	95% CI	P value	OR	95% CI	P value
Occupation						
- non-housewife	0.774	0.388 to 1.546	0.469	0.792	0.385 to 1.629	0.526
- housewife (reference)	1			1		
Monthly expenditure						
- less than IDR 700k	0.842	0.237 to 2.992	0.790	1.848	0.636 to 5.368	0.259
- IDR 700k - 1 million	0.631	0.181 to 2.197	0.470	-	0.000 to -	0.998
- IDR 1 million - 2 million	0.770	0.353 to 1.679	0.512	1.398	0.692 to 2.822	0.350
- IDR 2 million - 3 million	0.746	0.380 to 1.464	0.394	0.509	0.227 to 1.139	0.100
- IDR more than 3 million	1			1		
Family member						
- 1	1.012	0.368 to 2.785	0.982	0.998	0.329 to 3.028	0.997
- 2	0.857	0.361 to 2.033	0.726	1.478	0.660 to 3.312	0.342
- 3	0.729	0.381 to 1.396	0.341	0.934	0.480 to 1.815	0.840
- more than 3	1			1		
Domicile						
- DKI Jakarta	0.885	0.467 to 1.680	0.710	0.415	0.229 to 0.753	0.004
- Outside Jakarta (Bogor, Depok, Tangerang, Bekasi)	1			1		
Consumer behavior						
Product volume						
- 25 gr	0.321	0.039 to 2.628	0.290	0.559	0.065 to 4.770	0.595
- 100 gr	1.174	0.567 to 2.429	0.666	1.583	0.668 to 3.752	0.296
- 150 gr	0.840	0.412 to 1.714	0.632	1.645	0.723 to 3.744	0.235
- Others (reference)	1			1		
Monthly buying frequency						
- Once	1.671	0.566 to 4.930	0.352	1.029	0.378 to 2.797	0.956
- Twice	1.525	0.490 to 4.753	0.466	1.186	0.415 to 3.391	0.750
- More than twice (reference)	1			1		
Usage per day						
- Once	2.333	0.847 to 6.425	0.101	1.063	0.327 to 3.460	0.919
- Twice	0.896	0.494 to 1.625	0.717	0.729	0.402 to 1.323	0.299
- More than twice (reference)	1			1		
Check up to the doctor						
- every 6 months	0.786	0.257 to 2.405	0.673	1.100	0.346 to 3.499	0.872
- once a year	0.550	0.167 to 1.808	0.325	1.040	0.322 to 3.362	0.948
- not sure / if sick	0.721	0.280 to 1.856	0.498	0.674	0.243 to 1.869	0.448
- never (reference)	1			1		
Constanta	-0.039			13.227		
Log likelihood	347.239			274.401		
Number of obs	459			459		
LR chi^2	34.263			85.324		
Prob > chi^2	0.360			0.000		
Pseudo R^2	0.127			0.312		

In general, consumers buy toothpaste once a month (61.2%). However, there are also respondents who buy toothpaste 2 times per month (30.1%) and make purchases more than 2 times per month by 8.7%. Most of the respondents have used toothpaste according to the existing recommendations, namely 2 times a day (68.6%). There are also those who use toothpaste more than 2 times a day, which is 26.1%. However, the level of awareness of respondents to routinely check with the dentist is still lacking. This can be seen from the majority of respondents (66.4%) who did not do regular dental check-ups. They check up to the dentist with an uncertain frequency or only if they got toothache. So that the government and companies are responsible for creating public awareness through campaigns on dental health (Vani et al. 2010).

Managerial Implications

At the end, the government and the toothpaste industry must work together in encouraging dental health campaigns. The use of herbal toothpaste is more chosen by female respondents as family purchasing decision makers. Campaigns and education about the importance of using herbal toothpaste can be given to women with SES A who live in urban areas by offering the concept of long-term health investment.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

In general, consumers have high trust in toothpaste sold through sales forces and offline stores. This is understandable considering that most of the respondents still consume toothpaste products with well-known brands. The majority of respondents were female (63.7%) in the range of 25–34 years (37.7%) and 35–44 years (30.5%). In this age range, most of the respondents are married (78.9%). The majority of respondents belonging to the well educated group are dominated by those with undergraduate/postgraduate education at 78.9%, which are generally dominated by those belonging to the SES A group with monthly expenditures of more than IDR 3 million (52.7%). Most of them buy toothpaste once a month (61.2%) and consume or used toothpaste 2 times a day (68.6%). However, the level of awareness of respondents to routinely check with the dentist is still lacking. Based on cross tab analysis, it is known that gender (p value

= 0.037) and age (p value = 0.025) have a significant correlation in choosing herbal toothpaste. These results were confirmed in the logit analysis where women prefer herbal toothpastes than men. Based on consumer psychological factors, most customers believe in buying toothpaste at offline stores, except for those who are under 30 years old. However, for consumers who live in DKI Jakarta, they prefer to buy toothpaste through online channels compared to those who live outside DKI Jakarta.

Recommendations

However, the limitation of this study is the scope of the variables that focus on internal variables from the consumer's perspective and has not measured consumers' intention to buy herbal toothpaste. Further research can be directed at measuring preference attributes of herbal toothpaste and willingness to pay the herbal toothpaste. This can provide an overview of the opportunities for herbal toothpaste in Indonesia.

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