

CONSUMER SEGMENTATION OF REFILLED DRINKING WATER IN PADANG

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ABSTRACT

The purposes of this study were to analyze consumer segmentation of refilled drinking water based on their behavior and to recommend strategies for increased sales of Salju depot. The study was conducted using a survey of family and non-family consumers in Nanggalo, North Padang, West and East Padang. The respondent selection technique is using a convenience sampling, which is based on the availability of elements and easiness of obtaining these samples. The analysis used for segmentation is cluster analysis and CHAID. The results showed that there were five segments in family consumer and four segments in non-family consumer. Each family segment was different in terms of usage and consumption level, while non-family segments differ in terms of consumption duration and consumption level. Salju depot could aim market segments that provide benefits, specifically segments with high consumption levels both in family and nonfamily consumers, maintain the price and quality of the product and show the best performance in serving customers, set the open hours and optimize the messaging services.

Keywords: refilled drinking water, segmentation, Padang, CHAID

ABSTRAK

Penelitian ini bertujuan menganalisis segmentasi konsumen air minum isi ulang berdasarkan perilakunya dan merekomendasikan strategi peningkatan penjualan bagi depot Salju. Penelitian dilakukan dengan metode survei terhadap konsumen keluarga dan konsumen nonkeluarga di Kecamatan Nanggalo, Kecamatan Padang Utara, Kecamatan Padang Barat dan Kecamatan Padang Timur Kota Padang. Teknik pemilihan responden menggunakan convenience sampling, yaitu berdasarkan ketersediaan elemen dan kemudahan mendapatkan sampel tersebut. Analisis yang digunakan untuk segmentasi adalah analisis cluster dan CHAID. Hasil penelitian menunjukkan terdapat lima segmen konsumen keluarga dan empat segmen konsumen nonkeluarga. Masing-masing segmen keluarga berbeda dalam hal penggunaan dan tingkat konsumsi, sedangkan segmen nonkeluarga berbeda dalam hal lama konsumsi dan tingkat konsumsi. Salju dapat menyasar segmen yang dapat memberikan keuntungan yaitu segmen dengan tingkat konsumsi yang tinggi baik untuk keluarga maupun nonkeluarga, mempertahankan harga dan kualitas produk yang dihasilkan serta menampilkan performa terbaik dalam melayani konsumen dan menetapkan jam buka dan jam layanan pesan antar yang optimal.

Kata kunci: air minum isi ulang, segmentasi, Padang, CHAID

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INTRODUCTION

Padang is one of the cities in Indonesia, most of whose people use AMIU as their water resource. In 2013, there were 42,23% households that consumed AMIU in Kota Padang (BPS Sumbar, 2014). This number has kept increasing compared to the previous years. The high demand for AMIU has enhanced AMIU industrial development in Kota Padang.

One of DAMIU in Kota Padang is Salju. This DAMIU is located in Kelurahan Kalumbuk Kecamatan Kuranji Kota Padang. Salju has been established and operated since 2005. Its sale has kept increasing from year to year. However, in the last years its graphic has undergone a decrease. The increasing sale from 2010 to 2011 was 20%, and in the following years it decreased up to 6,8% and 4,2%. This was not in line, compared to AMIU consumption in Kota Padang, whose growth increased

significantly from year to year (Figure 1). The number of households that consumed AMIU in Kota Padang increased 5,5% in 2011. Afterwards, it increased up to 5,7% in 2012 and then 8,6% in 2013.

Based on the field survey, there are two groups of AMIU consumers, namely family consumers and non-family consumers. Family consumers are the ones that buy AMIU for other purposes, apart from household necessities, such as school and eating places. For Salju DAMIU, sale to family consumers is bigger than that to non-family consumers. The sale comparison in 2015 is 75:25 (Table 1). Nevertheless, the sale to family consumers is smaller than that to non-family consumers. The sale to family consumers from 2013 to 2014 increased as much as 33% and from 2014 to 2015 it increased again as much as 5%. On the other hand, the sale to non-family consumers increased by 66% from 2013 to 2014, and 40% from 2014 to 2015. Therefore, it can be said that the slow growth of Salju DAMIU sale was due to the low sale of family consumers.

The competitive condition faced by Salju DAMIU has been getting very tight recently. Although DAMIU growth in Padang city has decreased, for some locations around Salju the DAMIU growth has been increasing (Figure 2). Salju marketing is located in three sub-district areas, namely Kalumbuk, Gunung Sarik, and Gurun Lawas. The DAMIU growth in those three sub-districts increased by 22.73% from 2012 to 2013, and 7,40% from 2013 to 2014. This condition is relatively the same as that in four districts, whose densest distribution is located in Kota Padang, the number of which has kept increasing. The four districts mentioned are Nanggalo District, North Padang District, West Padang District, and East Padang District. Based on this, it can be said that the slow growth of Salju sale is due to a competitive factor.

The increasing number of DAMIU will give consumers a lot of alternatives when deciding to buy DAMIU. The many product choices will make consumers more selective when deciding to buy DAMIU. Research by Pandey and Rai (2014) showed that when deciding to buy products such as clothing, foods, and daily need goods, consumers will choose a place that can give them satisfaction. Then research by Piche and Garcia (2001) proved that price was the main factor for consumers to buy types of the same food.

To increase sale, Salju DAMIU must be able to maintain consumers it has and increase the number. Therefore, DAMIU needs to choose clear market targets that can give it benefits. To identify appropriate market targets, it is important to carry out segmentation based on consumers' behavior. This is because the condition in the field shows that the consumers' behavior (family and non-family) when consuming AMIU varies very much in usage, ways of purchasing and consumption level. By carrying out segmentation based on consumers' behavior, DAMIU can take appropriate steps in making products, setting prices, distributing and promoting the products according to market targets.

The consumers' behavior is an important aspect for a company in making decision and setting strategies. By understanding the consumers' motivation and buying behavior, the company can formulate the strategies and increase the amount of the consumers' purchase (Istudor and Pelau, 2011). A modern marketing concept expects the company to put consumers as the center of company's activities and create values for the consumers' satisfaction (Gunay and Baker, 2011).

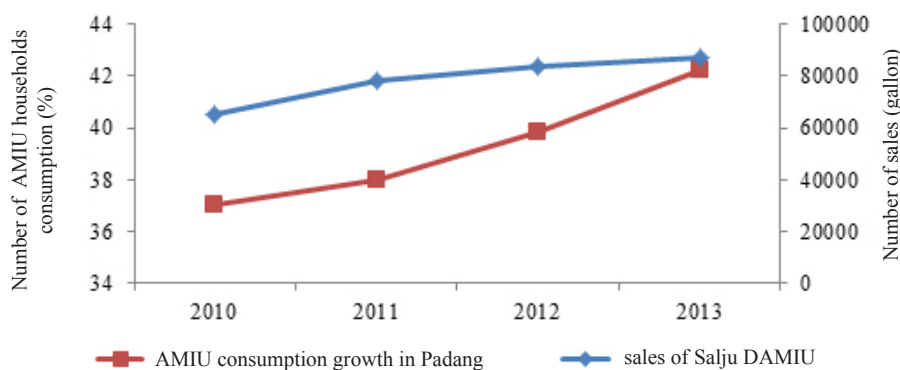


Figure 1. Comparison of AMIU consumption growth in Padang and sales of Salju DAMIU (BPS Sumbar (2014); DAMIU Salju (2014)).

Table 1. Comparison between Salju DAMIU sale to family consumers and non-family consumers

Year	Rate of sale per week (gallon)					
	Family		Non-family		Total	
	Number	%	Number	%	Number	%
2013	1500	83	300	17	1800	100
2014	2000	80	500	20	2500	100
2015	2100	75	700	25	2800	100

Source: Salju DAMIU, 2015.

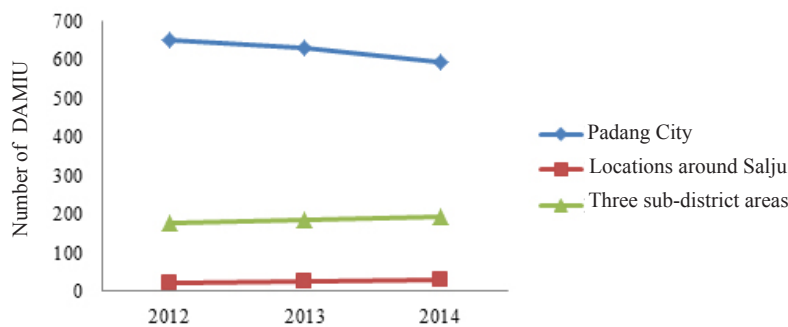


Figure 2. DAMIU Growth (Health Agency of Kota Padang, 2014)

Consumers of different characteristics want the same product with a slightly different attribute for a different reason (Larson, 2004). This is also related to different ways of introducing the needs by the consumers (Venkatesakumar et al. 2008). Segmentation is an important and useful thing for a company; it is even a fundamental principle in a modern marketing concept (Dibb and Stern, 1995). Market segmentation is also an effort to reach competitive superiority and good company's financial performance (Hunt et al. 2004). After carrying out segmentation, the company can determine the desired market targets according to the company's goals, competency, and resources (Kotler, 2009).

Based on the above description, the purpose of the research is to analyze AMIU consumers' segmentation based on their behavior and to recommend the strategies to increase sales for Salju DAMIU through marketing mix.

METHODS

In order to get a comprehensive picture, this research was carried out on AMIU consumers in Kota Padang. However, the locations chosen were Nanggalo District, North Padang District, West Padang District, and East Padang District in Kota Padang. These four districts were chosen because the densest DAMIU distribution was located there.

The research data included primary as well as secondary data. The primary data were the respondents' characteristics and the consumers' behavior that were obtained through questionnaires completed by the respondents, while the secondary data were obtained from related institutions, literary study and others.

The population of the research was AMIU consumers (family and non-family). The size of samples was determined based on the following formula:

$$n = \left[\frac{Z_{\alpha/2}}{e} \right]^2 \rho(1 - \rho)$$

Notes:

- n = number of samples
- Z = normal distribution
- α = level of trust
- ρ = proportion of population
- e = sampling error

Based on the above formula, using $\rho = 1/2$, $\alpha = 5\%$ and $e = 8\%$, resulted in 150 samples. Of the 150 respondents the quota of respondents could be determined, namely 90 respondents for family and 60 respondents for non-family. The non-family respondents were schools, school canteens, and restaurants. The technique for choosing respondents was convenience sampling, i.e. it was based on the available elements and the easiness to get the samples.

The analyses used for segmentation was cluster analyses and CHAID (Figure 3). The segmentation was formed based on the behavior aspect of the AMIU consumers that consists of some variables, namely duration of consuming AMIU, AMIU usage, amount of consumption, types of drinking water sources used, reasons for consuming AMIU, ways of purchasing, intensity of purchase, size of gallon used, and actions taken when the intended DAMIU is closed.

RESULTS

Respondents' Demography

Most family respondents were females, i.e. 61%. The age of respondents varied; the most dominant was between 20 and 30 years old (32%), followed by those aged between 41 and 50 (29%), and the rest was those between 31 and 40 years old and between 50 and 60 years old. Most respondents were married (66%) and there were 7% of respondents that were widows or widowers. The respondents had varied educational levels: graduates of Junior High School, Senior High School, Diplomas, Bachelor Degrees (S1) and Masters Degree (S2). However, most of the respondents were of Senior High School graduates (40%). Like education, types of job also varied, consisting of civil servants (31%), private employees (23%), entrepreneurs (26%) and others like housewives and students were 20%. The amount of monthly expenditure of most respondents was above three millions (50%), and then between 2 and 3 million rupiah (47%) and a few between 1 and 2 million rupiah (3%).

Out of 60 non-family respondents, there were 13 schools, 8 school canteens and 39 restaurants. The amount of monthly expenditure for each respondent varied. However, most of them (85%) were above 25 million rupiah per month. Then there were some respondents that had monthly expenditure between 5 and 10 million rupiah per month (8%), 10 to 15 million rupiah (5%) and 20 to 25 million rupiah (2%). These varied expenditures were related to the types and sizes of the places (schools, school canteens, and restaurants).

Consumers' Segmentation

The variables that form the family consumers segment are consumption levels and their usage, while variables that form non-family segment are duration

of consumption and levels of consumption (Table 2). There are five family segments: the first segment is those that consume AMIU water for drinking only with low consumption level (32 respondents); the second segment is those that consume AMIU water for drinking only with high consumption level (19 respondents); the third segment those that consume AMIU water for cooking only (5 respondents); the fourth segment is those that consume AMIU water for drinking and cooking with low consumption level (10 respondents); and the fifth is those that consume AMIU water for drinking and cooking with high consumption level (24 respondents). Then there are four segments of non-family respondents: the new consumer segment with low consumption level (10 respondents), the new consumer segment with high consumption level (8 respondents), the old consumer segment with low consumption level (3 respondents), and the old consumer segment with high consumption level (39 respondents).

The consumption level of family consumers range between 1 and 5 gallons per week, while in the non-family consumers the consumption level ranges between 1 and 20 gallons per week. Therefore, the definition given to determine the high-low level of the consumption level is its median, namely 3 gallons for family consumers and 10 gallons for non-family consumers. As for the consumption duration for non-family consumers, the definition used is 3 years. This is because the CHAID results classify consumers into two categories, namely those that consume AMIU for 1 until 3 years and those that consume AMIU for more than 3 years. Thus, consumers that have consumed AMIU less than 3 years can be considered as new consumers and consumers that have consumed AMIU for more than 3 years are old consumers.

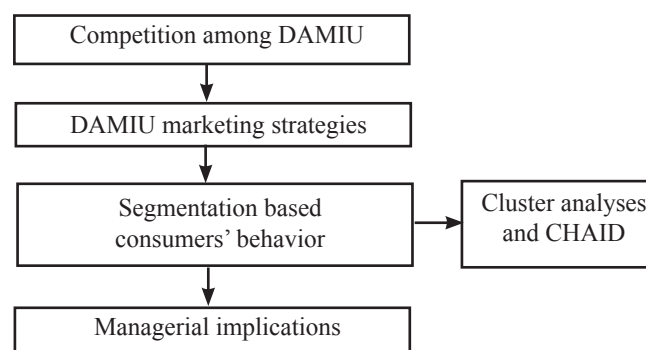


Figure 3. Frame of thought

The formed segments have each own demographic characteristic (Table 3). In the family consumers, the first segment is dominated by females aged between 41 and 50 years old, married, senior high school level, working as private employees and expenditure 2 until 3 million rupiah per month. The second segment is mostly females aged between 20 and 30 years old, married, senior high school level, working as civil servants and private employees, and expenditure 2 until million rupiah per month. The third segment is mostly females aged between 31 and 40 years old and between 51 and 60 years old, married, civil servants, S2 level (Masters Degree) and expenditure more than 3 million rupiah per month. The fourth segment is dominated by males, aged between 51 and 60 years old, senior high school level, civil servants, and expenditure more than 3 million rupiah per month. The fifth segment is dominated by females aged between 41 and 50 years old, S1 level (Bachelor degree), working as civil servants, and expenditure more than 3 million per month.

Basically age, sex, and marital status among each segment member vary a lot and are evenly distributed. For educational levels, types of job, and amount of expenditure per month in the third segment is quite significant, in which all members are of S1 and S2 graduates, working as civil servants and the amount spent per month is more than 3 million.

To find out whether there is correlation between demographic variables and segments, it is important to carry out chi-square test. From the chi-square test it is found out that there is no significant correlation between age, sex, marital status and types of job and segments. However, there is a significant correlation between education level and the amount of expenditure per month on the one hand and segments on the other.

Demographic characteristics of each segment of non-family can be seen in Table 4. The first segment consists of canteens and schools with expenditure amount 5 to 10 million per month. The second segment is restaurants and schools with expenditure amount more than 25 million rupiah. The third segment is schools with expenditure amount more than 20 million rupiah per month. The fourth segment is restaurants and schools with expenditure amount more than 25 million rupiah per month. The expenditure amount of the first segment ranges between 5 to 15 million rupiah and more than 25 million rupiah. The second segment, on the other hand, spends more than 20 million rupiah per month, and the third and fourth segments all have expenditure amount of more than 25 million rupiah per month.

Chi-square test is carried out to find out whether there is a significant correlation between a demographic variable and segments. The results show there is a significant correlation between types of place and amount of expenditure on the one hand and segments on the other.

Details about consumers' behavior in each segment can be seen in Table 5. Most members of family segment have consumed AMIU for more than 3 years; only the third segment have consumed AMIU for less than 3 years. As for non-family consumers there are 2 segments that have consumed AMIU for more than 3 years. (The third and the fourth) and 2 segments that have consumed AMIU for less than 3 years (the first and the second). The first and second segments in the family consumers only consume AMIU for drinking, the third segment consumes AMIU for cooking only, and the fourth and fifth segments consume AMIU for drinking and cooking. On the other hand, all segments of non-family consumers consume AMIU only for drinking.

Table 2. Consumer Segmentation

Consumption level	Family			Non-family	
	Usage			Consumption duration	
	Drinking	Cooking	Drinking and cooking	New (≤ 3 years)	Old (> 3 years)
Low ^a	32	5	10	10	3
High ^b	19	0	24	8	39

^aLow if ≤ 3 gallons/week for family and ≤ 10 gallons/week for non-family

^bHigh if > 3 gallons/week for family and > 10 gallons/week for non-family

Table 3. Demography of family consumer segment

Demography	Segment (%)				
	1	2	3	4	5
Age (years)					
20 - 30	31	47	20	30	25
31 - 40	25	16	40	20	17
41 - 50	38	26	0	10	33
51 - 60	6	11	40	40	25
Sex					
Male	31	42	40	60	38
Female	69	58	60	40	62
Marital status					
Married	62	63	80	70	67
Unmarried	25	37	0	30	29
Widow/Widower	13	0	20	0	4
Education level					
Junior High School	19	5	0	10	4
Senior High school	53	47	0	40	25
Diploma	6	16	0	10	8
S1	16	32	40	30	63
S2	6	0	60	10	0
Types of job					
Civil servants	13	32	100	50	33
Private employees	31	16	0	20	25
Entrepreneurs	28	32	0	30	21
Others	28	20	0	0	21
Amount of expenditure/month					
Rp 1million – Rp 2 million	9	0	0	0	0
Rp 2 million – Rp 3 million	78	53	0	20	21
> Rp 3 million	13	47	100	80	79

Table 4. Demographic segment of non-family consumers

Demography	Segment (%)			
	1	2	3	4
Types of place				
School	20	38	100	13
School canteen	80	0	0	0
Restaurant	0	62	0	87
Amount of expenditure per month				
Rp 5 million – Rp 10 million	50	0	0	0
Rp 10 million – Rp 15 million	30	0	0	0
Rp 15 million – Rp 20 million	0	0	0	0
Rp 20 million – Rp 25million	0	13	0	0
> Rp 25million	20	87	100	100

All segments of family consumers consume AMIU less than 5 gallons a week. If we put it in details, the first, third, and fourth segments in the family consumers consume AMIU less than 3 gallons a week, while the second and fifth segments consume more than 3 gallons. The first and third segments of non-family consumers consume less than 10 gallons per week, while the second and fourth segments consume more than 10 gallons per week. All segments in family and non-family consumers consume only AMIU, except the

third segment of family consumers that also consume AMDK gallons. This is because consumers consume AMIU and AMDK for different purposes. The reasons for consuming AMIU vary within each segment. The first and second segments of family consumers mostly consume AMIU because the price is cheap, while the other three segments consume AMIU because the quality is guaranteed. On the other hand, the non-family consumers consume AMIU because it is cheap and practical.

The method of buying that is used by most members of family segment is the same that is sometimes they buy it themselves, and sometimes it is delivered. Non-family segment, on the other hand, has it delivered. The purchasing intensity that is used by most members of family segment is once or twice a week, while the members of non-family segment varies. Only the third segment buys once or twice a week.

The size of gallon used by each segment of family is mostly 19 liters and all non-family segments also only use 19 liters. When the intended DAMIU is closed or finished, most family consumers and all non-family consumers will turn to other DAMIU. Only the third segment of family consumers will turn to AMDK gallon.

Table 5. Distribution of samples based on AMIU consumer behavior and segments

Notes	Family segment (%)					Non-family segment (%)			
	1	2	3	4	5	1	2	3	4
Duration of AMIU consumption									
< 1 year	0	0	0	0	0	0	0	0	0
1 to 2 years	13	5	20	0	0	30	0	0	0
2 to 3 years	6	5	80	30	25	70	100	0	0
> 3 years	81	90	0	70	75	0	0	100	100
AMIU usage									
Drinking	100	100	0	0	0	100	100	100	100
Drinking and cooking	0	0	0	100	100	0	0	0	0
Cooking	0	0	100	0	0	0	0	0	0
Amount of AMIU consumption									
1 to 5 gallons	100	100	100	100	100	0	0	0	0
6 to 10 gallons	0	0	0	0	0	100	0	100	0
11 to 15 gallons	0	0	0	0	0	0	50	0	38
> 15 gallons	0	0	0	0	0	0	50	0	62
Types of drinking water source									
AMIU only	100	100	0	100	100	100	100	100	100
AMIU and AMDK gallon	0	0	100	0	0	0	0	0	0
Reason for consuming AMIU									
Cheap	56	63	0	30	8	40	38	33	56
Practical	41	32	20	30	29	60	62	67	44
Guaranteed quality	3	5	80	40	63	0	0	0	0
Methods of buying AMIU									
Come directly	18	32	0	10	17	0	0	0	0
Sometimes come sometimes delivery	41	36	0	50	50	0	0	0	0
Delivery	41	32	100	40	33	100	100	100	100
Intensity of AMIU purchase									
1 to 2 times	83	58	100	50	62	10	12	100	13
3 to 4 times	19	41	0	50	38	10	63	0	56
5 to 6 times	0	0	0	0	0	80	25	0	21
> 6 times	0	0	0	0	0	0	0	0	10
Size of gallons used									
19 liters	94	74	100	60	88	100	100	100	100
19 liters and 10 liters	0	10	0	40	8	0	0	0	0
19 liters and 5 liters	6	16	0	0	4	0	0	0	0
Actions when DAMIU closed									
Buy AMDK gallon	0	0	40	0	4	0	0	0	0
Buy other DAMIU	97	100	60	90	96	100	100	100	100
Cooking water	3	0	0	10	0	0	0	0	0

Managerial Implications

Based on the research results, there are some recommendations for DAMIU in relation with consumers' segmentation according to their behavior. With the information on segmentation DAMIU can pay attention to the criteria for optimal market targets. DAMIU can trace the large-sized segment and high consumption level for both family and non-family consumers.

For Salju DAMI, the sale contribution of family consumers is very big. Therefore, straying the family segment with high consumption level will be very beneficial. The Salju sale growth on the family consumers has slowed down. This proves that there is not much increase in the number of consumers or even no growth at all. To improve the sale, it needs more than maintaining the existing consumers. Salju DAMIU must be able to increase the number of new consumers. The demographic characteristics of the target family segment are dominated by married females of 20 to 30 years of age, with S1 degree and civil servants, and their expenditure is more than 3 million rupiah per month.

Furthermore, straying the non-family segment whose consumption level is also high can give a lot of benefits to Salju DAMIU. Although the non-family consumers' contribution to Salju DAMIU sale is not big, its sale growth is bigger than the sale growth of family consumers. This shows that there is a bigger potential of the increase in sale contribution in the future. Therefore, DAMIU must also be able to maintain the existing non-family consumers, and thus acquiring new consumers. The non-family target segment consists of restaurants with its expenditure above 25 million rupiah per month.

To be able to maintain and increase new consumers, both family and non-family, it is important to pay attention to the segment target behavior. Most argue that the reason why they consume AMIU is it is cheap and it maintains the product quality produced. Therefore DAMIU needs to maintain the cheap price and its product quality. While family consumers come and buy the product by themselves and also have delivery order, all the non-family consumers make use of delivery service. Thus, the DAMIU must be able to present their best performance when dealing with consumers that come to the spot and those that prefer delivery order. Other information is concerning the sale behavior where the

consumers switch to other DAMIU products when the intended DAMIU is closed. Therefore, DAMIU must determine the operational time and optimal delivery time according to the consumers' sale time. Also it must keep the availability of products to avoid consumers change their mind in terms of purchasing.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the behavior attribute, there are five segments of family consumers and four segments of non-family consumers. Each family segment is different in terms of usage and consumption level, where the first segment uses AMIU for drinking only, with low consumption level, the second segment uses AMIU for drinking only with high consumption level, and low consumption level and low consumption rate, the fourth segment uses AMIU for drinking and cooking with low consumption level, and the fifth segment uses AMIU for drinking and cooking with high consumption level. On the other hand, the non-family segment is different in terms of consumption and consumption level, where the first segment is new consumers with low consumption level, the second segment is new consumers with high consumption level, the third segment is old consumers with low consumption level, and the fourth segment is old consumers with high consumption level. Salju DAMIU can stray the segment with high consumption level, both the family and non-family consumers, namely the second segment and the fifth segment in the family consumers, and the second and fourth segments in the non-family consumers.

DAMIU must be able to maintain the product quality produced and also maintain the price. In terms of distribution, DAMIU needs to give the best performance, whether servicing the consumers that come directly or those that ask for delivery service. They also need to determine optimal opening time and delivery time according to the consumers' buying time.

Recommendation

In order to reach the DAMIU's goal to increase sale, it is important to maintain cooperation among all parties involved, especially the workers that come directly, when servicing consumers. Further research can be carried out by discussing expectations, satisfaction, loyalty

and attributes that become the main considerations for consumers when deciding to buy.

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