

## GAS STATION COMPETITIVE INTENSITY IN JAKARTA: A CONSUMER PERCEPTION

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**Abstract**-The competition of vehicle fuel retail industry will rise due to Indonesian government's plan to reduce fuel subsidy. The plans are to allow the consumption of subsidized fuel only for the actual subsidy target. Currently, those who do not belong to subsidy target are still allowed to consume the subsidized fuel. This can be seen that seventy-seven percent (77%) of subsidized vehicle fuel are consumed by the middle-high class. When the plan is implemented, the middle-high class who used to consume subsidized target due to the price will have to consume non-subsidized fuel. They will have wider option since Pertamina is not the only company that sells non-subsidized fuel. Therefore, Pertamina will face a tighter competition with Shell and Total. Thus, Pertamina has to set strategy to win the future competition. This research has purpose to investigate the consumer perception toward three gas station companies in Jakarta, which are Pertamina, Shell, and Total. The methods used are gap analysis and multidimensional scaling (MDS) which is then used to build a perceptual map. The population is the amount of personal car in Jakarta, which is 2,742,414. The minimum sampling size is 100 people and the author took sample of 125. For data collecting, the author used questionnaire that consist of questions about each gas station performance toward several attributes, which are extracted from the 7P marketing mix. The result shows that Pertamina has strong perception on fuel price, access, facilities, accuracy, and advertising attributes. Shell has a strong perception on capacity, sales program, personnel appearance, personnel performance, and comfort attributes. Total has strong perception on fuel quality and cleanness attributes. Pertamina need to do some improvement on the attributes that belong to preferred attribute such as, consecutively, fuel quality, comfort, cleanness, personnel appearance, personnel performance and comfort.

**Keywords:** gas station, fuel retail, Jakarta, competition, MDS, gap analysis, perceptual map, consumer perception.

### Introduction

Indonesia has high gasoline consumption which is reflected by the high amount of motor vehicles. Indonesian Bureau of Statistics stated that there are 97,3 million motor vehicles including personal vehicle, public transportation and commercial vehicle. This condition shows that Indonesia has a very good gasoline market which attracts foreign company to get onto. Pertamina, which was the single gasoline retailer in, now has several direct competitors. There are Shell from USA, which has 54 stations, and Total from France, which has 16 stations. In Jakarta, Shell has 34 gas stations and Total has 9 stations.

Currently, most of people use subsidized gasoline which is the lowest quality one, rather than the good ones. This is concluded from the Pertamina sales data, in 2013, the sales of subsidized gasoline (Premium) is 13,107,192,000 US dollars, and for non-subsidized fuel (pertamax, pertamax plus, and pertadex) is 633,770,000 US dollars (Pertamina Annual Report, 2013).

When Indonesia were still the member of OPEC, Indonesia has a high surplus of oil production. On that day, Indonesia were a net exporter. Government made a policy to issue subsidy for oil fuel so

that all of people can benefit it. But then, the consumption had grown very high. Government did not realize it earlier and it was already late to revoke the subsidy because people already have a very high dependence to the subsidized gasoline (Indirasardjana, 2014).

However, the subsidy distribution today is not effective. Seventyseven percent (77%) of subsidized gasoline are consumed by middle-high class (Wacik, 2014) which do not belong to the subsidy target. Subsidy has taken high portion on the national budgeting and it should be allocated for another necessities.

The closest plan that Indonesia Government has is to optimize the subsidy distribution by revoking the consumption of subsidized gasoline for some segment, which is medium high class of people, and personal vehicle that will be conducted in 2014. There are two options of plans. First, subsidized gasoline can only used by yellow-plate vehicle (public transportation), two-wheeled and three wheeled vehicle. Second, it is same with the first option with additional of black-plate vehicle which is made before 2005 ([www.esdm.go.id](http://www.esdm.go.id), 2014). Moreover, Joko Widodo, as the chosen President, also have a further plan by revoking all the oil subsidy within 4 to 5 years ([detik.com](http://detik.com), 2014).

Thus, those who do not belong subsidized gasoline target have to buy non-subsidized gasoline, which have higher price. Then, people, who used to prefer Pertamina's Premium, will face an option whether to choose Pertamina, Shell, or Total as they are the players of non-subsidized gasoline market. However, the non-subsidized gasoline competition will be raised significantly. The top quality gasoline from each company will compete on quality, they are: Pertamina and Pertamina Plus from Pertamina; Super and V-Power from Shell; and Performance 92 and Performance 95 from Total.

In this future competition, many aspects will be considered more. Pertamina has already had a good start by having much more outlets than the others but by lying just on that thing will be not a good decision. It is time for Pertamina to set a strategy by knowing first the consumer perception towards them, Shell, and Total then improving what they strong at and covering what they weak at. To analyze the competitive intensity of gas station industry, the author investigated the service marketing mix, which consist of 7 components, are the aspects that may be considered by consumers. Thus, it has to be observed to know what consumer think, feel, and or experienced toward those three gas station brands.

#### Research Objectives

This research has purpose to investigate consumer perception towards three gas station companies in Jakarta which are Pertamina, Shell, and Total by using the seven components of marketing mix perspective. In addition, the end result, which is perceptual mapping, will show the brand position of each gas station brand on marketing mix aspects. Furthermore, the result of Importance Performance Matrix of Pertamina may be used by Pertamina to set a strategy and tactics on their further competition with Shell and Total in the fuel retail segment.

#### Research Limitation

There are several limitation on this research. They are

1. The target research is only personal vehicle owner who do not belong to subsidized gasoline target so that the result will be presenting only some group of gas station target market
2. Since this research is conducted in Jakarta, the result will be presenting only the Jakarta market perception.
3. Fifth, the error margin used is 10% or the level of confidence is 90%. Because the questionnaire has quite big amount of questions, the writer need to provide an expensive gift for the respondent. Also, because of the difficultiness to find the respondents on this research, very

much time is needed. Thus, the writer used 10% of error margin so that the sample size needed is not too large.

## Literature Review

### Marketing Mix

Marketing mix is a set of marketing tools that help a company to create something that market need. Marketing mix consist of several elements that company can do to influence the demand for its product (Kotler, 2009).

Marketing mix consists of internal elements that can be controlled by the company. A good marketing strategy blends each element into an integrated program to achieve the marketing objectives. Since it uses of all the instruments in marketing aspects, those components will help the company to fulfill the consumers wants and needs then communicate their product and its value to the consumers due to the using of all the instruments in marketing aspects. It also constitutes the company's tactical tool kit for establishing strong positioning in target markets' mind.

### Gap Analysis

Gap analysis is a method that compares the actual performance and desired or potential performance. Sometimes it is referred as need-gap analysis, need analysis or need assessment. A company will determine the factors that define its current state, list down the factors needed to reach its target state and then plan on how to fill the gap between the two states. This is important because it helps to identify if a company is performing to its potential and if not performing, why it is not performing to its potential. This helps to identify flaws in resource allocation, planning, production etc.

### Perceptual Map

Perceptual map is visual representation of a respondent's perception of objects on two or more dimensions. Each object has its spatial position on the perceptual map that shows the relative similarity or preference to other objects with regard to the dimensions of the perceptual map (Hair, 2006). The word 'perceptual' comes from the word 'perception', which basically refers to the consumers' understanding of the competing products and their associated attributes. The most common presentation format for a perceptual map is to use two determinant attributes as the X and Y axes of a graph, however there are also other formats that are sometimes used.

### Multidimensional Scaling (MDS)

Multidimensional scaling analysis is a procedure that used to present consumer perception and preference spatially with visual presentation. Perception or relations between stimuli are psychologically shown as geographic relation between the dots on a multidimensional space. The spatial map axis is assumed to show psychological basis or underlying dimension that are used by respondents to form their perception and or preference.

There are two data collecting techniques on MDS, perception data and preference data. This data used the preference data one. Preferences data sorts the brands or stimulus that shown as respondents' preferences for some attributes or characters. Respondents are asked to make brands ranking from most adorable to the least. The alternative way is to ask respondents to make paired-brand comparison and make the rank. For example, a respondent like more to A-B pair than C-D pair. The other method is by getting preferences assessment of each brand. If the spatial map is formed based on preferences data, the space between dots means to preferences rank. The data collected on this research is derived perception data.

## Methodology

### Research Steps

Step 1, within this step, author determines the problems from an issue. For that problem, the author defines the research objectives and method that would be used.

Step 2, within this step, author search for related literature to study the research object and the methods.

Step 3, within this step, author collects the data needed using questionnaire. The respondent were asked first whether they fulfill the criteria.

Step 4, within this step, firstly, author does the data validity and reliability test. The validity test would be done by using factor analysis in SPSS. The validity test would be conducted by each attribute. The reliability test would be conducted on SPSS as well which is already provided on it. Then, the author does the data analysis using the determined method, which are gap analysis and multidimensional scaling that used to build a perceptual map. On the gap analysis, the author analyzes the gap between: performance of Pertamina and consumer importance level; and performance of Pertamina to performance of Shell and Total on each attribute. Then, the author would do paired t-test to find on which attributes that have significant gap. On that t-test, author would use Bonferroni correction method to define the critical point of significance since the t-test process would be done by pairing more that one pair at once. On the MDS, the average score of each company on each attribute will be processed with MDS analysis on SPSS to get perceptual map of the companies include the ordinate number as an output. To plot the attributes' dot on the map, the author would use linear regression to get the coordinate of the attributes' dots.

Step 5, within this step, author will interpret the data processing result and make the conclusion.

### Sample Size

The population of this research is amount of personal car in Jakarta, which is 2,742,414. To determine the minimum sample, the author used Slovin's formula with error of 10%. The minimum sample of this research is 100. The author collected 125 samples to accommodate any mistake occur. The criteria of respondents are people who live in Jakarta, have their own car, and have experience to refuel at Pertamina, Shell, and Total.

Questionnaire Design

Table 1. Translations of Marketing Mix Components to Questions

Marketing Mix Components	Attributes	Questions
Product	Product Quality	Fuel Efficiency
		Gas Lightness
		Fuel Purenness
Price	Fuel Price	Non-subsidized fuel price
Place	Gas Station Location	Location from home
		Location from the place to do daily activity
		Easiness of accessing gas station
Promotion	Advertisement	Printed Media
		TV
		Radio
		Online Media
		Outdoor
		Sponsorship
	Sales Program	Payment Receipt Exchanging
		Cooperation with Other Brand
Physical Evidence	Facilities	Toilet
		Tire Charging
		Carburetor Water
		ATM Centre
		Minimarket
		Café
		Musholla
	Personnel Appearance	Personnel Cleanness
		Personnel Neatness
	Cleanness	Gas Station Cleanness
		Fuel Dispenser Cleanness
		Toilet Cleanness
	Process	Refueling Comfort
Time Needed on Refuel Process		
Payment Method Completeness		
Customer Doesn't Need to Get Down From Vehicle		
Staff Offer the Receipt Well		
Personnel Help for Tire Charging		
Personnel Help For Carburetor Water Refueling		
Personnel Gives Additional Service		
Refueling Accuracy		Gasoline Refueled Accurately
		Gauge Meter Always Zeroed
People	Personnel Performance	Personnel Friendliness
		Personnel Care
		Personnel Gives the Change Money Well

The respondents were asked to give assessments of each gas station's performance and the importance level of each sub-attribute (questions).

## Data Analysis

### Consumer Perception

This analysis is to compare the performance of Pertamina to other gas stations and to importance level. The method is to make a score of each attribute that each company has and the score of each attributes for the consumer importance level. The score is built by averaging the score of each questions of an attribute.

Table 2: Score of Gas Stations Performance and Consumer Importance Level

ATTRIBUTES	PERTAMINA	SHELL	TOTAL	IMPORTANCE
Fuel Quality	5.28	5.54	5.62	5.28
Non-subsidized fuel price	5.86	4.62	4.35	5.29
Access	5.84	4.28	3.90	5.27
Capacity	5.28	5.54	5.46	5.86
Facilities	4.99	4.82	4.71	5.85
Accuracy	5.74	5.64	5.64	5.79
Advertising	5.03	4.39	4.31	5.80
Sales Program	4.55	4.96	4.79	5.70
Cleanness	4.54	4.84	4.92	5.45
Personnel Appearance	4.54	4.62	4.55	4.85
Personnel Performance	4.89	4.93	4.86	4.88
Comfort	4.38	5.24	5.21	4.84
Min	4.38	4.28	3.90	4.84
Max	5.86	5.64	5.64	5.86
Average	5.08	4.95	4.86	5.40

As shown on the Table 2, in average, none of the gas station even meets the consumer importance level. The closest gap between the gas station and consumer importance level is Pertamina (-0.32) then followed by Shell (-0.45) and the last is Total (-0.54).

On fuel quality attributes, all gas stations have positive gap or exceed the consumer importance level. On non-subsidized fuel price, only Pertamina that exceed the importance level. On access, also, only Pertamina that exceeds the importance level. On facilities, accuracy, advertising, sales program, and personnel appearance attributes, none of them exceed the importance level. On personnel performance, only Total that does not meet the importance level. Last, on the comfort attribute, only Pertamina that does not meet the importance level.

Pertamina is on the first rank for attribute: non-subsidized fuel price, access, facilities, accuracy, and advertising. Shells become the first rank on sales program, personnel appearance, personnel performance, and comfort. Total become the first rank on fuel quality and cleanliness attribute. Pertamina become the last rank on attributes of: fuel quality, capacity, sales program, cleanliness, personnel appearance, and comfort. Total become the last rank on attributes of: non-subsidized fuel price, access, facilities, accuracy, advertising, and personnel performance.

Consumer Preference Attribute

Table 3. Consumer Preferences Attributes

Rank	Attribute
1	Fuel Quality
2	Access
3	Comfort
4	Accuracy
5	Price
6	Cleanness
7	Capacity
8	Facility
9	Personnel Performance
10	Personnel Appearance
11	Sales Program
12	Advertising

This preference rank is built by using consumer preference data. Respondents are asked to rank the attributes that they consider when they refuel their vehicle to a gas station.

Perceptual Map

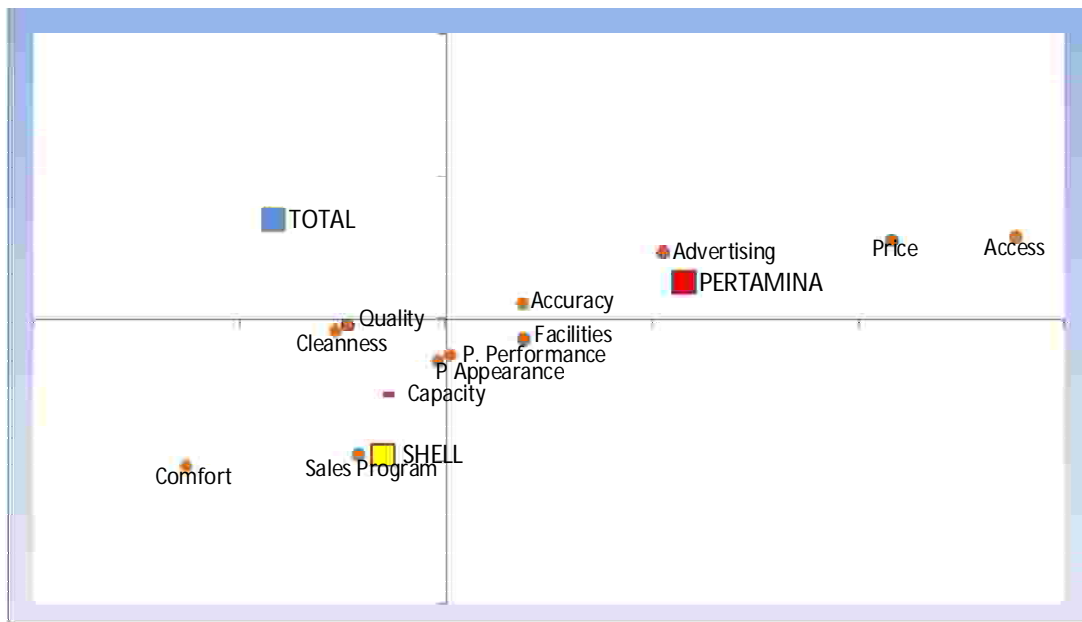


Figure 1. Perceptual Map of Gas Stations in Jakarta

Figure 1 shows the perceptual map of gas stations in Jakarta towards the 12 attributes. The closer its distance, the closer the relation between the gas station and the attribute. The relation is how well is the gas station represent the attribute. The Pertamina has the closest distances to attributes of advertising, price and access. Shell has the closest distances to sales program, comfort, capacity, and personal performance. Total has the closest distances to attributes of fuel quality, and cleanness.

## Conclusion

Pertamina has several works to do in order to compete with Shell and Total. Based on the performance score and perceptual map, Pertamina has strong point relatively to other company on attributes of fuel price, access, accuracy, facilities and advertising. The weakest attributes of Pertamina are fuel quality, capacity, sales program, cleanness, personal appearance, and comfort. Shell has strong point on attributes of capacity, sales program, personnel appearance, personnel performance, and comfort. Based on the Shell's rank on each attribute, Shell never takes the last rank. Total has strong point on attributes of fuel quality and cleanness. The weak points of Total are fuel price, access, facilities, accuracy, advertising, and personnel performance.

Based on the importance-performance matrix, Pertamina should improve the sub-attributes that belong to high importance-low performance quadrant, which are toilet cleanness, personnel cleanness, personnel neatness, and the time need for queuing. Also, Pertamina need to keep concern on the attributes that belong to high importance-high performance quadrant, especially for the attributes that has relatively lower score that Shell and Total, which are all the fuel quality, cleanness and personnel performance sub-attributes.

## Recommendations

Recommendation for Pertamina based on this research result to face the nearest future competition:

- **Fuel Quality**  
Fuel quality is one of the most preferred attributes by consumer. Even though Pertamina has already has good performance toward importance level, if it is compared to other gas stations performance, Pertamina has relatively low performance score. Thus, Pertamina has to anticipate it for future competition. They may need to make a marketing program that can build good consumer perception. An intensive campaign may be used to make people believe that Pertamina's fuel has same quality with foreign companies' fuel or even better than them.
- **Comfort**  
Queuing time is difficult to control due to the high amount of customer. The most possible aspect that Pertamina improve the added-service performance, such as tire charging and water carburetor refueling by placing personnel to serve the customer. Also, Pertamina need to add some service like Shell and Total do to their customer such as car windshield (windscreen) refueling.
- **Cleanness**  
Pertamina has to have more concern on cleanness aspect to all of their gas station. Even though Pertamina has already had a good performance score, they actually have relatively the lowest score compare to Shell and Total. The components that Pertamina has to improve the cleanness are the outlet cleanness, fuel dispenser, and the facilities, especially toilet.
- **Sales Program**  
Pertamina has to make intensive sales program to compete with Shell. Not just make it, Pertamina also need to communicate it well to the customer. The Pertamina's personnel may tell the customer when they refuel the vehicle.
- **Personnel Appearance**  
Even it is not too preferred, it will be good for Pertamina too improve their personnel appearance. They have to control their personnel appearance well. It can be done by tighten the rule about appearance such as uniform cleanness and neatness.



For better research in the future, the recommendations are

- The error value for sample size determination may be decreased to 5% or even to 1% so that the confidence of the research result can be increased.
- The scope of research may be widened to Jabodetabek and or widened more to another big city in Indonesia such Bandung and Surabaya where the Shell and Total gas station is also located.
- The attributes may have to be weighted to increase the quality and accuracy of attributes ranking which is related to the gas station scoring quality and accuracy.
- As there is a difference between Pertamina gas station owning and operation which can be differentiated by the gas station code (3.1 is owned and operated by Pertamina, 3.4 is owned and or operated by a dealer), for better research, it may be separated or it may be focused on one gas station code. It will may have a different result since the 3.1 has better condition and operation than the 3.4 one.

## References

- Anonym. 2014. Pengehematan BBM, Agar BBM Bersubsidi Tepat Sasaran. Retrieved from <http://www.esdm.go.id/berita/40-migas>
- Amelia R, Mel. 2014. Jumlah Kendaraan di Jakarta Tahun Ini Diperkirakan Terus Meningkat. Retrieved from <http://news.detik.com>
- Eko Wicaksono, Pebrianto. 2014. Pertamina, Shell, dan Total, Harga BBM Mana Paling Mahal?. Retrieved from <http://bisnis.liputan6.com>
- Hair, et al. 2006. Multivariate Data Analysis. New Jersey: Pearson
- Indirasardjana, Pria. 2014. 2020 Indonesia Dalam Bencana Krisis Minyak Nasional. Jakarta: Gramedia Pustaka Utama.
- Kotler, Philip & Gary Armstrong. 2009. Principle of Marketing 13<sup>th</sup> Edition. United States: Prentice Hall.
- Nurhayat, Wiji. 2014. Jokowi Mau Hapus Subsidi BBM, Prabowo Kurangi Subsidi Orang Kaya. Retrieved from <http://finance.detik.com/>
- Pertamina. 2013. Consolidated Financial Statement 2013. Retrieved from <http://www.pertamina.com/investor-relations>
- Shell. 2014. Sekilas Tentang Shell. Retrieved from <http://www.shell.co.id/id/aboutshell>
- Total. 2014. Tentang Kami: Total di Indonesia. Retrieved from <http://www.id.total.com/in/tentang-kami.html>
- Valarie A., Zeithaml, Gremler Jo Bitner, & Dwayne, D. Gremler. 2006. Service Marketing 4<sup>th</sup> Edition. New York: McGraw Hill