

# APPLICATION OF THE BCOR ANALYSIS FOR THE DETERMINATION OF GASOLINE PRICING IN INDONESIA

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## Abstract

Gasoline pricing in Indonesia is not an easy task to do. The problems may vary from politics, social, economy, to technology. This analysis evaluates what the impact of BCOR to the government to great extent will be if the pricing follows one of these alternatives: current price condition, price in neighboring countries, and fair price (market mechanism price). When the impact is clear, it may help the government have a standardized gasoline pricing. It's clear that what the government has been applying in determining gasoline price proves unstable, uncertain, and unpredictable. In the thought-competitive world especially the competition to increase, to qualify oil reserves, Indonesia must level off its quality by having fixed pricing mechanism.

The supply and distribution of petrofuel (BBM) aims at gaining the maximal profit for the prosperity of the people and the development of the nation, sufficing domestic needs and providing domestic crude oil. The supply and distribution go through along and complex process. Petrofuel deals with many people's life, industrial stimulus, foundational factor of national development, and budget. The number of factors considered by decision makers reflects the complexity of petrofuel pricing that can meet many different views. Gasoline pricing is one of petrofuel pricing. Gasoline can be a "price leader" or "effect multiplier" for the prices of other products. Not only does the gasoline price depend on supply and demand, but it also depends on many influencing factors, both internal such as politics and social and external such as the international market price of crude oil. The determination is really impacted by complicated price structure, tangible and intangible. In determining gasoline pricing which is not easy to be solved, it's worth considering taking account of alternatives with dominant weight. Each criterion of respective Benefit (B), Cost (C), Opportunity (O), Risk (R), which relates to alternative is applied to find out the best priority. The primary data are from decision makers.

Out of several prioritized alternatives, there will be gained 3 outcomes: Standard Condition (B/C), Pessimistic B/(CxR) and Realistic (BxO)/(CxR). The best alternative to choose is the one having the greatest Realistic Price and this chosen alternative is considered as a decision of many existing alternatives.

## Introduction

In general, the objective and policy of managing Indonesian energy resources is to utilize them as efficiently as possible for the national development and prosperity of the Indonesian people. Petrofuel (BBM in Indonesian term stands for Bahan Bakar Minyak) as non renewable energy is the product of oil refinery and it consists of many different specifications, types, and complexities. At this point, petrofuel consists of avgas, avtur, gasoline (premium), kerosene, automotive diesel oil / ADO, industrial diesel oil / IDO and fuel oil. In Indonesia, oil industry is an integrated industry ranging from upstream activities to downstream ones and passes through along chain before its product such as petrofuel reaches the customers.

In determining gasoline price, the price of crude oil in international market and the situation of domestic economy should be considered, but the need and the purchasing power of the people occupy the first priority. In gasoline pricing for domestic market, what becomes an important question is the measure and nature of influencing factors, including tax, which arise from any single inaccuracy fluctuating between application of actual price and on-that-day-economical price.

In such case, the role of the government is very important to eliminate subsidy, for it reflects unfair (pseudo) trading. Through Pertamina (State owned oil company), the government also has the responsibility to provide and preserve petrofuel by executing all necessary measures, such as importing, because domestic refinery can supply only 75-80% of national needs. It seems that Indonesia needs to import oil (approximately 50 thousand Bph ) from Singaporean refinery, considered to be more efficient. From this point of view, Indonesian government plays the significant role to determine or fix the price of any type of petrofuel product because it is the government alone can take political and social responsibility. Since the types of petrofuel are many, this research focuses on one type only, gasoline which has more parameters compared to any other types of petrofuel and which can also be compared to gasoline in other countries. Not only can gasoline or gasoline pricing be a big issue because almost every person all over the globe needs it, but it also attracts almost every government around the world to get involved in carefully producing it, increasing its reserves, and exploring it by doing research for its diversification. Gasoline is an important issue in almost every country and it is still one of human basic needs, especially for transportation in modern life. The world needs for gasoline are increasing as the world needs for oil which reach at about 54 % of the world total energy. This increase is attributable to economic growth of a country shown by the improvement in social welfare, the betterment of living standard, and the increasing number of means of transportation.

Compared to gasoline price in some other countries, both in ASEAN region and in other regions such as USA and Europe, gasoline price in Indonesia is very cheap. This happens because even though Indonesia produces oil and natural gas, Indonesian government subsidizes the gasoline price for the lack of purchasing power of the people. Therefore in Indonesia, gasoline price is a very essential factor and it is strategic enough especially in domestic affairs. Strategic factors such as politics, social, economy and technology become important criteria in gasoline pricing in Indonesia. These factors will be evaluated by using BCOR (Benefit, Cost, Opportunity, and Risk) analysis. The expected result in what the impact of BCOR to government would be if the price determination followed one of these alternatives: (domestic) current price condition, price in neighboring countries, or fair price/market mechanism price.

### **Gasoline Pricing Problem**

With various and complex parameters, Indonesia needs to own a systematic petrofuel (BBM) pricing. These parameters have different dimensions, among others, some are feasible and others aren't; some are interconnected and support one another while others may bear conflict between one parameter and another. This problem is tried to be solved through BCOR analysis in order to find out if any possible system to be applied for gasoline pricing in Indonesia. There are so many different kinds of BBM, but this analysis experiments only on one type: gasoline which has the most parameters, among others, gasoline is the second greatest petrofuel production in Indonesia; it's an effect multiplier which means if gasoline price change happens it automatically influences the prices of people's basic needs; and it can be a reference to comparing gasoline prices in other countries.

### **Expected results through BCOR Analysis**

What to expect through applying BCOR model in gasoline pricing is:

1. to find out the highest rank from the calculation result of pair-wise comparison between strategic criteria of factors influencing petrofuel price. The calculation results can also measure the overall consistency of factors (components) through consistency ratio based on logical criteria.
2. to find out the weight of Benefit (B), Cost (C), Opportunity (O), Risk (R) for every alternative.
3. to priorities alternatives, there will be gained 3 outcomes: Standard Condition (B/C), Pessimistic B/(CxR) and Realistic (BxO)/(CxR).
4. The best alternative to choose is the one having the greatest Realistic Price and this chosen alternative is considered as a decision of many existing alternatives.

Then, to check out the agreement of interpretation result. From the analysis, it can be determined the price of gasoline as the best choice of many prioritized alternatives. Finally, this management is expected to provide broad horizon to the decision makers hierarchically and also to manage a systematic network.

### **Chosen Alternatives**

In deciding the chosen alternatives for gasoline price in Indonesia, with inward looking and outward looking considered, there are some important things to take in, among others, the growth of international economy and trade; the demand of national business to increase its competitiveness in order to meet international standard; the purchasing power of Indonesian people; the improvement of national policy on economy such as better market structure, the shift of monopolistic system to oligopolistic one, the shift of economic concentration to economic diffusion because of the existence of local autonomy laws; the right of the customers to be accessible to various product choices they need; and other factors influencing business atmosphere. Based on the various factors above, to determine the petrofuel price is important that international price and domestic cost price be paid attention to because the price considered fair is the price fulfilling national and international criteria. Today, petrofuel pricing uses two boundaries, there are minimum price (landed price) and maximum price (ceiling price). According to the presidential decree no.9/2002 in 2005 the gasoline price follows the market mechanism.

### **The Government Policy**

According to the new regulation, Pertamina in November, 2005, will get rid of its task as a gasoline supplier in the domestic market. The determination of price will be given to the market mechanism (liberalization). It will organize regulations to meet international standard in determining prices of bunker (sea/air) in domestic harbor, for instance.

### **Background Theory**

#### **Analytic Network Process (ANP) Model**

Many people generally make a decision based on a simply hierarchical structure only, that is, goal, criteria, and alternatives. However, Saaty suggests solving complex problems even by applying AHP model alone, confronts with many factors that apparently cannot support decision making. Saaty and Roozan, then, develop ANP. It is one of general theories that can be applied to solve complicated problem, especially to evaluate a problem using a methodology of which influencing factors/criteria have dependence and feedback structure. It can be concluded that ANP model consists of some AHP clusters categorized in many hierarchies (Suparchy, Intarchy, Sinarchy and Hiernet) and that ANP model has dependence and feedback relation one another, both between AHP clusters (outer dependence) and within AHP clusters (inner dependence).

In general, a network system comprises some sub-systems, and they can include several components which may consist of elements. The dimensions of the network and the size of hierarchy depend on the complexity of the subject matter. The basic principle to overcome the problem is by applying the AHP model. This approach starts solving the problem from the least element. Consequently, because the bases of decision making are so complex, the matrix becomes very big. Thanks to modern technology, software "Super Decision Model", help solve even a very complex problem.

The ANP with dependence and feedback is a general framework for a detailed analysis of social, governmental, and corporate decision that is available today to decision maker. It allows both interaction and feedback within clusters of elements (inner dependence) and between clusters of elements (outer dependence). Such feedback best captures the complex effects of interplay in human society, especially when risk and uncertainty are involved. Within the ANP networks of influence one includes all the factors and criteria, tangible and intangible that has bearing on making a best decision. The ANP deals with Benefits, Opportunities, Costs, and Risks (BCOR) separately and then combines them into a single overall answer (Saaty, 1996)

The ANP is a theory of measurement generally applied to the dominance of influence among several stakeholders or alternatives with respect to an attribute or a criterion. The ANP is also applied to evaluate the dominance of criteria with respect to a higher criterion. Dominance is a primitive concept used in making comparisons among elements with respect to the possession of an attribute or the fulfillment of conditions as criteria. A component in the AHP is a collection of elements whose function derives from the synergy of their interaction and hence has a higher-order function not found in any single element. Saaty (2001).

The difference between an influence network and an influence hierarchy is:

In general, hierarchies concern the distribution of a property (the goal) among the elements being compared, to judge which one influences or is influenced more or has greater amount of that property. Networks concern the distribution of the influence of elements on some element with respect to a given property.

### **Application of the ANP to Decision Making**

In making a decision, it needs to distinguish between the hierarchic and network structures that we use to represent its parts. In hierarchy we have levels arranged in descending order of importance. In a network, the components (counterparts of levels in a hierarchy) are not arranged in any particular order; they are connected as appropriate in pairs with directed lines. In both hierarchies and networks the sense of having influence or being influenced must be maintained in the entire analysis; the two should not be mixed together. Structurally, a decision can be divided into three parts (Saaty):

1. The Value System (Subjective Values) i.e.; Satisfaction, Prosperity, Security, Growth, Harmony, etc. or in the rating priorities: very high, high, medium, low, very low.
2. The merits of the decision (Link from Subjective) to Objectives): Benefits, Costs, Opportunities and Risk (BCOR). Several control criteria for each of the four BCOR whose priorities are obtained from hierarchy or network.
3. The Hierarchies or Networks of influences and “objective” facts that make one alternative of the decision more desirable than another.

Often, the analysis is performed backwards from the hierarchies and networks of influence at bottom of the three stages, upwards to obtain deeper understanding and appreciation of the BOCR merits of that decision. Until recently, many examples of the ANP have used the BO/CR ratio to evaluate the final decision (Saaty, 2001).

### **Definition of Each Alternative (Actor), Criterion and Sub-criterion**

#### **The Alternative Determination**

This is the first important instrument considered influencing the gasoline price in Indonesia. This alternative has three types.

#### **1. Alternative Gasoline Current Price ( GCP ),**

Current Price is current gasoline price based on the government regulation/decreed or it's calculated from cost procurement crude oil and product plus operation cost (refining, transportations/distribution, marketing and other cost) divided by the volume of petrol. Gasoline price every region in Indonesia country is the same.

#### **2. Alternative Gasoline Regional Price ( GRP )**

Regional Price is a price considered to represent the price of gasoline in neighboring countries. In this research, the price that Indonesian government takes from the average gasoline price in Singaporean and Malaysian market become reference price and every region in Indonesia country is the same.

### 3. Alternative Gasoline Fair Price ( GFP )

Fair Price is price that consists of at cost selling price plus taxes. Hopefully that price is fair for the government, and fair for the people. With the fair price, the government does not need to give its subsidy in order to make a fair trade, and the government is still able to control the retail price of the tax component. This price will be applied as to implement the Indonesian oil and gas law number 22/2001. The gasoline price in every region can be different.

#### **Drawing Up Alternatives under Benefits, Costs, Opportunities, Risks**

As stated above BOCR analysis is a strategic analysis toward the chosen alternative of gasoline pricing, that is, a certain price accepted by the people, the government and it should not be different too much from gasoline price in neighboring countries. The reasons why the three aspects are important are stated below:

##### 1. The aspect of the people

This aspect is important because the people should afford any types of petrofuel they need, and because the price must adjust to purchasing power of the people. Based on UUD 45 and law on oil and gas Industry no. 22/ 2001 article 3. Oil and Gas operation are aimed at: point d. supporting and developing the national potential in order to be more competitive at the national, regional and international level. Point f, creating employment opportunities, improving the people's just and evenly spread welfare, and safeguarding the preservation of the living environment.

##### 2. The aspect of the government

The elimination or the abolishment of petrofuel price subsidy can only be done by the government because subsidy really burdens national budget. Besides, if the price is lower than production cost, it means that the price is pseudo, or doesn't reflect real price, and that the real trading can't happen. So, it is the government responsibility to determine the price as expected by evaluating integrated factors. If the future price adjusts to law no. 22/2001, an oil and natural gas – that market mechanism determines petrofuel price, still the government can monitor the price by regulating tax components. The government needs to control petrofuel price because oil and oil products are strategic commodity. Especially gasoline is the seconds highest product and because they have multiplier effects. Besides, price control is needed so that supply and demand really accord with national energy planning which states that petrofuel diversification is needed because oil reserves continuously decrease if no oil exploration made.

##### 3. The Aspect of gasoline price in neighboring countries

This aspect is also important since gasoline price in Indonesia is the lowest, even until today, compared to that among ASEAN member countries. What happens now is that smuggling can not be stopped. Therefore, if the price remains low, smuggling will probably be more difficult to stop. On the other hand, if the price is high enough, smuggling can be eliminated or abolished. Moreover, Indonesia needs to import oil as refineries can't supply increasingly domestic demand. This approach must be taken to anticipate regional and global trade such as APEC, AFTA. Monitoring domestic oil reserves and world oil reserves seems to be an imperative.

How to evaluate if the chosen price to be is really appropriate to what expected and if it can accomodate the three aspects. There should be particular measurement to examine them. This influence of Economy (E), Politic (P), Social (S), end Technology (T). Each field is evaluated through Benefits, Costs, Opportunities, and Risks (BCOR).

#### **The definition of strategic criteria:**

##### **1. Benefits**

Benefits mean any strategy that gives profit or advantage to Indonesian government in field of economy, politics, social and technology. This field expectedly reaches national objectives.

**a). Economy**

From this view, the government gains profit since it doesn't subsidize the petrofuel price anymore and because it manages petrofuel regulation in domestic market. Based on law on oil and gas Industry no. 22/ 2001 article 3. point e. increasing the state income in order to contribute maximally to the national economy, and to develop and strengthen the position of Indonesia's industry and trade. For some types of petrofuel, the amount of subsidy is different from one type to another. And the amount of gasoline subsidy is decreasing.

**b). Politics**

Political stability and domestic security can be generated. For instance, chaos, riot, or separatist movement can be prevented if the gasoline price reflects fairness. This fairness should be ideal for all components involved: the government, the corporations, and the consumers.

**c). Social**

The profit gained can be allocated for increasing social welfare of the people, the more prosperous the people, the more prosperous the nation. The current gasoline price is still subsidized because the purchasing power of the people doesn't likely meet the regional or international price.

**d). Technology**

With gasoline price fair and with the government gaining profit, technology will be advanced for oil exploration and exploitation. This mean that oil reserves increase, oil production augments, oil refinery capacities maximize both in quality and quantity that lead to the achievement of government objectives.

**2. Costs**

Costs, here, means any expenses that the government pays due to gasoline price. This is considered a negative or disadvantageous factor.

**a). Economy**

Any economic disadvantages that really burden the government budget such as subsidy, economic cost to restore chaos or riot due to disagreement to the gasoline price set by government. This might happen since the government has to have imported some crude oil in which its price is international price.

**b). Politics**

Political instability may happen because of strike opposing gasoline price. If not managed well, it may lead to disintegration and it may influence investors not to invest in Indonesia.

**c). Social**

It's to risky if the people pay too expensive for gasoline they need. It may increase the number of the poor. Therefore, now the government tries to remove the subsidy and to compensate in other ways to help the people. The compensation might be in forms of education, health aids and public facility improvement.

**d). Technology**

With the gasoline price low or with the government subsidizing, allocated fund for technology development will decrease. This situation can impact on the Enhanced Oil Recovery (EOR) or the exploration.

**3. Opportunities**

Opportunities, here, means any possible chances that give benefit to Indonesian government. They can be in economic, political, social, and technological fields.

**a). Economy**

With the price high, economically the crude oil reserves can be increased, and the production can

be augmented for a longer period time. This increase means improving oil product quality that leads to the increase of government's income.

**b). Politics**

According to national energy planning, the government must be able to provide gasoline or its diversified products that can suit people's needs. The people have the absolute right to obtain any natural resources. This is a basic right for any citizen, and this right is regulated in national constitution (UUD'45) which states that all resources are managed for the prosperity of all citizens.

**c). Social**

Any citizen of the country has the same right to be accessible to the country's natural resources as regulated in national constitution.

**d). Technology**

With technology advanced, the opportunity to develop the product quality, and the refinery improvement will be better.

**4. Risks**

What risks mean here is the loss that Indonesian government may bear because of particular gasoline price. The government can suffer economically, politically, socially, and technologically.

**a). Economy**

Economically, the government may experience abnormal condition due to the high price. The benefit gained may not be sufficient to restore any possibly economic loss.

**b). Politics**

Politically, dispute among the people may take place because political interest can appear as the impact of high price. This condition possibly leads to insecurity and political instability.

**c). Social**

The number of the poor will increase due to the higher cost of living. A risk that can be so alarming even though the government may gain financial benefit from the high price. The problem is how to increase purchasing power of the people.

**d). Technology**

The risks encountered can hamper technology development.

**Methodology**

The initial step is to make a framework by using BCOR model to determine gasoline price in Indonesia. The frame work absorbs Gasoline Current Price (GCP) alternative, Gasoline Regional Price (GRP) alternative and Gasoline Fair Price (GFP) alternative. The model is constructed based on strategic criteria (Economy (E), Politic (P), Social (S), and Technology (T) which calculation method is similar to Analytic Hierarchy Process model heading to a goal as concluded above. To be able to achieve relevant and valid result, it needs to have particular restriction as shown at figure 1 & 2. Based on the AHP clusters, ANP model is made up as shown at figure 3. Then, BCOR network can be done. The scale applied is Linkert scale by marking score for any answer, it can be stated that this scale belongs to interval scale. The score ranges from 5 to 1: 5 is very influential, 4 is influential; 3 is normal; 2 is uninfluential; 1 is very uninfluential. This scoring assumes that the range among the scales is alike. The advantage of this scale is its simple framework and organization which does not take much time to fill in the questioner. Even though this scale does not have absolute answer for the experimented object, the resulted data are expectedly relevant to this research and have validity.

## Data Analysis and Evaluation

The listed questionnaire based on strategic criteria for the three alternatives is handed to three experts to fill in. The result of this questionnaire becomes the primary data which will be analyzed and evaluated in AHP/ANP model. Geometric mean and pair wise comparison matrices do the calculation. This calculation can result in the weight of each alternative, criterion and sub-criterion. The analysis outcome that meets consistency  $CR < 1$  is shown below.

### Analyzing the consistency of sub-criteria of criteria for every Alternative

The weight of each sub-criterion is calculated by dividing each component of matrix column (normalization) by the matrix column. Logical consistency is used to assess whether the comparison done to sub-criteria is consistent or not. The procedures to weight the comparison are the same, among others, to get the element of the first row of the vector yield, by multiplying the first row element of the first column by the element of the first row of weight, then adding the element of the second column, after that multiplying by the element of the second row of weight, next adding the element of the third column, finally multiplying by the element of the third row of weight. Below is the table 1 of the Questionnaire Result Tabulation for the Weight of criterion under Benefits, Cost, Opportunities and Risk for Gasoline Current Price alternative, Gasoline Regional Price alternative and Gasoline Fair Price alternative.

### Rating Importance of Benefits, Costs, Opportunities and Risks

Table 1: Weights of Control Criteria in the Benefits and Opportunities Control Networks. Priorities for Each Alternative

	Weight / Priorities for each Alternative		
	GCP Alternative	GRP Alternative	GFP Alternative
<b>Benefits</b>			
Economy	<b>0.5185</b>	<b>0.5222</b>	<b>0.4576</b>
Politics	0.1723	0.2223	0.1936
Social	0.1796	0.1378	0.2209
Technology	0.1296	0.1177	0.1278
<b>Opportunities</b>			
Economy	<b>0.4312</b>	<b>0.3747</b>	<b>0.4277</b>
Politics	0.2647	0.2880	0.2014
Social	0.1711	0.1971	0.2327
Technology	0.1330	0.1403	0.1382
<b>Cost</b>			
Economy	<b>0.5405</b>	<b>0.3910</b>	0.2393
Politics	0.2288	0.3085	<b>0.3787</b>
Social	0.1171	0.1659	0.2140
Technology	0.1135	0.1346	0.1680
<b>Risks</b>			
Economy	<b>0.5001</b>	<b>0.3970</b>	0.2534
Politics	0.2617	0.3072	<b>0.3516</b>
Social	0.1335	0.1617	0.2383
Technology	0.1046	0.1341	0.1566

From the calculation result, GCP alternative result in the weightiest elements of its respective criteria and on the same sub-criterion: Economy. This shows that economy factor plays the important role. The C/B calculation result indicates that the element is below 1 which means that the cost the government should pay is greater. For GRP alternative, the result also produces the weightiest elements of its respective criteria and on the same sub-criterion: Economy. What is different is that the B/C shows element above 1 which means that the government gains profit from economy factor or no subsidy. Politics factor shows

high element which needs to take care of. For GFP alternative, its Benefits and Opportunities criteria have the weightiest elements on sub-criterion: Economy. Indeed, the government gets rid of economic burden or it gains profit of it. But, politics factor needs to take care of. The government should pay much attention to this considering gasoline price will have to follow market mechanism. So the government must really guarantee security, stability all over the country.

From the calculation result as shown at Table 1, the most dominant factor can be identified so each weight of criteria can be counted for its alternative. The result can be seen at Table 2.

**Table 2:BCOR Analysis**

	<b>Benefits (B)</b>	<b>Opportunities (O)</b>	<b>Cost (C)</b>	<b>Risk (R)</b>	<b>Standard B/C</b>	<b>Pessimistic B/(CxR)</b>	<b>Realistic (BxO)/(CxR)</b>
<b>GCP</b>	0.3461	0.3495	0.4125	0.4005	0.8390	2.0950	0.7322
<b>GRP</b>	0.3485	0.3037	0.2984	0.3179	1.1672	3.6738	1.1157
<b>GFP</b>	0.3054	0.3467	0.2891	0.2816	1.0564	3.7513	<b>1.3006</b>

At Table 3 is the calculation result in Additive Formula.

**Table 3:Inverting Costs and Risks Priorities for use in an Additive Formula**

	<b>Cost</b>	<b>1/Cost</b>	<b>1/Cost Normalized</b>	<b>Risk</b>	<b>1/Risk</b>	<b>1/Risk Normalized</b>
<b>GCP</b>	0.4125	2.4242	0.2625	0.4005	2.4969	0.2716
<b>GRP</b>	0.2984	3.3512	0.3629	0.3179	3.1456	0.3421
<b>GFP</b>	0.2891	3.4590	0.3746	0.2816	3.5511	0.3863

At Table 4 is calculation result in Final Outcome Additive and Final Outcome Multiplicative.

**Table 4: Final Synthesis of Priorities of Alternative**

	<b>Benefits to Indonesian Government</b>	<b>Opportunities to Indonesian Government</b>	<b>Costs (least costly)</b>	<b>Risks (least costly)</b>	<b>Final Outcome Additive</b>	<b>Final Outcome Multiplicative</b>
	<b>0.2306</b>	<b>0.2313</b>	<b>0.2729</b>	<b>0.2651</b>		
<b>GCP</b>	0.3461	0.3495	0.2625	0.2716	0.3043	0.3017
<b>GRP</b>	0.3485	0.3037	0.3629	0.3421	0.3403	0.3397
<b>GFP</b>	0.3054	0.3467	0.3746	0.3863	<b>0.3553</b>	0.3539

### Result:

The Questionnaire applies Linkert scale with 1-5 intervals, so the result is absolute on those element comparisons. Since the element is absolute, it's just an indication.

The element result is determined by experts who respond to the questionnaire. Two of 74 questions or 12 matrix pair wise comparison groups has consistency ratio greater than 0.1 (>0.1). It means that it needs to redo. This error is very low or 2/74 and it has been corrected, so it can meet consistency criteria.

This result analysis will probably change by assuming its benefit or opportunity for the people may change.

The weight of Benefit (B), Cost (C), Opportunity (O), Risk (R), after all factor calculated and normalized, and the Standard Condition (B/C), Pessimistic B/(CxR) and Realistic (BxO)/(CxR) for every alternative can be seen at Table 2. From Table 2, the BO/CR calculation shows that the highest price is 1.3006 on GFP alternative, then 1.1157 on GRP alternative, less then one on GCP alternative. At Table 4, the result of Final Outcome Additive and Final Outcome Multiplicative has the same rank. The highest price that the government prefers is Gasoline Fair price or this result reflects on the government preference policy.

The best alternative to choose is GFP alternative having the greatest Realistic Price and this chosen alternative is considered as a decision of many existing alternatives. This really corresponds to governmental preference as stated in oil and gas law in 2001. However, the fact that gasoline price is still subsidized and the facilities don't get improved and the purchasing power of the people is still low, it seems that the gasoline price can't follow the market mechanism yet as scheduled by the government to put the oil law 2001 to action in November 2005.

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