Modeling Foreseeable Risk Factors Affecting the Contractor’s Profit in the International EPC Project

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Abstract — It is generally accepted that risk management is an important issue in project management, especially for contractors in the international EPC project. This paper aims to develop a systemic decision framework for contractors to address the foreseeable risk factors affecting the profit performance. Firstly, a profit model is developed through analyzing the mechanism and identifying the risk factors of the project profit based FIDIC Silver Book and the contractual provisions from the perspective of contractor. To solve the model, this paper presents a decision framework which transforms the risk identification and experiential expert knowledge into a more usable and systematic quantitative-based analysis by the Probability Tree Method. Risk events are assessed by this method and the appropriate strategies are then suggested. M Reservoir Engineering in Sri Lanka is presented to illustrate how the method works.

Keywords - international EPC project; risk management; profit performance; FIDIC Silver Book; Probability Tree.

I. INTRODUCTION

EPC model is the most universal organization management model for international project, which usually adopts lump-sum contract that stipulates the contractor undertaking a series of tasks including engineering, procurement and construction until delivery of a construction project [1]. And those contractors of international EPC projects have to bear language, laws, customs and other unique works. So the general contractors take most of all risk for project cost, quality and schedule under this model [2]. Therefore risk management plays a proactive role in reaping a total excepted profit by contractors in the international EPC projects [3-4].

Furthermore EPC model is mainly originated from the employers’ requirements which the contractors should take on more responsibility and reduce the uncertainty during the construction process, it is a kind of production organization model which is close to the general industrial products increasingly [5]. Through the EPC contract, the employer achieves the target for the control of cost and schedule effectively [6-8], but the general contractor often has to run the most risk of the project cost, quality, schedule and safety. According to the principle that no risk no reward [9], how to measurement and management these profit or cost risk scientifically during the EPC project process to reap the excepted high profit and meet the requirements of employer is one of the most important concerns of the general contractor.

Since the international EPC turnkey projects comply with FIDIC Silver Book, it is necessary to analyze the profit risks based on the contractual provisions and identify them as detail as possible. FIDIC is the abbreviation for Fédération Internationale Des Ingénieurs Conseils, which has supplied the international construction industry with standard contract forms. In 1999, FIDIC released the edition of the Conditions of Contract for EPC Turnkey Projects, a new standard form also referred to as the "Silver Book" because of the color of its front cover [10-11]. With the development of the international construction industry, the Silver Book is received and used indirectly by employer or contractor as a negotiating tool in the course of international turnkey projects. So we chose the Silver Book for study.

The remainder of this paper is organized as follows. Section 2 reviews the literature on profit or cost risks in international construction industry. Based on the findings and suggestions from the literature, Section 3 outlines a systemic decision framework to analyze, assess and respond risk factors affecting profit performance of the international EPC projects from contractor’s perspective. For clarification purposes, a simple example is studies in section 4. Section 5 contains conclusions and future developments.

II. LITERATURE REVIEW

Every construction projects are unique and no construction project is risk free in the uncertain situation. Olsson (2007) [12] and Hillson (2004) [13] assert that risk is measurable uncertainty and uncertainty is immeasurable risk. Risks can be managed, reduced, transferred or accepted, but it cannot be ignored [14]. Various types of research about risk in construction project, such as risk identification [15-16], risk analysis [17-19], risk allocation [14,20,22] and risk response [2], have been conducted based one stage or one aspect of the project. However, as an integrated organization model, it is common that risks of EPC project have to be forecasted and assessed before start, and risk management should be implemented in a systematic manner from the planning stage through project.
project cost is the main expenditure for contractor. We
Since EPC model is a fixed-price contract, and the
A.

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appropriate strategies, which effectively deals with these

complex and variable that it is difficult to modeling in the

uncertain situation. So it is necessary for contractor to

modeling risk in consideration of the correlation for risk assessment

and project execution in the uncertain situation.

Nevertheless, there are so many factors and

subjectivities in judging them involved that quantitative

forecasting is too big challenge. For the convenience of

research, various types of risks have documented in the

literature. Such as dynamic/static, corporate/ individual,

internal/ external [34], positive/negative, acceptable/unacceptable and insurable/ non-insurable [23].

And a broad classification of construction project risks

could be: technical, construction, legal, natural, logistic,

social, economic, financial, commercial and political [35-

37]. This form of classifying risk has followed the source

criteria. But as a standard contract form for international

EPC projects, FIDIC Silver Book is neglected in risk

management and there is a gap to identify profit or cost risk

from the prescriptive of it. This is the point we are trying to

make.

As contractors, pursuit of interests is their eternal theme.

For international EPC project, the profit of contractor should be estimated not only before the start of the project

but during the project implementation. Thus modeling risk

factors for project profit estimation plays an important rule

to the success of the lifecycle project management. However, the risk factors affecting the profit are so complex and variable that it is difficult to modeling in the uncertain situation. So it is necessary for contractor to comply with a systemic decision framework based the foreseeable risk factors of modeling, assessment and appropriate strategies, which effectively deals with these risks, in order to maintain the expected profit balance for contractor. This is the gap in knowledge that this paper intends to fill.

III. A PROFIT RISK MODEL OF THE INTERNATIONAL EPC PROJECT

A. Mechanism of the profit model

Since EPC model is a fixed-price contract, and the project cost is the main expenditure for contractor. We

suppose that the profit of contractor is determined as difference of contract price and the project cost. Among, the cost includes labor, material, equipment and overhead in the process of construction project [38]. The costs of international EPC project include Labor Cost, Material Cost, Equipment Cost (about 20% in the contract price), Procurement Cost and the design cost (about 3-5% in the contract price). Because of the design cost of the proportion is less, its 10% increase or 10% reduce will have no obviously impact on the total cost, so it has not considered here. Figure 1 shows the formation of profit.

\[ TP = CP - EC \] (1)

\[ EC = LC + MC + CEC + CPC \] (2)

Where \( CP \) represents the Contract Price (the bidding price), it means the amount accepted in the letter of acceptance for the execution and completion of the works and the remedying of any defects, and includes adjustments in accordance with the contract [1]; \( EC \) represents the Expected Cost of the contractor. \( EC \) is determined as sum of \( LC \), \( MC \), \( CEC \) and \( CPC \) in international EPC project, among \( LC \)—Labor Cost, \( MC \)—Materials Cost, \( CEC 
—Construction Equipment Cost, \( CPC 
—Procurement Cost.

2) Actual profit

In the process of international EPC projects, projects are subject to various kinds of risks, which will result the increased cost-pula of general contractor. Although some increased cost caused by employer’s or external factors may be claimed. Usually actual profits may not equal to the target profit of contractor. The Actual Profit (\( AP \)) of contractor is determined as following:

\[ AP = ACP - EC - IC + CC + PC - CAC \] (3)

Where \( ACP \) represents the Adjusted Contract Price, \( IC \) represents the Increased Costs; \( CC \) represents contractor’s Claims for Costs; \( PC \) represents profit claim of contractor; \( CAC \) represents employer’s claim against contractor; other symbols are same as Equation (1).

But, in the process implementation, most of risk events are not independent [19]. And their effects on the profit are additive. Such correlation is difficult to be captured and the

Figure 1. The profit formation of EPC project

1) Target profit
If all go according to the planning or in the ideal state, namely no any profit risk events could occur during the international EPC project process. The Target Profit (TP) of contractor is determined as follows:

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The risk factors affecting \( ACP \) and \( CC \) have resulted in contractor's cost increase and it is impossible to adjust the contract price; the contractor shall only be entitled to claim for parts cost. In this situation, the actual income is less than the actual expenditure; as a result the profit of contractor decreases. For example, when force majeure (TABLE 1: article 19.4) events has happened in the implementation of project, the cost of contractor is increased, the contractor could claim parts cost to make up parts losses but not the complete losses from employers; and it is impossible to adjust the contract price. So the actual income and the actual expenditure would be increasing but the former would be less than the latter, the profit would be decreasing finally.

The risk factors have resulted in contractor's cost increase and it is impossible to adjust the contract price; the contractor shall be entitled to claim for full cost. At the moment, the actual income is equal to the actual expenditure, so the profit of contractor is unchanged. Such as: while the employer delayed payment (TABLE 1: article 14.8), the contractor be entitled to receive financing charges compounded monthly on the amount unpaid the period of delay (these financing charges shall be calculated at the annual rate of three percentage points above the discount rate of three percentage points above the discount rate of the central bank in the country of the currency of payment), the contractor's claim can fully compensated for the losses, so the profit is unchanged.

The risk factors have resulted in contractor's cost increase and it is ought to adjust the contract price, the contractor shall be entitled to claim for cost. The adjustment of contract price is equal to the cost of the claim, so these risk events fail to change the profit of contractor. Such as: the employer had not provided the right of access to the site to the contractor timely, which resulted in the increasing cost of contractor, the contractor could claim the cost, but the claim cost was added to the contract price as adjustment. So the profit was not unchanged. These risk factors are including article 2.1, 7.4, 8.9, 10.3, 11.8, 12.2, 12.4, 13.7, 13.8, 16.1, 17.4, 18.1 in FIDIC Silver Book (1999) (TABLE 1).

c) The risk factors affecting \( PC \)

Usually, because the employers' reasons increase the cost and lead to the Contractor suffers losses (such as the opportunity cost), the contractor may propose profit claim to employers, and meanwhile adjust the contract price; contract price is equal to the claim profit, so the actual income is increasing of the contractor, with is also a corresponding increase in profits. Such as: the employer had failed to provide the right of access to the site to the contractor timely, resulting contractor's cost increased, and producing the opportunity cost (the contractor lose the opportunities to undertake other projects), the contractor could claim for profit, and added it into contract price. At this time the actual income is increasing, which is also a corresponding increase in the profit of the contractor. These
risk factors include article 2.1, 7.4, 10.3, 11.8, 12.2, 12.4 and 16.1 in FIDIC Silver Book (1999) (TABLE 1).

<table>
<thead>
<tr>
<th>Numbering of Article</th>
<th>Name of Article</th>
<th>The Cost</th>
<th>The Profit</th>
<th>The Contract Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Right of Access to the Site</td>
<td>—</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>7.4</td>
<td>Testing</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>8.9</td>
<td>Consequences of Suspension</td>
<td>√</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>10.3</td>
<td>Interference with Tests on Competition</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>11.8</td>
<td>Contractor to Search</td>
<td>√</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>12.2</td>
<td>Delayed Tests</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>12.4</td>
<td>Failure to Pass Tests after Completion</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>13.7</td>
<td>Adjustments for Changes in Legislation</td>
<td>√</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>13.8</td>
<td>Adjustments for Changes in Cost</td>
<td>√</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>14.8</td>
<td>Delayed Payment</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>16.1</td>
<td>Contractor’s Entitlement to Suspend Work</td>
<td>√</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>17.4</td>
<td>Consequences of Employer’s Risks</td>
<td>—</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>18.1</td>
<td>General Requirements for Insurance</td>
<td>√</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>19.4</td>
<td>Consequences of Force Majeure</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: "√"— The cost, the profit or the contract price is adjustable in the view of contractor.

2) Risks affecting AE
As Equation (5) shows, AE is determined as sum of EC, IC and CAC. The uncertainty factors about EC, IC and CAC will analyze as following.

a) Determine EC
With the project contract signed, the expected cost is determined.

b) The risk factors affecting IC
As Equation (2) shows, the expected cost consists of four parts: LC, MC, CEC and CPC. Therefore, the uncertainty of the four parts will result in the change of EC.

The uncertainty of LC. Because the labor cost of international EPC project includes abroad staff wages and other costs, foreign hired workers wages. The uncertainty of labor cost comes from advanced abroad fee, foreign wage changes, the charge of round-trip airfare, accommodation, the recruitment of severance pay, pre wages etc.

The uncertainty of MC. The materials of international EPC may be procured from the local, or from the domestic supply, but also from the import of other countries. Different suppliers result in different costs.

The uncertainty of CEC. Construction equipments are divided into owned equipments and rented equipments. Therefore, transport fees, maintenance fees and rent fee has become the influence factors of the equipments costs level.

The uncertainty of CPC. The procurement cost usually accounts for about 70% of the total cost of the EPC project. So, in a sense, the procurement cost control is the key success factors for the cost control of EPC project. The uncertainty of procurement cost includes: rising prices; procurement and bidding cycle; procurement plans; the supplier or strike; department setting; the personnel allocation rationality; procurement system and model of rationality; customs clearance period; abundant degree of procurement supply; where the project is located in the state laws and regulations on export; the third special risks.

Apart from the above four parts will result in the change of IC, the risk events affecting CC will change the IC.

c) The risk factors affecting CAC
According to the different results of the employers’ claim, the risk factors are divided into three categories as below:

The risk related-contractor makes the employer sustain losses and it is impossible to adjust the contract price; the employer shall be entitled to claim against the contractor. In terms of the contractor, this claim is part of the actual expenditure. Thus the profit is decreasing accordingly with the actual expenditure increase. Such as: the Contractor fails to ensure the validity of the Performance Security, in which event the employer may claim the full amount of the Performance Security. At this time, the actual expenditure of the contractor is increasing but the profit is decreasing.

Other risk events show as article 4.2, 7.5, 7.6, 8.6, 8.7 and 11.11 in FIDIC Silver Book (1999) (TABLE 2).

The risk related-contractor makes the employer sustain losses and it is ought to adjust the contract price, or the employer shall be entitled to claim against the contractor. The consequence of the former is equal to the decrease of the actual income from the perspective of the contractor; the latter is equal to the increase of the actual expenditure. No matter what kind of forms, the final result is the profit decrease. For example, article11.4 shows in FIDIC Silver Book (1999) (TABLE 2).

The risk related-contractor deprives the employer substantially the whole benefit, it is ought to adjust the Contract Price and the Contract Price shall be reduce by such amount as shall be appropriate to cover the reduced value to the employer. In this situation, not only the Actual Income but also the Final Actual Profit is reduced. Such as: article 9.4 shows in FIDIC Silver Book (1999) (TABLE 2).
TABLE 2  CONDITIONS OF THE COST/ THE PROFIT/THE CONTRACT PRICE ADJUSTABLE IN FIDIC SILVER BOOK(EMPLOYER)

<table>
<thead>
<tr>
<th>Numbering of Article</th>
<th>Name of Article</th>
<th>The Cost</th>
<th>The Profit</th>
<th>The Contract Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2</td>
<td>Performance Security</td>
<td>√</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>7.5</td>
<td>Rejection</td>
<td>√</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>7.6</td>
<td>Remedial Work</td>
<td>√</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>8.6</td>
<td>Rate of Progress</td>
<td>√</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>8.7</td>
<td>Delay Damages</td>
<td>√</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>9.4</td>
<td>Failure to Pass Tests on Completion</td>
<td>—</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>11.4</td>
<td>Failure to Remedy Defects</td>
<td>√</td>
<td>—</td>
<td>√</td>
</tr>
<tr>
<td>11.11</td>
<td>Clearance of Site</td>
<td>√</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>12.3</td>
<td>Retesting</td>
<td>√</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: "√"— the cost, the profit or the contract price is adjustable in the view of employer.

C. The framework of profit risk model

In this paper, we develop a systemic decision framework to analyze, assess and respond risk factors affecting profit performance of the international EPC projects from contractor’s perspective. Our framework consists of profit risk factors modeling module, assessment module and strategy module, as show in Figure 2.

According to how much the cumulative probability is, the levels of the profit risk-assessment would be classed into five: I, II, III, IV and V, as show Figure 3. Appropriately, we develop five types of respond strategies within the strategy module based on the levels (TABLE 3).

The modeling module determines the target profit and the final actual profit based on the general conditions of FIDIC Silver Book. And it includes the identification and analysis of major risk factors affecting profit performance.

![Figure 2. The framework of the profit risks model](image)

![Figure 3. The levels of the profit risk-assessment](image)

<table>
<thead>
<tr>
<th>The levels of the risk</th>
<th>the strategies module</th>
</tr>
</thead>
<tbody>
<tr>
<td>I (Green)</td>
<td>Only sustained attention</td>
</tr>
<tr>
<td>II (Blue)</td>
<td>• should lock the risk events and be closely monitored</td>
</tr>
<tr>
<td></td>
<td>• looking for sources of risk for the follow-up measures</td>
</tr>
<tr>
<td>III (Yellow)</td>
<td>Prepare</td>
</tr>
<tr>
<td>IV (Orange)</td>
<td>• should be tilted to the risk events during resource allocation</td>
</tr>
<tr>
<td></td>
<td>• must focus on the risk events heavily</td>
</tr>
<tr>
<td>V (Red)</td>
<td>• must take decisive measures to reduce the loss of size and scope</td>
</tr>
</tbody>
</table>

The assessment module calculates the cumulative probability which the final actual profit is less than the target profit. Taking into account the Probability Tree Analysis is a method analyzing the differences between the actual and target values, by calculating the probability to determine the level of the risk. So, in this paper, we apply this method to assess the level of the profit risks by calculating the difference. The difference is represented by the cumulative probability. So, if the cumulative probability is bigger, the level of profit risks would be higher; in contrary, the level would be lower. Though there are so many risk factors affecting the project profit of contractor.
Probability Tree analysis can input N variable for combined probability. Thus Probability Tree Analysis Method for risk management can be successful developed.

IV. ILLUSTRATIVE EXAMPLE

In this paper, an example is presented to demonstrate how to employ the proposed framework to capture and manage the risks affecting the profit of the contractor.

A. Case background

The contract price of M Reservoir Engineering is $252 million under a fixed-price contract in Sri Lanka. And the contractor is a Chinese enterprise who estimates the expected cost ($192 million) takes up 76.1 percent of the contract price. Plan management fee ($20 million) takes up 8% for the contract price. The target profit ($40 million) takes up 8% for the contract price. The target profit ($40 million) takes up 76.1 percent of the contract price. Plan management fee ($20 million) takes up 8% for the contract price. The target profit ($40 million) takes up 8% for the contract price.

In Sri Lanka, M Reservoir Engineering is complicated subjected to many risk factors. Thus, only the critical factors including the fluctuation of exchange rate, ill-considered bidding program, procurement-related risks and increased quantities, are selected to study.

- The fluctuation of exchange rate. When the contract was signed on July 26, 2012, 1 dollar was equal 6.3381 Yuan. At that moment, finance staff predicted that 1 dollar was equal 6.0712 Yuan by 2015 the project at the end of settlement.
- Ill-considered bidding program. Sri Lanka continued heavy rain in summer. The contractor did not fully take into account the construction measure cost and risk reserve funds in rainy season when bidding this project.
- Procurement-related risks. It was inevitable that most of the equipment and materials were imported from China and it spent too much time to approval and clearance. In addition, the local transport capacity lacks.
- Increased quantities. The geology made the quantities of earthwork excavation increased about two times.

B. Analysis of risk factors affecting profit

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C. Assessment results

In order to the convenience of the assessment, it is necessary to be made some assumptions. Assumption 1: the risk events are independent; Assumption 2: each risk event has the three results for profit, but the fluctuation of exchange rate. Namely, risk events make the fluctuation of the profit increase to 10%, decrease to 10% or unchanged.

Through analyzing the historical data of similar projects and talking to contractors with relevant experience, the probabilities of ill-considered bidding program (P(A1), P(A2) and P(A3)), procurement-related risks (P(B1), P(B2) and P(B3)) and increased quantities (P(C1), P(C2) and P(C3)) affecting the profit are showed as TABLE 4.

<table>
<thead>
<tr>
<th>The Risk Events</th>
<th>Probabilities</th>
<th>Variation in Profit</th>
<th>+10%</th>
<th>0</th>
<th>-10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ill-considered bidding program (A Event)</td>
<td>P(A1)=0.5, P(A2)=0.1, P(A3)=0.4</td>
<td>+10%</td>
<td>0</td>
<td>-10%</td>
<td></td>
</tr>
<tr>
<td>Procurement-related risks (B Event)</td>
<td>P(B1)=0.6, P(B2)=0, P(B3)=0.4</td>
<td>+10%</td>
<td>0</td>
<td>-10%</td>
<td></td>
</tr>
<tr>
<td>Increased quantities (C Event)</td>
<td>P(C1)=0.4, P(C2)=0.3, P(C3)=0.3</td>
<td>+10%</td>
<td>0</td>
<td>-10%</td>
<td></td>
</tr>
</tbody>
</table>
Combined events that may occur are calculated, as shown in Figure 4. The related risks (event B) and increased quantities (event C) at ill-considered bidding program (event A), procurement-
each combined event. Thus all the combined events affecting profit are
model, contractor has to bear the most risk of the project cost, quality, schedule and safety, especial in the uncertain international environment. It is suggested that contractors are plagued by too many risk events to reap the excepted profit difficulty. In addition, they lack effective techniques and tools to handle these risks.

The aim of this paper is to propose a systemic decision framework for contractors to address the foreseeable risk factors affecting the profit performance. The modeling module of the framework is developed through analyzing the mechanism and identifying the risk factors of the project profit based FIDIC Silver Book and the contractual provisions from the perspective of contractor; The assessment module of the framework transforms the risk identification and experiential expert knowledge into a more usable and systematic quantitative-based analysis by the Probability Tree Method. And the strategy module is then suggested according to the assessment. The example project is also provided to illustrate the practicality and usefulness of the proposed method. However, the method proposed here is not the ultimate method. In fact, one of the advantages of the method is that it can be easily to adjust and model schedule or cost uncertainty too. Also it can be used in different phases of project to manage the risks (e.g. forecast the likelihood of success of the project in the bid phase).

Finally, the systemic decision framework would be an important tool for contractors to increase their awareness, identify risk factors affecting profit performance, assess their impact and likelihood and take appropriate measures in order to reduce their impact on profit performance.

ACKNOWLEDGEMENTS

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<table>
<thead>
<tr>
<th>The Combined Events</th>
<th>The Target Profit (100 million dollar)</th>
<th>The Actual Profit (100 million dollar)</th>
<th>The Combined Probability</th>
<th>The Cumulative Probability</th>
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Then draw up the Probability Tree of the profit risk events. Thus all the combined events affecting profit are obtained as Figure 4.

Subsequently, calculate the combined probability for each combined event. Such as the first branch of the Probability Tree of the profit risk events (Figure 4) represents the profit increased up 10%, which results from ill-considered bidding program (event A), procurement-related risks (event B) and increased quantities (event C) at the same time, known as the combined events 1. So, the combined probability of the combined events 1 (P1) is determined as product of P(A1), P(B1) and P(C1):

\[ P(1) = P(A1) \times P(B1) \times P(C1) = 0.5 \times 0.6 \times 0.4 = 0.12 \]

By analogy, the combined probabilities of other 26 combined events that may occur are calculated, as shown in Figure 4.

For the cumulative probabilities represent the probabilities that the Actual Profit (AP) is less than or equal to the Target Profit (TP). So \( P(\text{AP} \leq \text{TP}) = 46\% \) in this project.

D. Strategy selection

Due to \( 30\% < P(\text{AP} \leq \text{TP}) < 46\% < 50\% \), according to the Figure 3 The level of foreseeable risks belongs to class III in the project. And the appropriate strategy shows as Figure 3.
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REFERENCES


