

# **Analysis Of Outsourcing Criteria of a Large-Scale Defense Company with AHP**

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## **ABSTRACT**

Outsourcing is preferred by companies for several reasons and as in many sectors it is an important strategic decision for defense industry companies. Defense industry is a critical sector for all countries and decisions on the completion of the produced goods within the company or purchase of them have strategic importance. In this context, the aim of this study is to analyze the criteria related to outsourcing of a large-scale defense industry company and rank the criteria according to the degree of importance for the company. Interviews were conducted with senior managers of the company selected for the study, and the criteria which were evaluated as important for outsourcing of the company, Gaining New Skills, Reducing Cost, Quality Improvement, Focus on Strategy, Handling Overflow Situation, Performance and Capacity Improvement, Maintaining Old Functions and Avoiding Major Investments were determined. In addition to these eight criteria, another criterion called Defense Industry Presidency (SSB) strategies was determined. The importance of the nine criteria was determined in accordance with interviews. The determined criteria were compared with each other using the AHP method and a ranking was obtained. The comparison results were verified using the Expert Choice program.

**Keywords:** Outsourcing, Defense Industry, Analytic Hierarchy Process (AHP), Strategic Decision-Making, Criteria Prioritization, Capability Development, Quality Improvement, Cost Reduction

## **INTRODUCTION**

The competitive environment in which businesses compete has become more complex compared to the past; change in economic, social and technological fields has altered the way of competition. Businesses should adapt to these competitive conditions in order to survive and find ways to use their current resources in the most rational and efficient way. Outsourcing is one of the ways for this. The concept of outsourcing was first mentioned in the history records in the 4th century when the Roman Empire hired soldiers to defend the country. Outsourcing may be preferred by companies to gain new capabilities, reduce cost, gain prestige, achieve targeted quality standards

or improve performance and capacity. Outsourcing process is shaped parallel to the needs of the company and has been frequently studied in the literature for many sectors. Civil contractors support the armed forces in military fields with logistical support. As a result of the change created by the end of the Cold War, outsourcing has been preferred in many different military fields.

Globalization has caused some changes in the concept of sovereignty in parallel with the changes in economy and technology. Considering that the public sector does not work effectively and efficiently, it has been tried to reduce the intervention of the government by transferring institutions to the private sector. Within this trend, outsourcing has become significant also for complex public-oriented organizations, including defense. Decisions of completing products within a defense company or purchasing them externally have strategic effects on both capability and cost structures.

## **LITERATURE REVIEW**

Outsourcing has a long historical development and has been defined in different ways in the literature. Various outsourcing strategies exist, such as total outsourcing, selective outsourcing, business process outsourcing and offshore outsourcing. Reasons and advantages of outsourcing have been stated as gaining new skills, reducing cost, improving quality, focusing on core functions, avoiding major investments, ensuring effective use of resources and increasing performance and capacity. Disadvantages and risks include dependency on suppliers, loss of confidentiality, communication difficulties, loss of control, supplier failure and long-term higher costs.

Outsourcing processes generally include decision-making, determining core functions, determining strategies, cost evaluation, evaluating and selecting vendors, contract process and maintaining relations. Research findings about outsourcing practices in various countries show its widespread use in logistics, information technologies and manufacturing. Research findings in Turkey indicate increasing adoption of outsourcing in both public and private sectors. In the defense industry, the use of outsourcing is shaped by state policies, capability development requirements and security considerations.

Multiple Criteria Decision-Making approaches such as TOPSIS, ELECTRE, PROMETHEE, GRA and AHP provide structured assessment tools for complex decisions. AHP is one of the most widely

used methods in the literature and allows hierarchical structuring of decision criteria, pairwise comparisons and calculation of priority values.

## **METHODOLOGY**

This study uses the AHP (Analytic Hierarchy Process) method to determine and rank outsourcing criteria of a large-scale defense industry company. Interviews were conducted with seven senior managers to determine the criteria evaluated as important for outsourcing. These criteria were Gaining New Skills, Reducing Cost, Quality Improvement, Focus on Strategy, Handling Overflow Situation, Performance and Capacity Improvement, Maintaining Old Functions and Avoiding Major Investments. In addition, Defense Industry Presidency (SSB) strategies were identified as another criterion important for the defense industry and shaped in line with state policies.

After the nine criteria were determined, six managers were interviewed for pairwise comparison of criteria using the AHP method. The comparisons were conducted in accordance with AHP implementation stages and were verified using the Expert Choice program. Weighted matrices, priority matrices and normalization tables were created, and priority vectors were calculated. The consistency of pairwise comparisons was evaluated and acceptable consistency ratios were obtained.

## **FINDINGS**

Semi-structured interviews showed that outsourcing is evaluated within a strategic framework in the defense industry, and criteria such as gaining new skills, quality improvement and focusing on strategy are considered important. Handling sudden increases in demand, avoiding major investments and performance and capacity improvement were also stated as significant factors. The SSB strategies criterion was emphasized as highly influential since outsourcing decisions are shaped by state policies and strategic guidance.

AHP-based pairwise comparisons revealed that SSB strategies is the criterion with the highest importance value. Gaining New Skills, Quality Improvement and Focus on Strategy followed. Maintaining Old Functions and Avoiding Major Investments possessed moderate importance. The criterion with the lowest importance was Reducing Cost. This result is different from findings in other sectors where reducing cost is usually the most important criterion. The reason is considered to be the structure of the defense industry in Turkey, where both demand (Turkish Armed Forces)

and supply (defense industry firms affiliated with the same authority) originate from the same institutional body.

Expert Choice outputs confirmed the ranking results and showed consistent priority values. Overall priority rankings indicated that outsourcing decisions in the defense industry are influenced primarily by strategic alignment with national objectives rather than cost-oriented considerations.

## **CONCLUSION**

This study analyzed outsourcing criteria of a large-scale defense industry company and ranked them according to their importance using the AHP method. The results show that SSB strategies is the most influential criterion in outsourcing decisions. This reflects the strategic nature of the defense industry and its dependence on state policies, capability development needs and national security requirements. Reducing cost was found to be the least important criterion, which differentiates the defense industry from many commercial sectors.

Gaining New Skills, Quality Improvement and Focus on Strategy were also found to be significant criteria, indicating that outsourcing is used as a tool to enhance technological capability, improve quality and allow companies to focus on core competences. The findings reveal that outsourcing decisions in the defense industry are shaped by strategic and institutional factors rather than purely economic ones.

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