Evaluating Management Efficiency of Korean Professional Teams Using Data Envelopment Analysis (DEA)

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At the outset, the groundwork for this study began with the work by Kang, Lee, and Kwon (2007). Specifically, the researchers evaluated management efficiency of professional baseball teams in Korea using Data Envelopment Analysis (DEA) technique. Kang, Lee, and Kwon (2007) intended to raise the issue that professional teams in the baseball league must undergo management evaluation each year in order to improve operation efficiency and find ways to generate profit. In the meantime, all major sports leagues in Korea are having difficulties due to same financial and management problems as the baseball league. Therefore, the purpose of this study is twofold. First, evaluate management efficiency for each of the three major sports leagues in Korea. Naturally, this will help to understand the relative management efficiency of each team and provide managers an idea which categories need to be improved for higher efficiency when comes new season. These issues are addressed separately for each of the three major sports leagues: Korea Football Association (KFA), Korea Baseball Organization (KBO), and Korean Basketball League (KBL). Second, compare the management efficiency of the three leagues collectively and discover the common trend across each league. According to the evaluation, individual leagues displayed a common trend that wealthier teams performed poorly in the evaluation being ranked in the bottom of each leagues. Comparing the three leagues’ management efficiency collectively, the KBL (74.9%) scored the highest while KBO scored 70.7%, and KFA scored only 53.6%. This result indicates that the salary cap system applied to the KBL has contributed in a positive way to encourage economic parity within the league and promote overall high management efficiency. The study suggests that a certain extent of institutional control is required over the leagues to control cost and improve fan base via implementing various marketing activities.

**key words**: Data Envelopment Analysis (DEA), Efficient Team Management, Professional Team Sports, Production Function
Introduction

Since the establishment of professional baseball in 1982, followed by soccer and basketball, the three major sports have propelled the development of the Korean professional sport industry. Players participating in foreign leagues such as Chan Ho Park (MLB) and Ji Sung Park (English Premier League) have displayed that overall game quality of the Korean professional sport has improved. Moreover, the number of professional leagues and teams in each league considerably elevated throughout the years. In addition, the size and number of sponsorship deals and media rights have significantly increased over time (Choi, 2001). Despite the development of the Korean professional sport industry, Kang, Lee, and Kwon (2007) denote that the number of total fan attendance and TV ratings for all three major sports have declined, if not stalled over the past few decades. Moreover, the distorted ownership structure of professional teams that has been constantly holding the teams back from improvement has yet to be changed; consequently, there are no Korean professional sport teams that generate profit. According to Choi (2001), on average, the portion of the deficit is three times larger than the revenue. The debts compile as time goes by and the problem is becoming more severe. Due to this fact, evaluation based on direct financial measurement is meaningless. Hence, Kang, Lee, and Kwon (2007) attempted to utilize a method to evaluate management efficiency instead of financial performance as an effort to induce managers to control costs, apply affective marketing activities, and devise strategic planning in order to guide teams into financial success. The authors depicted Samsung Lions, which was ranked 6th among eight teams in efficiency, as the bad model that other teams should not resemble when it comes to efficient team management. The goal for Samsung is to become the top team every year. It does not matter how much money and resources it takes to employ high profile players as long as the team win games. Naturally, the amount of total player salary for Samsung was the most in the league and the Win-Loss percentage was the highest. However, the number of fan attendance was not positively affected by the team’s star players or high W-L percentage since it was only the fifth highest in the league.

Although the findings may be true, the study lacks in dimension and the results may only be valid in professional baseball teams. Thus, the study recognized the need that the phenomenon depicted by Kang, Lee, and Kwon (2007) need to be examined via evaluating teams in different kind of sport settings in Korea and