

Examining the cohesion-performance relationship in soccer: An observational study

Abstract

Cohesion in sport has been studied from a social perspective in past, but the goal of this present study is to examine observable, in-game team task cohesion; that is, how “being on the same page” as other teammates affects team performance. Soccer was chosen as the sport of interest because, in many ways, it requires a greater degree of team task cohesion than other popular sports. Researchers have used self-report questionnaires to define and measure cohesion in the past, but none have attempted to observe how it specifically translates to task cohesion in-game. Often, only the final outcome of the game or season was of interest. For this present study, two professional American soccer teams were observed during a match in Southern California. Pass-conversion rate was used as a measure of team task cohesion, and it was hypothesized that the team with the higher pass-conversion rate would ultimately win the match. While this hypothesis was not supported by the results, it should be noted that the pass-conversion rates of each team were very similar. This hypothesis should be tested again to increase confidence in the findings. There were other major limitations to the study that need to be addressed before it is replicated, the most notable of which was the way team task cohesion was operationalized.

Introduction

In team sports, cohesion plays a vital role. While individual talent is obviously important to team success, how well the individuals work with one another can make all the difference. This may be especially true of soccer, which is a very pass-heavy sport. The present study examines one observable aspect of team cohesiveness: task cohesion. More specifically, it is concerned with how adept the members of a team are at anticipating each other's actions, which is an integral part of cohesiveness. This skill is arguably of greater importance in soccer compared to other sports because the size of the field and the larger spaces between defenders give offensive players more options in terms of how they want to attack. When multiple attacking teammates have multiple attacking ideas, it becomes crucial from a passer's standpoint to know which option the attacking teammates will choose in certain situations. Confusing one's own teammate while attempting to confuse a defender is especially common. Soccer was chosen for this study over other sports because of the frequency of potential miscommunications and instances in which poor cohesiveness can occur. The primary interest of this study is to investigate the impact of task cohesion on team performance in soccer specifically.

Cohesion can be defined as, "a dynamic process that is reflected in the tendency of a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (Carron, Brawley & Widmeyer as cited in Eys, Loughead, Bray, Carron, 2009). The present study will attempt to examine cohesion from a sport standpoint in a way that has not been done before to add to the existing literature.

A previous study did a thorough job in explaining the key features of team cohesion (Eccles & Tenenbaum, 2004). Researchers identified the difference between "taskwork knowledge" and "teamwork knowledge." These are industrial/organizational psychology terms

that are used in the workplace, but here we attempt to apply them to sports. Taskwork knowledge includes all of the elements of a player's task that is specific to that player alone. This may include the specific responsibilities of that player's position within the team. Teamwork knowledge, on the other hand, refers to elements related to one's teammate's responsibilities within the game. For example, a soccer midfielder's taskwork knowledge may include how to dribble and pass the ball because those are the things that one would expect a midfielder to know how to do. Teamwork knowledge for that midfielder would include understanding the taskwork knowledge of his or her teammates, like how the forwards will move in a particular part of the field. When players are "on the same page," that is, when they are in agreeance in what they are trying to accomplish in a given moment, they have what some researchers call "shared knowledge" (Eccles & Tenenbaum, 2004). Task cohesion and shared knowledge go hand in hand; the ability to anticipate a teammates actions should naturally lead to enhanced performance.

Another interesting concept from the literature was something called the coordination link (Widmeyer et al as cited in Eccles and Tenenbaum). On a soccer team, only certain players will spend time near each other over the course of a game. As a result, it is not essential or even ideal for a team member to fully understand the taskwork knowledge of every teammate on the field. For example, while it is pretty important for a goal keeper to be on the same page as his two centerback defender teammates, it probably does not help much for a goal keeper to be able to predict the movements of his forward attacking teammates.

One of the issues with measuring cohesion is that it is difficult to operationalize. In the past, questionnaires were used to gauge perceived levels team cohesion (Widmeyer, Brawley, &

Carron, 1985). While this method is useful, the results from technique are far from conclusive. The use of another measurement metric is necessary to increase confidence in the findings.

Several articles mentioned unselfishness as an important aspect of cohesion (Holt & Sparkes, 2001; Eys et al, 2009). This can be operationalized in a couple of ways in soccer. How often a player passes the ball would be a decent indicator of unselfishness. Also, a player's total time with the ball may reflect unselfishness (or selfishness) as well. One study found that selfishness on the field had a direct negative impact on team cohesion (Holt & Sparkes, 2001). This study relied on player feedback to assess cohesion and how they felt about their teammates.

Prior research investigated what cohesion meant to youth athletes (Eys et al, 2009). When participants were asked to list definitions of cohesion within groups, one seemed a bit familiar: understanding others' abilities. This study explores the extent to which this definition impacts team performance in soccer.

While much research exists pertaining to the cohesion-performance relationship, operationalizing cohesion can be tricky. Questionnaires seemed to be popular, but self-report data may not be valid. After examining the existing literature, it seems as though team pass conversion rate in soccer may be a decent way to measure task cohesion. Passing obviously involves multiple teammates, and requires a lack of selfishness. Shared knowledge, an aspect of cohesion, is also necessary in most cases. The hypothesis of this study is that the soccer team with the higher pass conversion rate will beat the team with the lower pass conversion rate, since no prior study has operationalized cohesion in this way. Though social cohesion does play a role in team sport performance, this present study will not examine it.

Method

Participants

The participants included 27 professional soccer players that were observed at their game in southern California. These participants were selected using convenience sampling; they played their match near where this study was taking place. Soccer players were sampled because soccer was in season when this study was developed and the qualities of soccer were compatible with the goals of this study.

Materials

Two baseball pitch counter clickers were used to keep track of successful passes. A digital counter was used on a smartphone to keep track of unsuccessful passes for each team.

Design

In this observational study, the independent variable was team pass-conversion rate. The dependent variable was the result of the match. This study was a within-groups design.

Procedure

The researcher attended a professional soccer match to collect data. When the match began, the researcher kept track of every successful pass completed by one team with a pitch count clicker in one hand, and kept track of every successful completed pass by the other team with another clicker in the other hand. To keep track of unsuccessful passes, the researcher used a smartphone digital counter. When the match concluded, the clicker data was used to create a successful-pass conversion rate for each team and they were compared to determine which team

completed a higher percentage of their total pass attempts. No data were for instances in which the ball was stolen from a dribbling player. A successful pass was operationalized as any pass that reached the passer's teammate's body, followed immediately by a dribble or another pass. An unsuccessful pass was operationalized as a pass that was either intercepted by a defender before it could reach the passer's teammate or a pass that reached the passer's teammate but possession was lost before the teammate could take a single dribble or pass.

Results

The two teams in this study are referred to as Team A and Team B. Collectively, players from Team A successfully completed 387 passes over the course of the game, while recording 51 unsuccessful passes. Their pass-conversion rate was 88.36%. The players from Team B successfully completed 304 passes while recording 42 unsuccessful passes. Their pass-conversion rate was 87.86%. Team B won the match by a score of 3-2.

Discussion

Although Team A attempted more passes than Team B, the pass-conversion rates of each team were very similar (Team A: 88.36%; Team B: 87.86%). Team A, however, did have a slightly better pass-conversion rate, though they lost the match. Since the hypothesis of this study predicted that the team with the higher pass-conversion rate would win the game, this hypothesis was refuted. It would be worthwhile to test more participants because the difference in pass-conversion rate is too small to make an association claim between pass success and team task cohesion.

After having collected the data, it became clear that this would not be enough to make any claims about team task cohesion. This study may be best interpreted as a complement to prior

research that implemented methods which measured participant perception of cohesion (Widmeyer et al, 1985). If this study were to be replicated, it may be worthwhile to integrate some sort of questionnaire or interview aspect to gain a more complete picture of cohesion. There is also a big social component to cohesion that cannot be ignored, and the aim of the present study was to collect data on any observable in-game components of cohesion. Observing “teamwork knowledge” and “shared knowledge” (Eccles & Tenenbaum, 2004) proved to be difficult. Although there were many non-passing instances in which it was clear that teammates were on the same page, it would not be scientific to record these instances as data without an operational definition. For example, “build up play” in which offensive players simultaneously attack the spaces between defenders may be a better reflection of team task cohesion than pass-conversion rate, but that is much harder to measure and record. The number of total pass attempts may be a better measure of the unselfishness component of cohesion, but there is much more to cohesion than unselfishness and trusting in the abilities of teammates (Holt & Sparkes, 2001; Eys et al, 2009).

There are many significant limitations to the present study. The operationalization of what constitutes a pass in the context of task cohesion was a challenge. It became clear that not all passes reflect cohesion, as many passes were very safe passes. Players would often pass the ball along the back line of the defense, which requires little to no task cohesion. The recipient of the pass may have something completely different in mind offensively than the passer, and this was observed in some instances when the pass recipient clearly did not want the ball and immediately passed it back, pointing to the player that he wanted the pass to go to. This is a clear example of low task cohesion, yet two successful passes were recorded. One reason for this may be that the passer was more concerned with defenders taking the ball from him than making the pass that his

teammates want. In other instances, an attacking player would attempt to dribble through the defense but then pass it backwards to safety when defenders closed in. This kind of pass does require some task cohesion as it is often the job of supporting players to be in a position to bail out their attacking teammate if he gets in trouble, though this represents the conclusion of a team task since they are resetting the attack. In contrast, some passes were a lot more risky. The distance of the pass obviously made a big difference in how successful it was, but attempting a long pass does not necessarily indicate anything about cohesion. Aerial passes like crosses and corner kicks also have a lower success rate, though they were also recorded as data.

The present study overlooked a few important factors. It is now clear that not all passes are created equal in the context of cohesion. Factors like player position, type of pass, and area on the field were not taken into account. Future research might examine specific situations in soccer rather than every pass over the entire length of the game. Collecting pass data only in the “final third” section of the field where the defense is more compact may be a better way to study cohesion. Using a more specific operational definition for a pass to better reflect task cohesion is probably necessary as well. Crosses into the box, for example, where there isn’t necessarily one specific teammate that the passer is aiming for should be excluded. Recording the rate at which successive passes are made or, in contrast, the amount of time a player spends in possession of the ball without passing may be appropriate measures of good/bad team task cohesion.

Finding a concrete link between a team member’s perception of cohesion and actual task cohesion could lead to the development of new strategies to improve team performance. Many sport psychology concepts are abstract and therefore difficult to study, so it is important to continue to research these concepts in as many ways possible. The psychology of team task cohesion, and in turn team performance, is an important subject given the popularity of team

sports across the world, though it can be especially challenging to study due to the amount of participants needed and the amount of moderators involved. There is still much to learn about cohesion as it relates to performance in sports and, if nothing else, this study helps to create new ideas for future research.

References

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