The Effects of Robot Umpires on Fans’ Evaluations of Game Consumption

Jin Yoon Park, Sungkyunkwan University
Haran Lee, Sungkyunkwan University
Young Woo Kang, Sungkyunkwan University
Seongheyeon Baek, Sungkyunkwan University
Seung Hwan Ju, Sungkyunkwan University
Kwangjo Choi, Sungkyunkwan University
Dohyung Kim, Sungkyunkwan University
Su Kyung Hyung, Sungkyunkwan University
Kyungro Chang (Advisor), Sungkyunkwan University
Taehye Kim (Advisor), Sungkyunkwan University
Wonneok (Eric) Jang (Advisor), Sungkyunkwan University

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Minor league baseball has recently adopted robot umpires (RUs) to judge balls and strikes. Once the pitcher throws the ball, the RU identifies balls and strikes based on a computer system and informs human umpires (HUs). Leagues expect that RUs will enhance the accuracy of calls. However, the use of new technology (e.g., RUs) decreases the emotional aspect of sports which is a key reason why fans engage in sports consumption (Madrigal, 2003). Therefore, this study examines how the use of RUs influences fans’ evaluations of game consumption depending on the level of team identification.

Research has suggested that the use of robots enhances the objectivity of judgments because their decisions are based on predefined formulas (Clerwall, 2014). Thus: H1: RUs will lead to greater credibility of calls than HUs

The major disadvantage of using robots is a decrease in emotionality because robots operate and make judgments based on preexisting rules. Therefore: H2: HUs will lead to greater game enjoyment than RUs

People make decisions using two different systems: cognition/affect. Decisions driven by cognition are more systematic and based on rules than those driven by emotion, which are effortless and spontaneous (Shiv & Fedorikhin, 1999). A key characteristic that determines whether fans use either cognition or affect when they make decisions is their level of team identification (Jang et al., 2014). Because highly identified fans are more emotionally attached to their favorite teams, their decisions are more heavily driven by emotion than cognition. Hence: H3/H4: For highly (less) identified fans, HUs (RUs) will lead to more positive viewing satisfaction and future intention than RUs (HUs)

Sports leagues often use VAR in the later part of the game because it delays the game. Thus: RQ: How would the effects of RUs on fans’ evaluations of the game be different depending on whether the RU was used at the early or later part of the game?

A 2 (RU vs. HU) × 2 (highly vs. less identified fans) × 2 (early vs. later part of the game) between-subjects design will be used (n = 400). We are currently working on the data collection and will finish the data analysis by November. First, participants will be randomly assigned to either the RU or HU condition. In the RU condition, participants will read a news article about RUs and be informed that the current umpire for the game is a robot. In the second stage, participants will be informed that the clip they will watch is either recorded at the first or ninth inning. All aspects of the videos will be identical except the type of umpire. Finally, participants will complete a questionnaire. We will use ANOVA to test the main and the interaction effects as well as a simple effect test to examine the group difference.

The results of our study would provide the first empirical evidence regarding how fans would react differently depending on whether the umpire is human or robot. More theoretical and practical implications about robot umpires will be discussed at the conference.