When the crowd evaluates soccer players' market values: Accuracy and evaluation attributes of an online community

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A R T I C L E   I N F O

A B S T R A C T

Evaluating the value of athletes to determine whether they should be transferred from one club to another has become a major challenge for managers of sports teams. In the context of German soccer, aficionados have built a large online community that evaluates professional soccer players' market values. The community has become the main source for reporting market values in the media and has a strong impact on sports economy: it is used in real market transactions and wage negotiations, indicating the power of crowd wisdom in the sports management context.

This research describes the evaluation process of the community, investigates the accuracy of its estimated market values, and shows which attributes are most important for market-value evaluations. After demonstrating that the community's market-value estimates can predict actual transfer fees, we show that community evaluations can largely be explained by an econometric model that contains two blocks of determinants: variables that are directly related to players' talent and variables that result from judgments by external sources (e.g., journalists). Reorganizing variables that were used in previous studies into two blocks (talent vs. external determinants) provides a more differentiated look at the popularity of players than recent literature on the "superstar phenomenon."

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1. Introduction

We define the market value of a professional athlete – such as a soccer player – as an estimate of the amount of money a club would be willing to pay in order to make this athlete sign a contract, independent of an actual transaction. However, evaluating an individual's value within any kind of team – such as a soccer team – is a challenging task. This research investigates how and how well an online community with special interest in professional soccer performs on such a complex task of human capital valuation.

Drawing on research on information aggregation mechanisms for teams (e.g., Brunswik's lens model) we explain and discuss the special approach that a community uses to evaluate professional athletes. Furthermore, we discuss variables that are important for evaluating soccer players, drawing on prior research on sports management in the context of soccer and

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focusing on the "superstar phenomenon." This phenomenon is not only important for professional sports but also in many other areas of application such as top management salaries or compensations for artists and managers (Franck & Nüesch, 2012). Following the superstar literature, a team member's value is driven by two distinct factors: "talent" indicated by objective performance (Rosen, 1981) and "network externalities of popularity" (Adler, 1985). Although talent – in the context of soccer – is often reflected by simple statistics such as the number of assists, precise passes, and won "duels" (taking or defending the ball from an opponent), popularity has been operationalized by the number of citations in newspapers and weekly magazines (Franck & Nüesch, 2012). We suggest that the number of press citations is only one of a number of factors that influence popularity and have an impact on athletes' market values. Thus, we enhance this view and discuss various external variables that can reflect players' popularity, e.g., decisions of team coaches or club managers and evaluations by sports journalists. For example, the number of games an athlete plays for a team does not necessarily depend on his or her talent, but might be up to the coach's discretion. The evaluation of a player's performance by a coach is highly subjective, because the player might not fit into the team coach's strategy or because of personal tensions between player and coach. Also a community (crowd) that evaluates athletes based on a variable "number of games played" can make subjective interpretations and does not necessarily interpret a low number of games played to be an indicator of low market value. This example stresses the importance of enhancing our knowledge on the mechanisms of information aggregation and evaluation process in the context of crowdsourcing. More specifically, this research investigates (1) *how* – with respect to their organizational principle – and (2) *how well* – with respect to the accuracy of the evaluation output – an online community estimates professional soccer players' market values, and (3) *which attributes* are most important for the evaluations made by the crowd. We also contribute to the literature on the superstar phenomenon by reconsidering various well-known attributes as being external variables and not talent variables. Hence, the superstar phenomenon can be measured by more variables, not just by the number of press citations.

This manuscript is organized in the following manner: in the next section we describe the relevance of crowdsourcing as well as an organizational principle that we call the judge principle, which theorizes how crowds can conduct evaluation tasks. Afterward, we evaluate how accurately an online community performs the complex task of human capital evaluation. In particular, we test if market-value estimates made by the online community predict actual transfer fees. Finally, we present an econometric model that helps to explain which talent attributes and which external attributes are most indicative for market-value estimations. After presenting and discussing our findings we offer ideas for further research.

2. The wisdom of crowds

Sir Francis Galton (1907) discussed the idea of "collective wisdom" when he asked "the crowd" to gauge the weight of an ox. He successfully employed a democratic principle (an equal say) to arrive at a precise estimation. Since Galton (1907), the concept of "collective wisdom" has nourished a rich and interdisciplinary stream of research (Saavedra, Duch, & Uzzi, 2011) and popular science literature (Surowiecki, 2005). Although the concept of "crowdsourcing" has been around for a long time, the advent of the Internet has opened up many new possibilities. Self-selected members of "the crowd" work together on problems such as improving algorithms, translating websites, and evaluating soccer players – quickly and worldwide (Afuah & Tucci, 2012). On the one hand, the concept of crowdsourcing has been described as an open call to identify innovative input from non-obvious sources (Jeppesen & Lakhani, 2010). On the other hand, Adams and Ferreira (2009) compare guesses from individual bettors with guesses from groups of bettors and find that group decisions are more accurate and more moderate, "either because groups have to reach a compromise when their members disagree or because individuals with extreme opinions are less likely to be part of a group" (Adams & Ferreira, 2009, p. 882). In a similar vein, other studies that have compared group and individual decision making provide evidence that groups produce more rational output than individuals (Charness & Sutter, 2012). In addition, previous research on prediction markets has also indicated that crowds perform very well in information aggregation tasks (e.g., Wolfers & Zitzewitz, 2004).[1] Estimating the market value of a professional athlete is such an information aggregation task, because all available information about the athlete could be integrated into a single variable. Hence, a crowd should perform well in predicting market values. This research investigates how and how well an online community with special interest in professional soccer performs the complex task of human capital valuation.

3. The judge principle – a pragmatic conception for information aggregation

Conceptually, communities can arrive at a judgment using different approaches (Schenk & Guittard, 2011). In an *integrative* approach, a crowd pools input (compare to prediction markets). In contrast, Schenk and Guittard (2011) call crowdsourcing *selective* when a client chooses an input from a set of options that the crowd has provided.

The market value of a professional athlete can be defined by applying integrative crowdsourcing in a democratic but inflexible way. That is, a community can calculate the mean (or median) of all suggested market values. The market value

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[1] Large companies such as Google, General Electric, Siemens, and Chrysler – to name just a few – have used prediction markets. These companies aimed to harvest information provided by "the crowd" (their employees), e.g., estimates of the number of Gmail users in the future (Google). However, Cowgill, Wolfers, and Zitzewitz (2009) have found that predictions of market results are prone to numerous biases. For example, new employees are overly optimistic or employees working closely together exhibit highly correlated views and estimates.