Likelihood of Attending a Sporting Event as a Function of Ticket Scarcity and Team Identification

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Abstract

Although sport scientists have examined a number of factors that increase attendance at sporting events (e.g., promotions, ticket cost), the impact of scarcity has remained uninvestigated. Based on past research in consumer psychology, it was hypothesized that individuals would report a greater interest in attending a sporting event in which few tickets remained (i.e., the scarce condition) than when tickets remained abundant (the not scarce condition). Additionally, previous studies have predicted that persons with a high level of identification with a target team would be more interested in attending a game involving that team than those with a low level of identification. An interaction between scarcity and identification was not expected; thus, the scarcity manipulation was predicted to have an equal effect on both types of fans. The hypotheses were tested by assessing the identification of 108 university students and presenting them with scenarios describing an upcoming game in which few or many tickets were available. The participants reported their desire to attend the game, and the results provided strong support for each hypothesis. Discussion includes the motivation underlying the scarcity effect in sport.

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In the last few decades, sport marketers and managers have devoted a great deal of time and effort to identifying factors that facilitate and promote sport consumption. In particular, researchers have been interested in variables that influence direct sport consumption in the form of attendance at sporting events. This line of research has been quite successful, and investigators have documented a number of influential factors. For instance, research indicates that weather and parking (Hay & Rao, 1982; Noll, 1974; Rivers & DeSchriver, 2002), ticket cost (Hansen & Gauthier, 1989; Zhang, Pease, Hui, & Michaud, 1995), promotional events (Hill, Madura, & Zuber, 1982; McDonald & Rascher, 2000), team success (Baade & Tiechen, 1990; Schofield, 1983), attributions for team success (Ito-Ahola, 1980; Wann, Roberts, & Tindall, 1999), and the presence of star players (Noll, 1974; Schwartz, 1973) all play a role in sport consumption decisions.

One factor found to be of particular importance involves fans’ levels of team identification. Team identification signifies the extent to which a fan feels a psychological connection to a team, is involved and invested in the team, and sees the team as an extension of the self (Guttmann, 1986; Hirt, Zillmann, Erickson, & Kennedy, 1992; Wann & Branscombe, 1993). A number of researchers have noted the importance of identification in attendance decisions (Fisher & Wakefield, 1998; Murrell & Dietz, 1992; Wakefield, 1995; Wann & Branscombe, 1993). For instance, in their examination of National Basketball Association fans, Pease and Zhang (1996) determined that team identification was the single best predictor of attendance. Accordingly, theorists interested in explaining the factors involved in attendance decisions have incorporated team identification into their models (e.g., Trail, Anderson, & Fink, 2000), and empirical testing has substantiated the inclusion of this variable (Laverie & Arnett, 2000).
One potential factor that had escaped the attention of sport scientists involves the scarcity effect, which has gained a great deal of attention from social scientists interested in persuasion tactics. The scarcity effect identifies the tendency for individuals to attempt acquisition of opportunities and resources that are either scarce or becoming increasingly scarcer (Cialdini, 1995). Items or events that are perceived to be scarce tend to be viewed as more valuable and important; consequently, individuals have a greater desire for them (Lynn, 1992). This effect has been recorded in research on social relations (e.g., Walster, Walster, Piliavin, & Berscheid, 1971; Walster, Walster, Piliavin, & Schmidt, 1973; Wright & Contrada, 1986). For example, researchers Williams, Radefeld, Binning, and Sudak (1993) asked undergraduate college students to play the role of a personal director in the process of interviewing candidates for a position at a department store. Subjects were presented with information about one of four target candidates via a cover letter, resume, and videotaped job interview. The candidate’s availability (i.e., scarcity) was manipulated in the cover letter; participants learned that this person either had no current job offers (low scarcity) or two current job offers (high scarcity). The rationale for the job offers was presented as situational (e.g., the candidate was free to relocate) or dispositional (e.g., the result of qualifications). Upon receiving this information about the candidate, participants rated items such as the desirability and probability of hiring the individual. Consistent with expectations, respondents indicated a greater interest in hiring the hard-to-get applicant whose previous offers were due to his/her qualifications. Williams et al. were able to replicate this effect with actual college recruiters.

The current study was designed to examine whether similar effects of scarcity could be found in situations involving the direct consumption of sport through ticket purchases. Three lines of evidence indicate that similar effects should be found in sport. First, research in other areas of marketing has found strong support for a scarcity effect. Lynn (1991) summarized his meta-analytical findings on marketing research examining the impact of scarcity by stating that “marketers can increase the perceived value of products, services, and promotions by manipulating the perceived scarcity of those products, services, and promotions” (p. 52). This area of inquiry owes much of its origin to Brock (1968; Brock & Brannon, 1992), who proposed a commodity theory. The commodity theory suggests that for commodity scarcity to be effective, the commodities must meet three criteria: They must be useful, transferable, and possessable. Tickets to sporting events clearly meet each of these criteria. The ticket owner receives something tangible in exchange for the ticket (attendance at a game), tickets can generally be transferred from one person to another, and possession of a ticket entitles the owner to occupy a particular seat at the designated event.

Second, scarcity in sporting event tickets can be viewed as similar to the “limited number tactic,” described by Cialdini (1994, p. 211) as an important component of the scarcity effect. The limited number tactic is a strategy often used by individuals (e.g., sales personnel) persuading others to comply with their demands. In this tactic, individuals are informed that the target product or service is in limited supply (e.g., “while supplies last”). Cialdini contends that this strategy is highly effective, resulting in increased perceptions of item scarcity and, subsequently, item attractiveness. The limited number tactic can be found in the sport consumption realm since each event has limited seating. Consequently, sport consumers may be encouraged to purchase tickets before the event is sold out.

The third reason to expect that the scarcity effect will influence intentions to purchase sporting event tickets regards the personal investment theory (PIT). Originally developed by Maehr and Branskamp (1986) and applied to sport consumption by Wann, Melnick, Russell, and Pease (2001), PIT argues that consumption decisions are driven by three factors: perceived options (the consumption choices for the consumer), sense of self (one’s identification with the teams in competition), and personal incentives (intrinsic and extrinsic motives such as promotions and enjoyment of the competition). Regarding scarcity, perceived options are the most relevant component of PIT. This component of the model refers to one’s perceptions of his or her sport spectating options and the viability of these options. According to Wann and his associates, one of the key factors determining event viability involves the future availability of the event. In situations where the event is scarce, such as the Olympics, the desire to attend is predicted to increase. Similarly, and most relevant for the current experiment, ticket scarcity should...
also increase event viability and motivation to attend by enhancing the benefits of attendance (see Wann et al., 2001).

Based on prior studies about the impact of scarcity in non-sport environments and the aforementioned justifications of its likely effect on sport consumption, the following hypotheses were generated. First, a main effect was expected for ticket scarcity in which individuals would report a greater desire to attend a game in which tickets were described as scarce than when tickets were presented as abundant. Second, based on previously described work indicating the importance of team identification in attendance decisions, a main effect was predicted in which persons with a high level of identification with one of the competing teams would report a greater desire to attend a target sporting event (collapsed across ticket scarcity) than persons with a low level of team identification. Finally, it was hypothesized that there would not be a significant interaction between ticket scarcity and team identification, a prediction based on the studies of West (1975). In this research, university students were asked to rate their cafeteria’s food; not surprisingly, the respondents gave poor ratings of food quality. A few days later, after learning that they would not be allowed to eat in the cafeteria (due to a fire), the students were asked to rate the food quality again. Although there was no actual improvement in food service, the students’ ratings increased significantly from the first rating to the second, indicating the presence of a scarcity effect. The fact that the students were initially dissatisfied with the product is most important to the current discussion; even though they rated the product poorly, they still reported an increased desire to consume the product when they learned that the product had become scarce. Cialdini (1995) captured this effect well when he reported that scarcity appears to influence consumption decisions, “even when the (consumption) opportunity holds little attraction for us on its own merits” (p. 270). Based on West’s findings and Cialdini’s observations, it was believed that high and low identified persons would not be differentially influenced by ticket scarcity. It had been shown that prior interest in a product was not a prerequisite for the scarcity effect; consequently, highly and lowly identified fans should be equally likely to report increased interest in sport consumption when tickets are scarce.

Method

Participants and design

The original sample contained 135 participants. However, 27 subjects were removed from the data set because of inaccurate responses to a manipulation check item or because they failed to complete the entire questionnaire packet (see below). The remaining final sample contained 108 (35 male; 73 female) college students earning extra course credit in exchange for participation. They had a mean age of 20.71 years (SD = 3.93). The design for the study was a 2 (ticket scarcity: scarce or not scarce) x 2 (team identification: high or low) between-subjects factorial. The first variable was an independent variable while the second was a grouping variable.

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Materials and Procedure

Upon entering the testing session and providing their consent, participants (tested in groups) were handed a questionnaire packet containing four sections. The first section contained the Sport Spectator Identification Scale (SSIS; Wann & Branscombe, 1993). The SSIS contains 7 Likert-scale items with response options ranging from 1 (low identification) to 8 (high identification). Thus, higher numbers represented greater levels of identification. The SSIS has been used in a number of studies involving sport fans and has strong reliability and validity (see Wann & Branscombe, 1993; Wann et al., 2001). Subjects targeted the University of Kentucky’s men’s basketball team when completing the SSIS.

In the second section, participants read a scenario describing a basketball game involving the University of Kentucky’s men’s team. The game was described as a “Sweet Sixteen” NCAA tournament game against the University of North Carolina and was located in a 20,000 seat arena two hours away. The participants read that one of their acquaintances had an extra ticket for the game and would be willing to sell the ticket for a reasonable price. At this point in the scenario, the independent variable of ticket scarcity was introduced. In one condition, subjects read that there were 25 tickets remaining. In the other condition, they read that there were 2,000 tickets available. Subjects were randomly assigned to one of the two scarcity conditions.

The third section of the packet contained a seven-item Likelihood of Attendance Questionnaire developed specifically for this study. The first three items
were Likert-scale in format and assessed the participant's desire to attend the target event. These items read: “How likely are you to buy the ticket?”; “How excited would you be about attending the game?”; and “How important would it be for you to attend the game?” Response options to these questions ranged from a low of 1 (not likely, not excited, not important) to 8 (very likely, very excited, very important). Two additional Likert-scale items assessed the likelihood of missing work or an important event to attend the game. Specifically, participants were asked, “If you had to miss work and lose a day’s pay, how likely would you be to ask off?” and “If you had to miss another important event, how likely would you be to miss the event to see the game?” These two queries were rated on a 1 (not likely) to 8 (very likely) scale. A sixth question was open-ended and asked subjects to estimate the amount that they would be willing to pay for the ticket. The seventh and final item served as a manipulation check on the scarcity variable. Subjects were asked, “How scarce do you consider the tickets to this game to be?” Answers to this item ranged from 1 (not scarce) to 8 (very scarce).

The final section of the questionnaire packet assessed the participants' sex and age. After completing the questionnaire packet (15 minutes), participants were debriefed and excused from the testing session.

Results

Preliminary analyses

Prior to analyzing the data, responses to the manipulation check were examined to ensure that the respondents had acquired the appropriate perception of ticket scarcity. Persons in the scarce condition who reported that the tickets were not scarce (as indicated by a rating of “1” or “2”) were removed from the sample; similarly, participants in the not scarce condition who reported that the tickets were scarce (as indicated by a rating of “7” or “8”) were also eliminated. This process removed 23 individuals from the original sample of 135 persons, and four additional subjects were removed because they failed to complete the entire packet. The remaining sample reported significant differences in perceptions of ticket scarcity; those in the scarce condition (M = 5.67, SD = 1.56) believed the tickets to be more scarce than those in the not scarce condition (M = 2.62, SD = 1.74), F(1, 106) = 92.24, p < .001.

The seven items comprising the SSIS were combined to form a single index of identification (Cronbach's alpha = .96). A median split was performed on the participants' SSIS scores to establish two groups: participants with a low level of identification with the team (n = 53, SSIS range = 7 to 15) and participants with a high level of team identification (n = 55, SSIS range = 16 to 56). An analysis of variance test (ANOVA) revealed that persons participating in the high identification group (M = 31.60, SD = 10.39) demonstrated higher identification with the team than those in the low identification group (M = 9.25, SD = 2.75), F(1, 106) = 229.90, p < .001. Males (M = 23.77, SD = 14.06) and females (M = 19.12, SD = 13.16) did not significantly differ in their level of identification with the target team, F(1, 106) = 2.82, p > .05. Consequently, all subsequent analyses were conducted across gender. The three “desire to attend” items were combined to form a single index (alpha = .93), as were the two “likely to miss” items (alpha = .81). Scores on these indices were divided by the number of items comprising each index (i.e., 3 and 2, respectively) to establish a score reflecting the original parameters of the scales (i.e., 1 to 8).

“... fans learning that the ticket was scarce and highly identified fans were particularly likely to report an interest in attending the game, and these two variables did not interact.”

Impact of ticket scarcity on attendance decisions

Responses to the three measures of attendance decisions (desire to attend index, willingness to miss index, and amount willing to pay) were examined through three 2 (level of team identification: high or low) x 2 (ticket scarcity: scarce or not scarce) between-subjects ANOVAs. Means and standard deviations appear in Table 1. The first ANOVA, which examined the desire to attend the target event, revealed a significant main effect for level of identification, F(1, 104) = 51.35, p < .001. As predicted, highly identified fans (M = 5.48, SD = 1.60) expressed a greater desire to attend than persons in the low identification group (M = 2.72, SD = 1.90). Also as predicted, the scarcity main effect was significant, F(1, 104) = 14.39, p < .001. Persons in the scarce condition reported a greater desire to attend the game (M = 5.09, SD = 2.08) than persons in the not scarce condition (M = 3.13, SD = 1.93). The two-way interaction was not significant, F(1, 104) = 1.07, p = .30.

With respect to the ANOVA targeting willingness to miss other activities to attend the event, as hypothesized, there was a significant level of identification main effect, F(1, 104) = 12.43, p < .001. Highly identified fans (M = 3.52, SD = 2.12) expressed a greater willingness to miss another engagement to attend the game than persons in the low identification group (M = 1.92, SD = 1.63). A significant scarcity main effect also confirmed expectations, F(1, 104) = 6.81, p < .01. Persons in the scarce condition reported a greater willingness to miss another event to attend the target con-
Table 1
Means and Standard Deviations for the Measures of Attendance Decisions by Level of Team Identification and Ticket Scarcity

<table>
<thead>
<tr>
<th>Measure</th>
<th>Low Identification</th>
<th>High Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scarce (SD)</td>
<td>Not Scarce (SD)</td>
</tr>
<tr>
<td>Desire to attend</td>
<td>3.75 (2.19)</td>
<td>2.15 (1.45)</td>
</tr>
<tr>
<td>Willingness to miss</td>
<td>2.61 (2.11)</td>
<td>1.53 (1.14)</td>
</tr>
<tr>
<td>Amount willing to pay</td>
<td>$32.63^a (37.09)^b</td>
<td>$15.74^b (22.70)</td>
</tr>
</tbody>
</table>

Note: Standard deviations appear in parentheses below each mean. ^Amounts ranged from $0.00 to $100.00. ^Amounts ranged from $10.00 to $200.00. 

Finally, considering the analysis of amount of money willing to spend on the ticket, the level of identification main effect was significant, $F(1, 104) = 12.11, p < .001$. Highly identified fans ($M = \$52.11, SD = \$42.88$) were willing to spend a greater amount of money on the ticket than persons in the low identification group ($M = \$21.79, SD = \$29.50$). Consistent with the previous analyses, the hypothesized scarcity main effect was also significant, $F(1, 104) = 4.80, p < .05$. Persons in the scarce condition reported a willingness to spend a greater amount of money to purchase the ticket ($M = \$48.84, SD = \$47.01$) than persons in the not scarce condition ($M = \$25.19, SD = \$25.91$). Also consistent with the two previous analyses, the two-way interaction was not significant, $F(1, 104) = 0.01, p = .91$.

Discussion

Each of the hypothesized effects was confirmed for each of the three measures of interest in attending the target event. Specifically, fans learning that the ticket was scarce and highly identified fans were particularly likely to report an interest in attending the game, and these two variables did not interact. It warrants mention that the data provided above involved a hypothetical sporting event, which may serve as a potential limitation of the study. Although the results were consistent with the hypotheses, it is important to replicate these findings with actual attendance figures from actual sporting events. Such a study could be undertaken by examining fans’ desire to attend a series of events as a consequence of the ticket availability for those events (for instance, fan reactions to games throughout a college basketball season). Based on the data reported here, one would expect fans, both high and low in team identification, to report increased interest in attending the “scarce ticket” games. In addition to extending the findings of this research, an advantage of such a methodology would be in controlling for various external variables in the regression equation, such as the quality of the opponent, the team’s recent performances, and the weather. Such an investigation would also allow researchers to evaluate the effect of ticket scarcity on less-than-marquee match-ups. The target hypothetical game in the current study was a mid-round NCAA tournament game, typically a game that will attract large amounts of attention. Although there is no theoretical reason to believe that the pattern of effects would differ for less important events (as long as tickets were scarce), empirical data is needed to ensure this is the case.
The scarcity effect may have benefits for sporting environments that extend beyond ticket purchases. For instance, marketing research suggests that scarcity may also speed purchases and consumption (Gordon, 1994). Applied to sporting event marketing, this finding implies that fans who view tickets to an event as scarce may purchase the tickets earlier than those who perceive tickets to be abundant. Such a situation would have an added bonus for sport management officials by providing more accurate early estimates of event attendance and revenue. Second, the scarcity effect likely accounts for many purchases of sport collectibles and memorabilia. Items such as trading cards, uniforms, and sporting equipment are typically more valued, sought after, and command a greater price when the item in question is viewed as rare (e.g., baseball cards with "flaws", autographed uniforms worn during actual contests). The scarcity effect detailed here can explain much of the interest in these items. Individuals marketing such items could likely increase interest in the items and, potentially, sales price by providing the impression that the items in question are rare (a common strategy among merchants in this area).

One fact that remains unknown is the source of power for the scarcity effect in sport. Researchers have suggested two potential motives underlying the scarcity effect (Cialdini, 1995). First, because many persons assume that objects difficult to possess are more valuable than those easily possessed, individuals may use item scarcity as an indication of quality. When applied to sporting events, this tendency implies that fans gauge the value of an event by the difficulty of attending the event, at least to some degree. Such a premise appears to have anecdotal evidence as indicated by the great desire of fans to attend events such as the Super Bowl, relative to their desire to attend nearly identical events, such as the NFL Conference Championship games. The second potential motive may be explained by the reactance theory (Brehm, 1966). According to this theory, individuals react strongly to situations in which their freedom to choose an outcome or behavioral option has been removed. Typically, they will respond in a manner that reestablishes their freedom of choice. It follows that in sport consumption environments, fans desire scarce tickets because they want to maintain their freedom of choice with respect to attendance decisions; rather than having their choice made for them by virtue of a sellout, fans want to choose which events they will attend.
Future research is needed to distinguish which motive is most prominent in sport consumption settings. In light of the above data indicating that the scarcity effect can be extended to sport consumption, future researchers may want to investigate the possibility that a similar marketing strategy, the deadline technique, can also be useful in sport. This strategy involves offering a product or service for a limited time, such as when products are sold at a reduced price but the price is said to be "for a limited time only" (Baron & Byrne, 2003; Brannon & Brock, 2001). The effectiveness of this technique may be due to the human need to avoid potential losses (Cialdini, 1995). Within sport settings, marketers may find that ticket sales increase when special-rate, "group packages" are offered for a short time only, and fans are made aware of the time restrictions. In fact, we may already have evidence of the deadline technique in sport, illustrated by teams offering promotional give-aways to a specified number of fans who are first in attendance (e.g., baseballs given to the first 5,000 attendees). However, additional research is needed to empirically document the effectiveness of this technique in the sport consumer realm.

References