Journal of Applied Sport Management

Volume 7 | Issue 2 Article 9

1-1-2015

Weather, Timing, and Promotions in Minor League Baseball: An Examination of Attendance in the International League

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Abstract

Understanding the different factors that impact attendance at sporting events is a timely and relevant topic for researchers and practitioners alike. The present study examines the effects of different types of promotions, weather, and selected temporal (i.e., time-related) elements on attendance in Minor League Baseball. Using data for teams participating in the International League during the 2010 season, results from a multiple regression analysis revealed that special events, promotional giveaways, and non-workdays have a positive impact on attendance; while suboptimal weather conditions have a negative impact. These findings contribute to our understanding of the factors that impact attendance in professional baseball and hold useful implications for future research and managerial practice.

Keywords: *minor league baseball, attendance, promotions, weather, timing*

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In 2014, Minor League Baseball (MiLB) drew approximately 42.4 million spectators (Minor League Baseball, 2014a). Unlike the three other major North American professional sports leagues, Major League Baseball has an extensive, multi-tiered minor league system currently consisting of 246 member clubs (Minor League Baseball, 2014b). Though independently owned and operated, the majority of these teams are directly affiliated with a Major League Baseball parent club. The overarching goal of each franchise is twofold: (1) to serve as a training ground to develop and prepare players for their parent club at the major league level, and (2) to operate as a business by generating revenue and maximizing profits. Consequently, examining and enhancing our understanding of the factors that impact event attendance in MiLB will help stadium managers, team executives, and sport marketing practitioners refine operating schedules, develop promotional agendas, plan for staffing and purchasing activities, and forecast future and long-term policy changes.

Review of Literature

A number of studies have been conducted to examine the factors that impact sporting event attendance. While this line of research has been conducted in a number of different sport settings, such as professional basketball (Berri, Schmidt, & Brook, 2004; Leadley & Zygmont, 2005; Pecha & Crossan, 2009; Zhang, Pease, Hui, & Michaud, 1994), hockey (Leadley & Zygmont, 2006; Paul, 2003; Winfree & Fort, 2008), and soccer (Ferreira & Bravo, 2007; García & Rodríguez, 2002; Jewell & Molina, 2005), it has been examined most extensively within the context of professional baseball, which is the focus of the present study.

Beginning with the work of Demmert (1973) and Noll (1974), a number of studies have examined the factors believed to impact gate attendance in professional baseball, including promotions (Boyd & Krehbiel, 1999, 2003, 2006; Hill, Madura, & Zuber, 1982; McDonald & Rascher, 2000), new stadiums (Clapp & Hakes, 2005; Coffin, 1996; Zygmont & Leadley, 2005), work stoppages (Coates & Harrison, 2005; Schmidt & Berri, 2002), and team success (Baade & Tiehan, 1990; Gitter & Rhoads, 2010). These analyses have contributed to our current understanding, but have been limited in three important ways. First, most prior work has focused on the factors impacting attendance in the context of Major League Baseball, with very few studies examining attendance in Minor League Baseball. Second, prior research has largely ignored the impact of weather conditions. And third, this research has relied predominately on the analysis of annual, aggregate-level data (Branvold, Pan, & Gabert, 1997; Gitter & Rhoads, 2010, 2011). Given these limitations, our understanding of the factors impacting attendance at both the minor league and individual game level is still quite limited.

Promotions, Timing, and Weather in Minor League Baseball

Minor league baseball franchises, even more so than their major league counterparts, need to rely on more than team quality and star players to draw specta-

tors to their games. Fans (and their families) attend minor league contests not only to watch the game itself, but as a quality and inexpensive form of entertainment (McKeon, 2004; Sutera, 2014). A variety of factors can influence the number of people that attend a particular sporting event, such as a minor league ballgame. While some of these factors are under a team's control, others are uncontrollable. In the present study, we refer to the former as internal factors and the latter as external factors. In the context of the present study, examples of internal factors include promotions and ticket price, whereas examples of external factors include weather conditions and the time at which the game is played.

A study by Siegfried and Eisenberg (1980) was the first to include any type of promotional variable (an internal factor) to explore attendance for Minor League Baseball. Their analysis, which included data from 27 teams during the 1973 to 1977 seasons, suggested that "an additional price promotion can be expected to yield at least 975 more fans per season, while an additional merchandise promotion is predicted to generate 1,568 extra fans over a season" (p. 66).

Other more recent analyses have also explored the impact on minor league attendance of promotions and special events (internal factors) and demographic variables, temporal factors, and weather conditions (external factors). First, Gifis and Sommers (2006) examined data for the Eastern League's Trenton Thunder during the 2004 season (n = 66). Their findings suggested that promotions (i.e., fireworks, guest appearances, and bobblehead giveaways) significantly increase attendance. Additionally, games played on the weekend, during the day, and in the summer (which indirectly considered the impact of varying weather conditions) predicted an increase in attendance. Unique from the other analyses focusing on the impact of promotions, weather, and temporal factors on minor league baseball attendance, this study also included interaction terms (i.e., weekend games, bobblehead giveaways, and day games with summer months), though none were significant.

Next, Paul, Paul, Toma, and Brennan (2007) examined data from the NY-Penn Baseball League during the 2006 season (n = 1036). The study findings indicated that promotional activities like fireworks, merchandise giveaways, events, and concerts significantly predicted an increase in attendance, while other types of promotions (i.e., reduced prices on food, beer, or tickets) were not significant. Interestingly, games played on a Saturday or Sunday did not significantly impact attendance, while mid-week games (i.e., those played on Tuesday and Thursday) did positively impact attendance. In a similar study, Paul, Toma, and Weinbach (2009) investigated data from the South Atlantic League during the 2004 season (n = 970) and arrived at similar conclusions (with the exception of weekends games predicting a significant increase in attendance).

Cebula, Toma, and Carmichael (2009) examined data from the Carolina League during the 2006 season (n = 975). Additionally, they were the first to use percent of stadium capacity as the dependent variable, as opposed to the raw attendance numbers employed in previous analyses. Their results indicated a fireworks

display, high-valued merchandise giveaways, and Saturday games had the greatest impact on gate attendance. Conversely, poor weather conditions (i.e., rain) and games played during the week had a smaller, negative impact on attendance.

Most recently, Paul and Weinbach (2013) explored the impact of team loyalty and team following (i.e., the "Yankee Effect") within the context of minor league baseball. Their findings suggested that the presence of a Yankees-affiliate as the visiting team had a positive and significant impact on attendance for the International League. Specific to the present study, their study was one of the first to consider multiple types of weather conditions as they included a series of weather-related dummy variables in their model (i.e., partly cloudy, cloudy, clear, sunny, rain, and drizzle). In particular, they found that cloudy days and rain predicted a significant decrease in attendance; with rain having the largest impact on attendance (approximately 730 less attendees per game).

Across the studies reviewed, the findings suggested a number of consistencies, as well as some interesting inconsistencies. For example, the internal factor promotions, especially higher value merchandise giveaways and fireworks, have been found to consistently increase minor league game attendance (e.g., Gifis & Sommers, 2006; Paul et al., 2007; Paul et al., 2009). Conversely, the impact of the external factor day of the week has been inconsistent. For example, Paul et al. (2007) found that relative to weekend games, weekday games predicted an increase in attendance, while Cebula et al. (2009) found the opposite (i.e., lower attendance for weekday games).

Current Investigation

The present study seeks to build on prior research by investigating the impact on attendance in Minor League Baseball of promotions (i.e., merchandise giveaways, firework displays, and other special events) and ticket price as internal factors; and weather (i.e., temperature and precipitation) and temporal variables (i.e., day of the week and opening/final game of the season) as external factors. The impact of these factors is examined using data for teams participating in the International League (IL), a Triple-A level league, during the 2010 season.

The remainder of this paper is organized as follows. The next section describes the study data and outlines the regression model. The following section presents the results of an empirical study conducted to investigate the interplay of weather conditions, temporal factors, and promotions on gate attendance for the 14 minor league teams competing in the International League during the 2010 season. The final section offers a discussion of the study's implications for future research and managerial practice.

Data and Variable Descriptions

The International League

The International League (IL) operates in the eastern United States and is one of three Triple-A minor league baseball leagues (the highest level of Minor League Baseball). Currently, the IL consists of 14 teams, each of which are affiliated with a parent franchise in Major League Baseball, and is divided into three divisions: North (Buffalo, Lehigh Valley, Pawtucket, Rochester, Scranton/Wilkes-Barre, Syracuse), South (Charlotte, Durham, Gwinnett, Norfolk), and West (Columbus, Indianapolis, Louisville, Toledo).

Attendance Data

Individual game home attendance figures (n = 994 games) for the 2010 IL season were collected via game box scores from each team's official website. These raw attendance statistics were then operationalized as a percentage of the stadium capacity where each game was played and this value served as the dependent variable for the present study. Percentage of stadium capacity was used as opposed to raw attendance numbers to allow for "comparison across stadiums of different capacities" (Cebula et al., 2009, p. 3211) and employing this measure allows the estimates of each independent variable to be interpreted as a percentage, rather than absolute, change in attendance.

Internal and External Factors Examined

External factor variables. Two sets of external factors served as independent variables in the present study: weather and temporal (i.e., time-related) factors. Similar to the attendance data, weather data were acquired from the game box scores through each team's individual website and from the home city's local weather station. Initially, two variables were used to summarize the impact of weather: (1) temperature at the game's opening pitch and (2) a precipitation binary dummy variable. Temperature, or *temp*, is the venue's recorded temperature at the time of the opening pitch and is measured in degrees Fahrenheit (°F). A binary dummy precipitation variable, *precipitation*, was also included in the model. This variable was coded with a value of 1 if precipitation (e.g., rain, snow, etc.) occurred as reported by the city's weather station at any point during the day of the scheduled contest. Since all games in the International League are played outdoors, it was hypothesized that higher temperatures (with the possibility of a threshold temperature being reached) would have a positive impact and precipitation would have a negative impact on attendance.

In addition to the weather variables described above, temporal variables, acquired from each team's official website, were included in order to control for other important factors in the analysis. First, since the majority of adults in the United States work Monday through Friday and to account for the opportunity cost of a spectators' time during the week, a weekend dummy variable, *wknd*, was

included in the model. It is important to note that Friday games were considered as a weekend variable as all Friday games for the IL were played at night. Based on the assumption that spectators have less leisure time during the workweek, one would expect a positive relationship between the *wknd* dummy variable and attendance. Additionally, since baseball attendance is traditionally maximized during marquee games, a dummy variable representing opening day and the final home game of the season, *op_fin*, was also included (with 1 indicating opening day or final home game and 0 representing all other game days). From this, one would also predict a positive relationship between the *op_fin* dummy variable and spectator attendance.

Internal factor variables. Two sets of internal factors also served as independent variables in the present study: promotional efforts and ticket price. Promotions and special events are offered as an incentive for fans to attend a sporting event. As is the case with many minor league baseball franchises, this need to incentivize attendance is even more pronounced as roster turnover occurs with great regularity due to the constant advancement of a team's top players to the Major Leagues. Additionally, previous research has suggested that minor league games are more about the experience than the actual game itself (e.g., Paul et al., 2009). The present analysis, therefore, included four binary dummy promotional variables, each reflecting the marketing efforts of each individual franchise, and were classified as follows: (1) *l_giveaway* (a binary dummy variable representing that a low-valued item was given away prior to the game (e.g., magnetic team schedules, key chains, etc.); (2) *h_giveaway* (a binary dummy variable indicating that a high-valued item was given away prior to the game (e.g., hat, jersey, bobblehead, etc.); (3) *fireworks* (a binary dummy variable representing a pre- or postgame fireworks show); and (4) *event* (a binary dummy variable indicating a pre- or postgame special event (e.g., a concert, family-centered activity, etc.). Assuming *ceteris paribus* conditions, one would expect that each of these four variables should positively impact attendance.

In addition to the promotional dummy variables examined, the cost to attend a game was also considered. Ticket price, *t_price*, represented the cost of a general admission ticket for a given team's home game. Based on classical economic theory, when the price of a normal good increases, the quantity demanded for that item should decrease. As a result, we can expect a negative relationship between ticket price and attendance. Table 1 summarizes the independent variables examined in the analysis, the type variable (continuous or dummy), and the expected sign on each coefficient.

Table 1

Independent Variables Explored and Expected Coefficient Sign

Independent Variable	Variable Description	Temporal Resolution	Expected Sign
External Factors			
temp	temperature (in whole °F) at the game's opening pitch	daily	+
precipitation	= 1 if precipitation on the date of the game; = 0 otherwise	dummy	–
op_fin	= 1 if an opening day or final home game; = 0 otherwise	dummy	+
wknd	= 1 if a weekend game (i.e., Friday, Saturday, or Sunday); = 0 otherwise	dummy	+
Internal Factors			
l_giveaway	= 1 if a low value item was given away upon entry into the stadium (e.g., magnetic team schedules, key chains, etc.); = 0 otherwise	dummy	+
h_giveaway	= 1 if a high value item was given away upon entry into the stadium (e.g., hat, jersey, bobblehead, etc.); = 0 otherwise	dummy	+
fireworks	= 1 if there was a fireworks show prior to or following the game; = 0 otherwise	dummy	+
event	= 1 if there was a special event prior to, during, or following the game (e.g., family-centered activity, concert, etc.); = 0 otherwise	dummy	+
t_price	price (in $) for a general admission ticket	daily	–

Methodology

Data Analysis

The analysis was conducted using Predictive Analytics Software (version 20.0). First, the data were screened for missing values. Promotional data for Durham, Norfolk, and Rochester were unavailable via the team websites and therefore these franchises were excluded from the dataset. Additionally, 126 observations contained missing data due to incomplete weather reports and were also excluded. The final dataset consisted of 646 observations. Next, basic descriptive statistics were generated for the sample. All variables fell within expected ranges and are presented in Table 2. As previously mentioned, raw gate attendance, as a percentage of stadium capacity, served as the dependent variable for this analysis. The advantage of this approach is that it allows each parameter estimate to be interpreted as a percentage, rather than absolute, change in attendance. Descriptive

analysis (see Table 2) also indicated that the data relating attendance and game-time temperature displayed a quadratic tendency. More specifically, average percent attendance appeared to maximize at a threshold temperature, which was then followed by decrease at higher temperature values (see Figure 1). To account for this phenomenon, a quadratic term for the temperature variable, $temp^2$, was added to the regression model.

Table 2

Descriptive Statistics for Variables of Interest (n = 646)

Variables	Mean	SD[a]	Minimum	Maximum
%_capacity (DV)	0.633	0.273	0.111	1.524
External factors				
temp	76.49	11.737	43.00	100.00
precipitation	0.09	0.284	0	1
op_fin	0.03	0.167	0	1
wknd	0.46	0.498	0	1
Internal factors				
l_giveaway	0.09	0.313	0	1
h_giveaway	0.09	0.289	0	1
fireworks	0.17	0.378	0	1
event	0.45	0.447	0	1
t_price	7.68	1.356	6.00	10.00

[a] SD = standard deviation

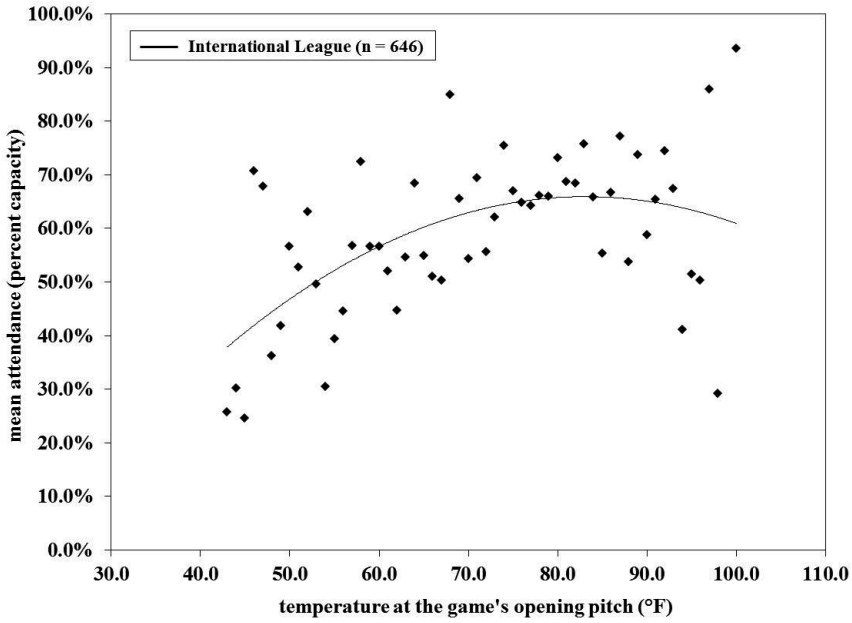

Figure 1. Mean attendance Against Game-Time Temperature

Prior to performing the regression analyses, the independent variables were examined for issues with multicollinearity using the variance inflation factor (VIF). VIF values greater than 10 indicate problematic relationships among the variables (Tabachnick & Fidell, 2012). Though maximum temperature (*temp*) and its quadratic ($temp^2$) exhibited very high VIF values (i.e., 118.667 and 118.516 respectively), they remained a part of the regression model due to their importance in predicting attendance for an outdoor sporting event attendance. The remaining variables had VIFs within the acceptable range (from 1.030 to 1.462) and are reported in Table 3.

Table 3

First-Order Regression Results

	Unstandardized Coefficients			
Variables	B	SE	t	VIF
constant	0.166	0.274	0.606	--
External factors				
temp	0.029*	0.008	3.781*	118.666
$temp^2$	-1.81E-4*	5.30E-5	-3.418*	118.516
precipitation	-0.078*	0.030	-2.620*	1.030
op_fin	0.196*	0.052	3.792*	1.044
wknd	0.079*	0.020	3.908*	1.462
Internal factors				
l_giveaway	0.108*	0.029	3.725*	1.031
h_giveaway	0.105*	0.029	3.593*	1.060
fireworks	0.201*	0.024	8.434*	1.289
event	0.052*	0.018	2.841*	1.200
t_price	-0.087*	0.007	-12.485*	1.075

DV: attendance as a percentage of stadium capacity

$R^2 = 0.413$; $R^2_{adj} = 0.404$; $n = 646$; $F_{(10,635)} = 44.631$; $p \leq 0.001$

*$p \leq 0.01$

Next, the data were screened for univariate and multivariate outliers. None were found for the present dataset. Finally, standard multiple regression analysis with ordinary least squares (OLS) was employed to assess the independent variables' ability to predict attendance (the dependent variable) for the International League ($n = 646$). All regression assumptions were met and satisfied (Tabachnick & Fidell, 2012).

Empirical Model

To estimate how weather, temporal factors, and promotions impact minor league baseball attendance, the following regression model was developed (Equation 1).

Equation 1. Estimated empirical model

$$\%\_capacity = \beta_0 + \beta_1 temp + \beta_2 (temp)^2 + \beta_3 precipitation + \beta_4 op\_fin + \beta_5 wknd + \beta_6 l\_giveaway + \beta_7 h\_giveaway + \beta_8 fireworks + \beta_9 event + \beta_{10} t\_price + \varepsilon$$

Results

Regression Model

The results from the OLS regression analysis are shown in Table 3. All five of the external factor variables examined (local temperature at the game's first pitch, the quadratic of local temperature at the game's first pitch, precipitation dummy, opening day/final home game dummy, and weekend dummy) were found to be statistically significant (at the 1% level or better). Additionally, the five internal factor variables (low-valued giveaway dummy, high-valued giveaway dummy, fireworks dummy, event dummy, and ticket price) were significant (at the 1% level or better). These 10 variables explained 41.3% of the model's variance ($R^2 = 0.413$) and the overall model was significant [$F(10,635) = 44.631$, $p < 0.001$)].

The regression estimates associated with the five external factors were consistent with the expectations offered in Table 1. First, the coefficient for *precipitation* was negative ($t = -2.620$; $p < 0.01$), which the coefficient indicating that precipitation at any point on a given day predicts a 7.8% decrease in attendance to an International League baseball game. Second, the coefficients on the opening day/final home game ($t = 3.792$, $p < 0.01$) and weekend ($t = 3.908$, $p < 0.01$) dummy variables were both positive, indicating that a 19.6% increase in attendance is predicted by the game being either the first or last day home game of the season, while a 7.9% increase is associated with a weekend contest (i.e., Friday, Saturday, and Sunday). Third, the temperature at the game's first pitch was positive ($t = 3.781$; $p < 0.01$) suggesting that for each degree increase (i.e., 1°F) a 2.9% increase in attendance is predicted. Additionally, the quadratic of temperature at the game's first pitch was also significant, but negative ($t = -3.418$; $p < 0.01$); thus indicating that attendance is optimized at a specific temperature (which for this dataset was 84°F) and once that point is reached, attendance begins to decrease.

Similar to estimates obtained for the external factors, the coefficients for the internal factors yielded results that were as expected. One of these internal predictor variables, ticket price, was negative. More specifically, each dollar increase in the average price of a ticket predicted an 8.7% decrease in attendance ($t = -12.485$; $p < 0.01$). The four other internal predictor variables were positive. Low- and high-valued promotional giveaways were associated with a 10.8% ($t = 3.725$, $p < 0.01$) and 10.5% ($t = 3.593$, $p < 0.01$) increase in attendance respectively. Additionally,

special events (i.e., concerts, family nights, etc.) ($t = 2.841$, $p < 0.01$) and fireworks ($t = 8.434$, $p < 0.01$) predicted a 5.2% and 20.1% increase in attendance respectively.

Discussion

The present study examined the impact of weather, timing, and promotional activities on attendance for the AAA-level International League in Minor League Baseball. The study findings demonstrate that promotions are generally effective short-term incentives that significantly and positively impact IL attendance. Additionally, external factors such as weather conditions and temporal variations (e.g., weekday versus weekend game) play an important role in predicting IL attendance patterns.

In terms of the external factors explored, the coefficients for all the variables examined were statistically significant and consistent with prior expectations (Table 1). First, temperature at the game's first pitch significantly and positively influenced attendance, which is similar to the findings from previous investigations (e.g., Boyd & Krehbiel, 1999, 2003, 2006; Marcum & Greenstein, 1985; McDonald & Rascher, 2000). Additionally, the quadratic function of the temperature variable was significant; suggesting that once a maximum threshold temperature is reached, attendance is then optimized; and any subsequent increase in temperature will predict a decrease in attendance demand. This finding has yet to be reported in a study of MiLB attendance, though it had been found in a prior study involving MLB attendance (McDonald & Rascher, 2000). The impact of precipitation on attendance also significantly predicted a decrease in attendance; which has been reported in prior MiLB investigations (Cebula et al., 2009; Paul & Weinbach, 2013).

Interestingly, among the external factors examined, the impacts of the weekend and opening day/final home game variables were much greater than the impacts of the weather-related variables. Games played on a weekend predicted a positive and significant increase in attendance (Boyd & Krehbiel, 1999, 2003, 2006; Gifis & Sommers, 2006; McDonald & Rascher, 2000). Additionally, of the external factors examined, games that played either on opening day or as the team's final home game had the greatest impact on increasing attendance (a finding not previously reported in the context of MiLB data). Traditionally speaking, both findings make sense as fans often have a strong desire to attend the home opener or season finale given their hopes for a strong season or knowing that this will be the last time they will be able to watch this specific team for a number of months. Additionally, fans, especially fans with families, have a much lower opportunity cost for leisure activities during the weekends and therefore would be more likely to attend on those days.

In addition to the external factors examined, five other internal factors were also included in the model. The results indicated that for the International League,

fireworks displays, low-priced giveaways, high-priced giveaways, and special events all suggested an increase in attendance. Conversely, for each one-dollar increase in general admission ticket prices, a significant decrease in home attendance was found (e.g., Siegfried & Eisenberg, 1980). Of the four promotional variables examined, having a fireworks display had the highest impact on attendance; which is similar to the findings reported in other MiLB studies (Gifis & Sommers, 2006; Paul et al., 2007; Paul et al., 2009). Similarly, the impact of high-value merchandise giveaways has been reported before (Gifis & Sommers, 2006; Paul et al., 2007; Paul et al., 2009); however, our finding that low-value giveaways also had a strong impact (slightly higher than the impact of high-value giveaways) is notable. The strong positive effects associated with fireworks displays and merchandise giveaways is consistent with the family-based nature of minor league baseball; and suggests that fans (and their families) attend these events for a multi-faceted entertainment experience, rather than for the entertainment provided by the game itself.

Like any empirical analyses, the present study is not without its limitations. First and most notably, the R-square value indicated that 41.9% of the variance in the study data was explained by the variables in the model. Thus, while a portion of variance was accounted for, incorporating other variables might increase the amount of variance explained. Of these additional variables, those that might have a positive impact on attendance include a new stadium (Gitter & Rhoads, 2014), team quality (Gitter & Rhoads, 2010), and parent club loyalty (Paul & Weinbach, 2013); while those that might have a negative impact include the availability of nearby substitutes (Demmert, 1973), distance from the parent MLB club (Gitter & Rhoads, 2010), in-stadium amenities or concessions (Lee & Won, 2012), and minor league classification levels (Gitter & Rhoads, 2010; Paul & Weinbach, 2013). The impact of these and other variables should be considered in future investigations.

Another limitation was that data for three teams were omitted from the analysis and other observations were removed due to incomplete weather data. More specifically, the *precipitation* variable was somewhat ambiguous as it only accounted for whether precipitation had occurred on a given game day and did not differentiate between a steady rainfall and a light drizzle. Future research should explore these distinctions for weather-related factors (similar to the anlaysis reported by Paul & Weinbach, 2013). Finally, the impact of a star player being sent down to the minor leagues to recover from an injury (Turner, 2013) or a top-prospect (Gitter & Rhoads, 2011) was not considered. Future work should address these limitations and utilize larger datasets (consisting of additional leagues over additional seasons) to more fully explore the factors that influence MiLB attendance.

Taken together, our findings suggest that team management should view International League games as not just a standalone sporting event, but as an overall, family-centered, entertainment experience. Based on this notion, team manage-

ment should center their efforts more on offering incentives (through both large and small promotional giveaways) and creating an entertaining experience in order to maximize incentive to attend for team fans and their family members. Consistent with the findings of other MiLB investigations, the present findings show that promotions and special events play an important role in encouraging game attendance in the context of the International League. In particular, the findings show that promotions involving fireworks and low- and high-valued merchandise giveaways tended to have the greatest impact on attendance. This tendency would be good to emphasize when soliciting corporate sponsors for promotional giveaways and post-game events. In addition, while the external weather and temporal variables had less of an impact on attendance, the estimates reported for these variables could be used to develop and refine attendance forecasts for upcoming games and series. These forecasts could help team executives adjust staffing plans, concession orders, and operating schedules, resulting in operational efficiencies and cost savings.

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