ABSTRACT

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The sport industry, valued between $168.5 billion and $207.5 billion, is twice the size of the automobile industry and seven times the size of the movie industry in the United States (DeSarbo, 2009; Milano & Chelladurai, 2011). Sport spectators are responsible for roughly 13.4%, or $26.27 billion, of the industry’s consumption (“The Sports Industry”, 2007). Previous research (e.g., DeSchriver, 2007; Rascher, McEvoy, Nagel, & Brown, 2007; Trail, Anderson, & Fink, 2000; 2005; Trail, Fink, & Anderson, 2003) has examined the psychological and social variables as well as certain game day variables to explain spending behavior. However, no previous research has examined the consumption phase beyond purchase intention (i.e., the purchase component) using actual financial data. The purpose of my study was to examine the effects of game day variables (i.e., game outcome, month in season, opponent, day of week, game time, or special promotion) on ticket sales, merchandise per cap sales, and food and beverage per cap sales for a professional hockey team.

Data on game opponent, game outcome, month in season, day of week, game time, and special promotions were collected from the National Hockey League (NHL) team’s official website and from official team documents (i.e., game day event revenue summaries). The total sample consisted of 123 home hockey games from the 2006-2007, 2007-2008, and 2008-2009 NHL regular seasons that began in early October and ran through mid-April. The Statistical Package for the Social Sciences, version 16.0 for Windows, was used to conduct preliminary analysis including descriptive statistics (i.e., means, variance,
standard deviation, and frequency of the data) and correlations to test for multicollinearity among the variables. A Multivariate Analysis of Variance tested for group differences based on different outcomes for each game (i.e., wins and losses) with respect to food and beverage per cap sales and merchandise per cap sales. Using multiple linear stepwise regression models, the independent variables (i.e., game outcome, the game’s month in season, opponent, day of week, game time, and special promotion were regressed on each of the dependent variables including ticket sales, merchandise per cap sales, and food and beverage per cap sales.

No significant relationships or differences existed between game outcome (i.e., win or loss) and merchandise per cap sales and food and beverage per cap sales. Even though game outcome did not influence consumer spending, certain non-performance game day variables did influence consumer spending. Day of week, time of game, and special promotions explained 32% of the variance in ticket sales. With respect to merchandise per cap sales, 32% of the variance was explained by month in season and day of week. Lastly, day of week and time of game explained 31% of the variance in food and beverage per cap sales.

Satisfaction theory and self-esteem theory were used as the theoretical explanations for relationships among the variables. Conclusions from this study provide practical insight into sport consumer spending. For this particular NHL team under investigation, consumer spending was influenced by non-performance game day variables. Unlike the game outcome, non-performance game day factors are known ahead of time, which allows sport organizations to react with appropriate marketing efforts, pricing strategies, concession specials, and promotions to maximize game day revenue. Hopefully, more sport organizations will be inclined to analyze their game day revenues and assess the variables
influencing consumer spending. Having concrete data and results would allow sport organizations to potentially predict attendance and maximize consumer spending at games.
Effects of Game Day Variables on Consumer Spending for a Professional Hockey Team

by
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BIOGRAPHY

Katharine Elizabeth Kelley is a candidate to receive her Master of Science Degree in Parks, Recreation and Tourism Management. She received her undergraduate degree, with a Bachelor of Science in Psychology, from Furman University. Katharine was a four-year starter on the women’s soccer team while at Furman. After graduating in 2006, Katharine worked and saved money to take a backpacking trip through Europe, visiting 13 countries along the way. While she was in Interlaken, Switzerland, she received her acceptance into the N.C. State graduate program. She enrolled full-time in the fall of 2007, and Katharine also served as a Teaching Assistant in the sport management program during the 2007-2008 academic year. Katharine was offered a full-time job in the sport industry in the fall of 2008, and she managed to continue her graduate program part-time while working a full-time job.
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Chapter I

INTRODUCTION

Sport Consumer Spending

The sport industry is a major industry in the United States. The size of the Gross Domestic Sport Product in the United States is valued between $168.5 billion and $207.5 billion (Milano & Chelladurai, 2011). Comparatively, in the United States the sport industry is twice the size of the automobile industry and seven times the size of the movie (DeSarbo, 2009). The billion-dollar sport industry highlights the fact that a significant amount of our society’s discretionary income is spent on spectator sports. Spectators and fans are responsible for roughly $26.27 billion, or 13.4%, of the sport industry’s overall revenue by making game-day purchases including tickets, merchandise, food and beverage and parking (“Sport business,” 2007). Game day expenses for consumers, like ticket, merchandise, and food and beverage purchases, are critical sources of revenue for a sport organization.

Therefore, sport organizations should understand what influences consumer spending on game day. The sport industry needs to understand if different game day revenue streams for an organization (i.e., ticket sales, merchandise sales, and food and beverage sales) are affected by game day variables such as game outcome, the game’s month in season, game opponent, game day of week, game time, or special promotion. Using actual financial data, researchers and sport organizations could explain consumer game day spending. Having inside information will allow sport organizations to potentially predict attendance and consumer spending at a game. As a result, marketing efforts, pricing strategies, scheduling,
concession specials, and use of promotions can be instituted by sport organizations to maximize game day revenue.

**Sport Consumer Game Day Spending**

The Fan Cost Index (FCI) helps to explain the underlying total spending that a sport consumer may face at a sporting event. The FCI calculates the average expense for four average-price tickets, two small draft beers, four small soft drinks, four hot dogs, parking for one car, two game programs, and two adult-size adjustable hats for each professional league (Greenberg, Murray, Gluskin, & Bulla, 2008). In 2008 the FCI for the National Football League (NFL) was $396.36, and the National Basketball Association (NBA) FCI totaled $291.93. Like NFL and NBA games, a National Hockey League (NHL) game is a high priced event to attend. The FCI in the 2008-2009 season totaled $288.23.

Of the costs calculated in the FCI, spectator ticket purchases are considered to be one of the greatest game-day revenue generators for sport organizations, especially in the NHL. For example, the NHL recently signed a ten year $2 billion television deal compared to the NFL media fees that are projected to be $8 billion annually by the end of the decade (Kaplan, 2011; Ourand, 2011). Even though a higher priced television deal is a step in the right direction for the league, in the NHL spectator spending on tickets generates more than two-thirds of the annual income for nearly half the NHL franchises (Masteralexis, Barr, & Hums, 2008). The NHL relies more on gate and game day revenue for sustainability compared to the other leagues that can fall back on lucrative media and broadcast contracts.
Spectator spending on merchandise at games and events also contributes to sport franchise and league revenue. The buying of cross-league licensed goods, which includes tradmarked sport brand names, logos, and images on products, is estimated to be 5.4% ($10.5 billion) of the sport industry consumer spending (“The Sport Industry,” 2007). Specific to the NHL, in December 2008, the league reported that merchandise sales had increased 44% from the previous year (Pursell, 2008). Despite increased merchandise spending, the NHL was last in licensed sports products retail sales compared to the NFL, NBA and Major League Baseball (MLB) in 2002 and 2007 ( “Sport industry”; Weisman, 2003). The NFL, NBA, MLB, and NHL gross merchandise sales amounted to $3.1 billion, $2.9 billion, $2.15 billion, and $1.5 billion, respectively (Weisman). Although consumer spending on merchandise and licensed goods contribute to total revenue, they do not match the financial impact of ticket sales.

In addition to tickets and merchandise, spectators may choose to spend their money on concessions (i.e., food and beverage) during a sport event. Concession sales account for anywhere between 10% and 28% of a sport facility’s revenue (Masteralexis, Barr, & Hums, 2008). In Minor League Baseball, concession sales account for at least 25% of a franchise’s revenue, and beer sales alone can range from 35% to 55% of total concession sales in any league (Howard & Crompton, 2003; Johnson, 1993). Professional sports have an advantage because spectators are exposed to higher priced food and alcohol, premium seating, and premium suite food and beverage orders. While total consumer expenditures on concessions are important for total revenue, the effectiveness of concession operations is based on per
capita (per cap) spending. For example, in the NHL, the concession sales per cap can range from $5 to $12 (Howard & Crompton). The NHL’s concession per cap spending falls closely behind the MLB and the NFL but ahead of the NBA and Minor League Baseball (Howard & Crompton). If an organization can engage each person to spend more money on food and beverage, then naturally total consumer spending increases.

In sum sport spectator spending on game or event day contributes billions of dollars to the overall sport industry revenue. Moreover, gate revenue and the accompanying consumer spending on concessions and food and beverage during the game are critical for the sustainability and success of professional teams, especially in the NHL. Therefore, NHL franchises and other sport organizations could benefit from understanding what influences consumer spending on game day. Marketing plans, ticket pricing strategies, promotions, merchandise discounts, food and beverage specials, and scheduling can be maximized to generate the largest game day revenue for a sport organization.

**Statement of the Problem**

Spectators and fans are responsible for a large portion of a sport organization’s game day revenue and overall financial success by choosing to spend their discretionary income on tickets, merchandise, and concessions. Therefore, sport organizations should understand and investigate what variables influence a patron’s decision to spend money. Previous research (e.g., Trail, Anderson, & Fink, 2000; 2005; Trail, Fink, & Anderson, 2003) examining sport consumer behavior has focused on the social and psychological variables that impact spending behavioral intentions. In addition to the psychosocial variables that affect a
spectator’s intentions to purchase, other researchers (e.g., DeSchriver, 2007; Rascher, McEvoy, Nagel, & Brown, 2007) have examined game day variables such as game day of week, time of game, opponent, variable ticket pricing, and game outcome that may also influence consumers’ purchase intentions. Additionally, contradictory research results (e.g., DeSchriver, 2007; DeSchriver & Jensen, 2002; Rascher et al.) regarding the effects of winning and losing on consumer behavior present a specific need to examine the impact of game outcome on consumer game day spending. However, no previous research has examined the consumption phase beyond purchase intention (i.e., the purchase component) using actual game-day financial data.

**Purpose of Study**

The purpose of my study is to examine the effects game day variables (i.e., game outcome, the game’s month in season, opponent, day of week, game time, or special promotion) have on ticket sales, merchandise per cap sales, and food and beverage per cap sales for a professional sport organization using actual financial data.

**Hypotheses**

**H I:** Researchers (e.g., Branvold, Pan, & Gabert, 1997; DeSchriver & Jensen, 2002) have found that success or failure of a team is arguably one of the primary determinants of consumer spending. Thus, I hypothesize that winning will have a statistically significant influence on merchandise per cap sales and food and beverage per cap sales.
H II: Of the non-performance game day factors including regular promotional activity (e.g., giveaway), special promotions (e.g., fireworks, doubleheader), weekday/weekend, visitor all-stars, home team performance, and previous season visiting team performance that DeSchriver (2007) tested, only special promotions and star power had a statistically significant impact on attendance.

a) I hypothesize that special promotions will have a statistically significant influence on attendance.

b) Based on previous research (e.g., DeSchriver, 2007), I also hypothesize that special promotions will have a statistically significant influence on merchandise per cap sales.

c) Finally, I hypothesize that of the non-performance game-day factors (i.e., game’s month in season, opponent, day of week, game time, and special promotion) tested, only special promotions will have a statistically significant influence on food and beverage per cap sales.

Delimitations

1. My study was limited to one professional NHL ice hockey team in the Eastern Conference.


3. My study was limited by the team’s market size.
4. My study was limited by the professional team’s years in the market (i.e., 13 years).

**Limitations**

1. Data was collected from event revenue summary reports provided by a professional ice hockey team; thus, the results are based on the accuracy of their data entry for each event revenue summary reports for each game.

2. The analysis of consumer spending (i.e., ticket sales, merchandise sales, and food and beverage sales) at the game is derived from the total drop count.

3. Level of team identification was not measured. I am assuming that overall consumers’ identification with a team would be high and skewed because they are attending a NHL game.

4. My study was limited by the success of the team during three specific seasons. The NHL team had a 136-106-22 record during data collection and a 71-43-9 regular season home record during the three seasons. The team won 57.7% of their regular season home games, lost 35% of the home games, and lost 7.3% of their regular season games in overtime during the three seasons.

**Definitions of Terms**

1. Discretionary Income: Income available to spend after the necessary bills and expenses are paid.
2. **Food and Beverage Sales:** Food and Beverage Sales include all concessions, subcontractors (e.g., Dippin’ Dots), premium suite sales, alcohol sales, the club bar, and the private club food sales sold during a game.

3. **Game Opponent:** Game opponent refers to the visiting NHL team.

4. **Game Outcome:** Game outcome refers to whether or not the home team won (W), lost (L), or had an overtime loss (OTL). The official record of a team is recorded as Wins – Losses – Overtime Losses.

5. **Merchandise Sales:** Merchandise sales encompass all sales that occur at the official franchise retail stores throughout the arena. Items sold in the stores include authentic and licensed jerseys, t-shirts, pucks, and other team branded memorabilia and apparel.

6. **Per capita:** Per capita (per cap) refers to the average per-person breakdown of total revenue for particular revenue streams (e.g., ticket sales, merchandise, and food and beverage.). For example, if $100 of revenue is generated from 10 people, per cap spending is $10.

7. **Special Promotion:** Special promotions refer to a special collectible giveaway (i.e., player specific bobblehead), New Year’s Eve game night which includes a post-game party and two former players’ jersey retirement nights.

8. **Ticket Drop Count:** A term referring to the total number of patrons who walk through the arena door. Total drop count includes all scanned tickets, paid for or
complimentary, upon entry into the facility. This is the number by which arena sales are calculated.

9. Tickets Sold: This refers to the actual number of tickets purchased for a sporting event.

**Significance of Study**

By examining consumer spending on a game-by-game basis and breaking down spending into specific spending categories (i.e., ticket sales, merchandise per cap sales, and food and beverage per cap sales,), practical insight into actual consumer spending can be gained and provide tangible knowledge for sport organizations. If a sport organization can understand consumer spending and potentially forecast future spending behavior patterns, game day revenue can be maximized using appropriate marketing efforts and pricing strategies. The results of my study will show whether or not spectator spending is affected by game outcome or other non-performance game-day factors, including the game’s month in season, game opponent, game day of week, game time, and special promotions, and the impact this has for the sport organization’s potential marketing campaigns, pricing strategies, and scheduling. Therefore, my study will examine the relationships among game day variables and consumer spending, and it will contribute to the theoretical development of the current sport management literature by supporting or contradicting previous research findings and theoretical frameworks (i.e., satisfaction theory and self-esteem theory).
Chapter II

LITERATURE REVIEW

Understanding the sport consumer is one of the major goals for all sport organizations, but it is also one of the most difficult goals to achieve because every consumer and product (i.e., the game) is different. Previous research (e.g., Trail, Anderson, & Fink, 2000; Trail, Anderson, & Fink, 2005; Trail, Fink, & Anderson, 2003; Wann, 2006; Branscombe & Wann, 1991) has shown that sport spectators’ consumer behavior can be a reaction to specific personal and environmental variables related to the individual and the sporting event. Similar to people going to a movie theater, sport spectators are part of an entertainment product; therefore, the decision to spend money is based on the total experience of the consumer. The goal of my research is to examine the consumer effects and relationships among game day variables that contribute to the spectator’s total fan experience and ticket sales, merchandise per cap sales, and food and beverage per cap sales for a professional sport organization. The following literature review will discuss related theories on satisfaction and self-esteem, previous research on the effect of winning and losing on consumption, effects of extraneous variables (i.e., star power, special promotions, and variable ticket pricing) on consumption behaviors, and consumer trends within the NHL to explain and understand consumer game day spending.

Satisfaction Theory

Customer satisfaction’s impact on consumer behavior is at the heart of all business practices. Customer satisfaction can be considered “a judgment that a product or service
feature, or the product or service itself, provided (or is providing) a *pleasurable* level of consumption-related fulfillment” (Oliver, 1997, p. 13) for the customer. However, each consumer’s perception of pleasure (i.e., satisfaction) is different. Sport spectators are similar in that pleasure at a sporting event varies from spectator to spectator (Arnett & Laverie, 2000). If a customer is not satisfied or pleased with an experience or product, he/she can choose not to re-purchase. Customer satisfaction contributes to repeat purchase behavior, which for sport organizations means generated revenue through repeat ticket, concession, and merchandise purchases (Van Leeuwen et al., 2002).

Moreover, customer satisfaction is based on a buyer’s total purchase experience including his or her personal attributes, the physical and environmental setting, as well as employees’ gestures and behaviors (Berry, Carbone, & Haeckel, 2002). An individual’s expectations and perceptions about a buying experience or product will dictate his/her level of satisfaction (Berry, Carbone, & Haeckel). If the buyer or end-user’s perceptions about the actual product’s experience exceed his/her initial expectations, then the consumer is satisfied. The key to a product’s continued success is the consumer’s post-purchase behavior, which occurs after his/her perceptions are compared to initial expectations.

Oliver’s (1997) depiction of satisfaction through the Disconfirmation of Expectations Model (DEM; see figures 1, 2, and 3 for the evolution of the DEM) incorporated the simple formula of comparing expectations and perceptions. In the model, customers enter into a product with a specific expectation about that product’s performance, and after they observe or experience the performance, they form perceptions about the product’s performance.
(Oliver). Post-performance perceptions are then compared to the customer’s original expectations about the performance or product. According to Oliver, the customer’s original expectations are either negatively disconfirmed, confirmed/zero, confirmed, or positively disconfirmed based on the perceived performance outcome. A customer is satisfied when his/her original expectations are either met (i.e., confirmation) or exceeded (i.e., positive disconfirmation) and dissatisfied when his/her original expectations are not met (i.e., negative disconfirmation: Oliver). For example, if a spectator enters into a game with the expectation that his/her team should win, and the team does in fact win, the customer’s expectations are confirmed, and he/she is satisfied with the game outcome. A sport spectator may also be satisfied if he/she goes into a game expecting the team to lose, but the team actually wins, his/her expectations are exceeded (i.e., positive disconfirmation). On the other hand, a spectator is dissatisfied when he/she expects the team to win and the team ends up losing (i.e., negative disconfirmation). Based on the DEM, initial expectations about game experience and expected outcome can have an effect on satisfaction, and ultimately, repeat purchase intentions and actual purchases.

Researchers (e.g., Lapidus & Schibrowsky, 1996; Madrigal, 1995; Van Leeuwen et al., 2002; Wakefield & Blodgett, 1994; Zhang, Smith, Pease, & Lam, 1998) have examined the relationship between satisfaction and future consumption behavior of sport spectators and have found that satisfaction is a key determinant of spending intentions and an organization’s financial success. The Sport Spectator Satisfaction Model (SSSM: Van Leeuwen et al.) expanded on the DEM by including and highlighting club identification and the win/loss
phenomenon as major influences on satisfaction. In the SSSM, both core (e.g., game outcome) and peripheral dimensions of a product (e.g., service, facility, and cleanliness) can directly and indirectly influence customer satisfaction (Van Leeuwen et al.). The relationship among club identification, winning and losing, and customer satisfaction is mediated by core/peripheral expectations, core/peripheral perceived performance, and core/peripheral disconfirmation. Unlike other models, a key component to this model is the win/lose phenomenon. Van Leeuwen et al. pointed out that the relationship between winning/losing and customer satisfaction is not empirically known.

Customer satisfaction is a critical component that can lead to consumer spending and product loyalty. The comparison of a consumer’s expectations about a product or experience and subsequent perceptions of the product experience can lead to specific affective reactions, which influence consumption behavior. The core product in sports (i.e., game outcome) plays a role in satisfaction, and customer satisfaction can lead to repurchase behaviors, but self-esteem theory can also help to explain consumer behavior.

**Self-esteem Theory**

Self-esteem theory has been used to explain human behavior across many disciplines. Alfred Adler, an early psychologist, claimed that people find ways to avoid blame and safeguard against low self-esteem (Ansbacher, 1971). Self-esteem can be defined simply as feelings for one-self, whether positive or negative (Brown & Dutton, 1995) or it can be viewed as one’s judgment of his or her self-worth (Crocker & Wolfe, 2001). In the business world, self-esteem is linked to consumer behavior. For example, low self-esteem is tied
directly to materialism, in that low self-esteem causes materialism and an increase in self-esteem leads to a decrease in materialism (Chaplin & John, 2007). In Chaplin and John’s study, individuals used consumerism as a coping mechanism for low self-esteem, such that self-esteem induced consumer behavior. In sum, the consumer-product relationship may be a result of an emotional attachment and reaction of the consumer to that specific product or experience (Mugge, Schifferstein, & Schoormans, 2010).

Emotional reactions to an experience were the cornerstone of Cialdini et al.’s (1976) introductory work on basking-in-reflected-glory (BIRGing), which is a consumer’s tendency to “share in the glory of a successful other with whom they are in some way associated” (p. 366). Conversely, cutting-off-reflected-failure (CORFing) occurs when an individual distances him/her-self from unsuccessful others to limit any negative association and to provide self-esteem protection (Snyder, Higgins, & Stucky, 1983). In sports, BIRGing and CORFing are self-esteem responses of an individual to an experience, and each serves as a way to boost or protect an individual’s ego or an individual’s association with a specific team. BIRGing and CORFing are two self-esteem responses that play a critical role in sport spectator behavior and consumption. In a study of university students, Cialdini et al. found that students chose to wear school specific apparel after football team victories to make their association public thereby enhancing their self-esteem. Snyder, Lassegard, and Ford (1986) found that participants who were in a “failure” group displayed less association with their group by not taking and wearing team specific badges or by choosing not to participate in a presentation with their group. In both instances, participants chose not to show their
affiliation with their assigned group that failed at the task at hand. In sum, BIRGing and CORFing provide self-esteem enhancement or protection for individuals associated with certain groups.

Specifically, in sports, spectators may BIRG or CORF based on game outcome. However, self-esteem responses (i.e., BIRG and CORF) rely heavily on one’s level of identification in sports. Identification is at the heart of explaining sport consumer behavior and consumption research by acting as the mediator between self-esteem responses and consumer behavior. Trail et al. (2000) defined identification as “an orientation of the self in regard to other objects, including a person or group that results in feels or sentiments of close attachment” (pp. 165-166). Sport organizations are encouraged to increase spectators’ levels of identification because spectators with higher levels of identification are more likely to BIRG and less likely to CORF (Kwon, Trail & Lee, 2008; Wann & Branscombe, 1990). These self-esteem responses (i.e., BIRG and CORF) can have an effect on consumer spending. For example, Mahony and Madrigal (2000) found that BIRGing behaviors exhibited by spectators led to increased merchandise consumption and attendance, and CORFing behavior had the opposite effect. Moreover, Harrolle, Trail, Rodriguez, and Jordan (2010) found self-esteem responses (i.e., BIRG and CORF) were positively related to purchase intentions. In sum, an individual’s level of identification has the potential to influence the degree of his or her self-esteem responses to game outcome, which in turn affects consumer spending.
The Effect of Winning and Losing on Consumption

Game outcome (i.e., a win or loss) may also influence spectators’ consumption behaviors. Success or failure of a team is arguably one of the primary determinants of attendance (Kwon, Trail, & Lee, 2008). Hansen & Gauthier (1989) found a positive relationship between spectator attendance and on-field success. Specifically, Jones (1984) pointed out that winning is a statistically significant determinant of attendance at hockey games. Trail et al. (2003) reiterated the overarching need to delve into the impact of game outcome on consumer game day spending based on the influence of game outcome on ticket sales.

Van Leeuwen et al. (2002) officially incorporated game outcome into their Sport Spectator Satisfaction Model (SSSM). Their results supported that a win or a loss influenced perceived performance and disconfirmation, which in turn affected customer satisfaction. The higher the spectator’s perceived performance, the more positive disconfirmation they felt toward the team (Van Leeuwen et al.). More importantly, game outcome can even have a direct effect on customer satisfaction through the immediate influence of a win or a loss on emotions (Wann, 1994). Expectancies about a game are either confirmed or disconfirmed with game outcome, which lead to emotional reactions and consumer (dis)satisfaction (Weiner, 1985). Consistent with Wann’s logic, Dietz-Uhler and Murrell’s (1999) longitudinal study of university football spectators found that spectators rated the team more favorably after a win than after a loss. Thus, the emotional reaction and perception of the game outcome may affect customer satisfaction and subsequent purchases.
Economic demand models have also been developed to empirically identify determinants (i.e., game outcome) related to spectator attendance (DeSchriver & Jensen, 2002). Using data collected from NCAA Division II football games, DeSchriver and Jensen found that on-field success (i.e., winning percentage) had a direct relationship to attendance. Results of their study indicated that the effect of winning percentage on attendance increased over the course of the season while the previous season’s winning percentage influence on attendance decreased as the season progressed. Winning percentage, whether from the previous or current year, had an effect on attendance.

Depending on the success or failure of a team, die-hard fans and fair weather fans also influence consumer spending (Branscombe & Wann, 1990). Die-hard fans will maintain an affiliation with their favorite team through consistent losses, and fair weather fans tend to only support a team when they are winning. Even though these types of fan relationships with their respective team are dependent upon level of identification with the team, die-hard and fair-weather fans provide an explanation for attendance fluctuations at sporting events (Branscombe & Wann). Fair weather fans help increase attendance numbers during a win streak, while they may also be to blame for attendance decreases during a losing streak. Therefore, a win or a loss affects some peoples’ intention to return to another game. If a team is consistently winning, fair weather fans will jump on the band-wagon and attend games, thus increasing game day revenue generated through merchandise and concession sales. However, game outcome is not the only variable that influences consumer purchase intentions.
**Extraneous Variables Affecting Attendance**

Other explanatory variables, such as star power, specific game day factors, and variable ticket pricing (VTP) have been examined to explain consumer spending. Sport organizations can capitalize on possible revenue benefits by having a star player on their team. DeSchriver (2007) found that the star power, or hype, of young soccer player Freddy Adu was credited for generating an additional $3.25 million in revenue from ticket, concession, and merchandise sales during the 2004 Major League Soccer (MLS) season. The same can be said for David Beckham whose signing with the MLS’ LA Galaxy increased attendance and viewership of MLS soccer, and he even drew the 2007 season’s largest MLS crowd (Mickle, 2008). However, a player’s star power credential is not the only extraneous predictor variable for attendance and consumer spending.

Sport organizations also use special promotions in an effort to influence consumer spending. For example, the NBA has found their special promotion niche on Christmas Day. In 2009, all five high-profile NBA games taking place on Christmas Day were sold out at an increased ticket price (Ourand, 2009). The NHL has tapped into special game day promotions with their annual outdoor Winter Classic game aired nationally on New Year’s Day (Pursell, 2008). The first Winter Classic hosted in Buffalo in 2007 sold out at capacity (74,000) in half an hour (“Winter Classic”, 2007). Sport organizations are able to make a game desirable by creating a unique, high-demand game environment.

Other special promotions used to increase game traffic, and ultimately revenue, include unique giveaways. The goal of a promotional game-day giveaway is to provide high-
perceived-value branded items that fans cannot obtain elsewhere. These promotions can have a dramatic positive effect at the gate. One cross-league promotion is the use of a series of player specific bobbleheads, which some organizations view “as a needed element to help build attendance and enhance the game experience” (Cooper, p. 15, 2009). Cooper pointed out that the Seattle Mariners produced a Ken Griffey, Jr. bobblehead that attracted 17,000 attendees to a game. However, bobbleheads are not the only unique giveaway. For example, the Kansas City Royals had two unique replica jerseys designed, and patrons came to a game for the chance to win the jerseys. The result was two sellout games when the team had only eight sellouts to their name that year (Cooper, 2009). As a result, more attendees than usual are purchasing tickets and also buying food, paying parking fees, and purchasing team apparel. Promotional giveaways contribute to the overall game experience, and if a fan or spectator has a satisfying experience, he/she is more likely to come back.

DeSchriver (2007) examined the overall influence of varying levels of promotional activity, game day of week, opponent team’s caliber, weather, home team performance, and previous season visiting team performance. In this particular study, only special promotional activities (i.e., July 4th fireworks and a double header) had a statistically significant impact on attendance. Other general promotions, day of week, number of visiting team all-stars, and weather were positively related to attendance, but the relationships were not statistically significant in influencing attendance. However, in Hansen and Gauthier’s (1989) study on factors affecting attendance, significant differences were found between leagues (e.g., NFL and baseball) on attendance items including scheduling of games in terms of weekends, time
of day, and quarters in the season. Other factors, like the quality of the home team performance during any part of the season failed to have a statistically significant relationship with attendance, but there was a small, positive relationship (DeSchriver).

Lastly, a visiting team’s past season success had a positive, significant effect on attendance during the first third of the season, but that effect diminished over time. In sum, game day factors are potential influences of attendance and consumer spending (DeSchriver).

VTP is a new strategy being instituted by professional sport leagues in an effort to control or combat fluctuating game attendance (Rascher et al., 2007). Through VTP, sport organizations treat each game as a different product by pricing individual game tickets based on the game day of the week, quality of the opponent, month of the year, and special events (e.g., holidays). This ticket pricing strategy is based on predicted supply and demand, and it may influence a patron’s decision to attend a game. For the organization, it is a short-term revenue maximization technique that attracts more attendees who will likely spend money on concessions, parking, and merchandise at the sporting event. Rascher et al. found that Major League Baseball (MLB) could have increased ticket revenues by 2.8%, or $16.5 million, and total stadium revenues by $25.5 million for the 1996 season if they had instituted VTP. More recently, the St. Louis Cardinals have taken full advantage of VTP by signing a contract with the software firm and dynamic pricing specialist Qcue to maximize ticket sales (Muret, 2011). The sophisticated software analyzes real-time sales data and other external factors to generate sales and revenue forecasts based on various price recommendations. Once approved, price changes are automatically pushed to ticketing systems which process the
changes at the point of sale and across all channels. Qcue can help the Cardinals and other sports teams, venues, promoters, and ticketing organizations set better up-front prices, and adjust to shifting demand, changes in market conditions and real-time sales data (Muret). Non-performance game factors, like ticket price, can influence attendance and, ultimately, revenue for the organization.

In summary, game outcome and non-performance game factors influence consumer spending behaviors. A win or loss can potentially have a direct influence on future consumer behavior, but it appears that this impact can be mediated by team identification and customer satisfaction. However, game outcome is not the only potential variable affecting consumer spending. Star power, promotions, and VTP are extraneous variables that influence consumer spending. Each of these antecedent components has an impact on sport spectator consumer behavior, and the NHL is one of many leagues whose franchises are impacted by game outcome and non-performance game day factors.

**Current State of the NHL**

This section provides specific background information as to the current state of the NHL and the teams within the league. The NHL is comprised of 30 teams across North America, six teams in Canada and 24 teams in the continental United States. The NHL is one of many professional sport leagues (e.g., NFL, NBA, MLB, and MLS) that are competing for spectator and corporate consumers’ dollars. During the 2002-2003 season, the entire league lost nearly $273 million, roughly $9 million per team (Levitt, 2004). However, since the league lock-out during 2004-2005, revenue has steadily increased over the past five
years. For the 2010-2011 season, the league is projecting to generate a record of over $2.7 billion in league wide revenue (Mickle, 2010).

Attendance and ticket sales revenue is the driving force behind franchise and league revenue in the NHL (Leadley & Zygmont, 2006). Fortunately, the NHL set record attendance in 2008-2009 for the fourth consecutive season (Mickle, 2009). Compared to the 2007-2008 season, attendance (i.e., ticket drop count) increased 1.1% resulting in 21.4 million total attendees for the 2008-2009 season. Paid attendance (i.e., tickets sold) also increased from the 2007-2008 season to the 2008-2009 season by 1% (Mickle). Even though some NHL franchises struggled with attendance, others flourished allowing the league to report an increase in overall attendance.

In 2009 approximately half of the NHL’s 30 teams were profitable during the 2008-2009 season (“Game 3 victory, 2009”). For most teams, especially the smaller market teams, the season financial success is dependent upon post season playoffs. For example, during the 2009 Stanley Cup playoffs, the NHL’s Carolina Hurricanes franchise was guaranteed to break-even during the 2008-2009 season. The Carolina Hurricanes’ 2008-2009 profit was heavily credited to ticket sales and the additional gate revenue generated from the Stanley Cup Playoffs (“Game 3 victory”). However, ticket sales are never an annual guarantee in sports, and they compete with the comfort and convenience of watching a game at home (King, 2010).

Financial discrepancies exist among individual teams with respect to paid attendance and overall revenue. For example, the Boston Bruins, Washington Capitals, and Chicago
Blackhawks thrived financially in their respective markets during the 2008-2009 season, while teams such as the Phoenix Coyotes, New York Islanders, and Atlanta Thrashers struggled with attendance (Mickle, 2009). It is important for sport marketers, researchers, and sport governing bodies to find out why one team is successful when another struggles in its respective market. For example, the once struggling NHL Chicago Blackhawks now have one of the highest average attendances per game (21,752), while another team in a similarly saturated sports market, the New York Islanders, averaged only 13,733 patrons per game during the 2008-2009 season. Analyzing game day variables and their influence on consumer spending would provide insight into differences in team game day revenue.

In summary, the literature review highlights the related theories on satisfaction and self-esteem (BIRGing and CORFing), previous research on the influence of winning and losing on consumption behaviors, influence of extraneous variables (i.e., star power, game day factors and promotions, and VTP) on consumption behaviors, and the current state of the NHL. Previous researchers have shown that satisfaction and self-esteem responses (i.e., BIRGing and CORFing) play a role in consumer behavior. Although, other researchers (e.g., Trail et al., 2003) suggested that game outcome may be one of the primary determinants of future consumer spending, and other extraneous variables, including star power, promotions, and VTP also impact consumer spending. However, no one has yet to test if consumer spending (i.e., ticket sales, food and beverage sales, and merchandise sales) is affected by the outcome (i.e., win or loss) of the game, game opponent, game time, month in season, or game day of week using actual revenue data from a professional hockey team. Therefore, the
goal of my study is to examine the effects of game day variables on ticket sales, merchandise per cap sales, and food and beverage per cap sales for a professional sport organization.
Chapter III

METHODS

Data Collection

After Institutional Review Board exemption and approval from the NHL professional team, data on game opponent, game outcome, month in season, day of week, game time, and special promotions were collected from the NHL professional team’s official website and from official team documents (i.e., game day event revenue summaries). The data on tickets sold, per cap merchandise sales, and per cap food and beverage sales were collected from event revenue summary spreadsheets provided by the NHL professional team. The researcher manually entered the data from the website and from event revenue summaries into an excel document. To ensure that the data entered was reliable and error free, an independent researcher checked and verified the numbers on the revenue summary sheets and the data on the Excel sheet.

The data were labeled and categorized. In order to determine any effects of opponent, teams were classified (1) division opponent, (2) conference opponent not in the team’s division, and (3) non-conference opponent. That is, the professional NHL team faced divisional opponents 55 times at home-ice over the course of the three regular seasons compared to conference teams 49 times and non-conference teams 19 times. Game outcome was deemed either a (1) win or (2) loss. Month in season started with (1) October coded as the beginning of the regular season and (7) April coded the final month of the regular season. Similarly, game days of the week were numbered 1 (Monday) through 7 (Sunday). To test
the differences and correlations with time of game, games times were labeled 0 (noon) through 8.5 (8:30 PM). Games were categorized as either having a (1) special promotion or (0) no special promotion was instituted. Data from the aforementioned six game day factors were collected across three regular seasons for the NHL professional team.

Sample

The sample consisted of home hockey games from the 2006-2007, 2007-2008, and 2008-2009 NHL seasons for a professional NHL team. The NHL season runs from early October through mid-April. During both the 2006-2007 and 2007-2008 seasons, the team played 41 regular season games during each season for a two-year total of 82 home games. The 2008-2009 season included 41 regular season home games followed by eight post season Stanley Cup playoff games for a yearly total 49 home ice games.

In order to develop more robust models, three seasons worth of data were combined into one data set. Games 1-41 are from the 2006-2007 season, and games 42-82 are from the 2007-2008 regular season. The 2008-2009 regular season is represented through games 83-123, and the 2009 Stanley Cup post-season playoff games are represented with games 124-131. Of the 131 games in the data set, eight of the games (i.e., 124-131) were deemed outliers because of their extreme influence on the data and post-season Stanley Cup Playoff status. The eight playoff games were omitted from data analysis; therefore, the total sample size included 123 regular season home games as part of the final data analysis.
Data Analysis

The Statistical Package for the Social Sciences, version 16.0 for Windows, was used to conduct preliminary analysis including descriptive statistics (i.e., means, variance, standard deviation, and frequency of the data) and correlations among the variables to test for multicollinearity among the variables. Additionally, skewness was examined in the data analysis to verify the normal distribution of the data. A Multivariate Analysis of Variance (MANOVA) was conducted to test for differences based on different outcomes for each game (i.e., wins and losses) with respect to food and beverage per cap sales and merchandise per cap sales. Using separate multiple linear stepwise regression models, the independent variables including game outcome, the game’s month in season, opponent, day of week, game time, and special promotion were regressed on each of the dependent variables (i.e., ticket sales, merchandise per cap sales, and food and beverage per cap sales; see Figures 7, 8, and 9). Based on the statistical significance of each predictor variable (e.g., time of game or special promotion) in the regression, the automated models determine which variables have the most influence on the dependent variable (e.g., food and beverage per cap sales).
Chapter IV

RESULTS

Descriptive Statistics

The NHL team had a three-year home record \((N = 123)\) of 71-43-9 (i.e., wins, losses, and overtime losses). Of the 123 home games included in the data set, 10.6\% \((n = 13)\) of the games included a special promotion (i.e., bobblehead giveaway, jersey retirement, or New Year’s Eve party).

Of the 123 games, 60.9\% \((n = 75)\) fell on a Thursday \((n = 26)\), Friday \((n = 25)\), or Saturday \((n = 24)\). The team had 14.6\% \((n = 18)\) of their games on Tuesday. Wednesday \((n = 15; 12.2\%)\), Sunday \((n = 9; 7.3\%)\), and Monday \((n = 6; 4.9\%)\) were the least scheduled game days. Regarding game time, 77.86\% \((n = 102)\) of games were scheduled for 7:00 PM. The remaining 21 games were spread across 3:00 PM \((n = 6)\), 5:00 PM \((n = 3)\), 7:30 PM \((n = 4)\), 8:00 PM \((n = 4)\) and 8:30pm \((n = 4)\).

During the three seasons examined, the NHL team faced its divisional opponents a total 44.7\% \((n = 55)\) of the time. Exclusive of divisional teams, other conference foes were faced 39.8\% \((n = 49)\) of the time during regular season play. Only 15.4\% \((n = 19)\) of the games were against teams outside the team’s conference.

The average tickets sold for any given game during the three seasons was 14,084 tickets and ranged between 8,651 and 17,373 patrons. Merchandise per cap sales \((M = $2.46; SD = $0.70)\) ranged from $1.27 to $4.93 per patron. Food and Beverage per cap sales were
higher than merchandise bringing in between $9.46 and $14.15 (M = $11.84, SD = $0.97) per person per game.

Correlations among the independent variables (i.e., game outcome, month in season, game opponent, day of week, game time, and special promotions) and the dependent variables (e.g., ticket sales, merchandise per cap sales, and food and beverage per cap sales) ranged from -.52 to .40 (see Table 3) and showed no multicollinearity. The distributions of the variables were acceptable, and skewness values ranged from -2.9 to 2.6.

**Multivariate Analysis of Variance**

A Multivariate Analysis of Variance (MANOVA) was used to examine any influence of game outcome (i.e., independent variable) on merchandise per cap sales and food and beverage per cap sales (i.e., dependent variables). No significant differences were found between game outcomes for either of the dependent variables (merchandise per cap sales and food and beverage sales) tested \[ F (3,127) = .36, p = .78 \].

**Regression Analysis**

Multiple stepwise regression analysis was conducted to examine the influence of game outcome, month in season, game opponent, day of week, game time, and special promotions (independent variables) on ticket sales (dependent variable). The first step of each regression model highlights the variable with the most influence on the independent variable. Based on statistical significance, the automated models determined which predictor variables influenced consumer spending (e.g., merchandise per cap sales) and were entered into the model accordingly.
Day of week, time of game, and special promotion explained 32% of the variance in ticket sales \( R^2 = .32, F (3, 122) = 18.78, p < .001 \). Of the predictor variables, day of week \( (\beta = .55) \) had the most influence on ticket sales followed by time of game \( (\beta = .33) \), and special promotions \( (\beta = .28) \). The variance explained and betas in each step of the regression models are presented in Table 4.

Predicted tickets sold = 5124.88 (constant) + 779.79 (day of week) + 774.12 (time of game) + 2155 (special promotion)

Predictor variables were also regressed on merchandise per cap sales. In this model, 32% of the variance in merchandise per cap sales was explained by month in season and day of week \( R^2 = .32, F (2, 122) = 28.79, p < .001 \). Of these two predictors, month in season \( (\beta = .19) \) had a stronger influence on merchandise per cap sales compared to day of week \( (\beta = .13) \). The variance explained and betas in each step of the regression models are presented in Table 5.

Merchandise per cap sales = $2.48 (constant) – $0.18 (month in season) + $0.15 (day of week)

The predictors were also regressed on food and beverage per cap sales (dependent variable). Only day of week and time of game had an influence on food and beverage per cap sales. Both day of week and time of game explained 31% of the variance in food and beverage per cap sales \( R^2 = .31, F (2, 122) = 26.4, p < .001 \). In this regression model, the day of week \( (\beta = -.44) \) had a greater influence than time of game \( (\beta = .21) \). The variance explained and betas in each step of the regression models are presented in Table 6.
Food and beverage per cap sales = $13.13 (constant) – $0.26 (day of week) + $0.21 
(time of game)
Chapter V

DISCUSSION

The purpose of my study was to examine the effects of game day variables including game outcome, the game’s month in season, opponent, day of week, game time, and special promotion, on ticket sales, merchandise per cap sales, and food and beverage per cap sales, for a professional sport organization. The literature review highlighted satisfaction theory and self-esteem theory to help explain consumer behavior. A review of the effects of game outcome and extraneous game day variables on consumer spending explained how game day variables can influence consumption behaviors. Finally, an update of the financial state of the NHL provided a snapshot of the league benefits from consumer spending.

Effects of Game Outcome on Consumer Spending

Hypothesis I, stating that winning (i.e., positive game outcome) would have a statistically significant influence on merchandise per cap sales and food and beverage per cap sales, was not confirmed. Contrary to previous research (DeSchriver & Jensen, 2002; Hansen & Gauthier, 1989; Kwon, Trail, & Lee, 2008; Trail et al., 2003; Van Leeuwen et al., 2002) that suggested game outcome plays a significant role in consumer spending, results of this investigation suggest that sport consumers are not influenced to spend more money on merchandise or food and beverage (per cap) based on the immediate effect of a win or loss for a specific game. Therefore, it can be inferred that the emotional self-esteem responses and reactions (e.g., Cialdini et al., 1976) like BIRGing and CORFing may not be as overt when it
comes to merchandise sales and food and beverage sales in sport, at least in this specific sport market.

The supporting evidence that game outcome does not significantly influence consumer per cap spending on food and beverage or merchandise reflects Berry, Carbone, and Haeckel’s (2002) findings that customer satisfaction is about the total purchased experience. Even though a spectator may not be pleased with the outcome of the game, it is important to remember that people have different motives and reasons for attending a game (Trail et al., 2000). Some spectators may attend a sporting event because of the accompanying social experience, special promotion, family atmosphere, or escape from everyday work life. The fact that people consume sport for different reasons relates back to Oliver’s (1997) Disconfirmation of Expectations Model. Relative to sport, Oliver’s model suggests that a spectator goes to a game with a specific expectation, and either a customer is satisfied if the expectation is met or exceeded and dissatisfied if the original expectation is not met. In this investigation, game outcome did not impact consumer spending. Therefore, it can be inferred from Oliver’s model that a spectator’s original expectation about this NHL team’s game experience is not solely dependent on game outcome. Game outcome is only one facet of the original expectation, and other game day factors may have a greater influence on satisfaction and ultimately purchase intentions.

Van Leeuwen et al. (2002) linked satisfaction, game outcome, peripheral game factors, and future consumption behavior in the SSSM. Based on the SSSM applied to this investigation, it can be inferred that game outcome is not the only factor influencing
satisfaction and consumer game day spending for this NHL team. Van Leeuwen et al. found that both core (i.e., the game) and peripheral (e.g., service, facility, parking ease, cleanliness, etc.) dimensions of a product are both responsible for influencing customer satisfaction. Although satisfaction was not directly tested in this study, sport organizations should be encouraged that game outcome may not be the underlying satisfaction determinant.

The fact that game outcome does not have a significant influence on merchandise per cap sales and food and beverage per cap game day sales provides the opportunity for sport organizations to focus on the game experience variables that are predictable and controllable rather than dwell on the one factor (i.e., the game) about a sport event that is not controllable, predictable, or consistent. Instead, sport organizations can spend their time and resources in creating the best peripheral dimensions of a sporting event, like parking, quality of food, in-game production, cheerleaders, mascots, in-game entertainment, promotions, ticket cost, scheduling (game time and game day), and the like. For example, for a long time, the Chicago Cubs were fighting the “curse” that kept them from winning in the post-season. Even through the years when the team struggled to win on the field, the organization has created loyal Cubs fans that continue to support the team. Even if the Cubs are an exception, the findings from this investigation suggest that peripheral dimensions of the game experience may play a larger role in affecting satisfaction and potentially consumer spending.

Effects of Non-Performance Game Day Variables on Ticket Sales

Even though game outcome was found to have no significant influence on consumer’s game day spending, some of the non-performance game day factors did have
significant relationships with consumer spending. Hypothesis II stated that a) only special
promotions will have a statistically significant influence on ticket sales, b) special
promotions will have a statistically significant influence on merchandise per cap sales, and c)
of the non-performance game-day factors tested, only special promotions will have a
statistically significant influence on food and beverage per cap sales.

Hypothesis IIA was not confirmed due to the fact that in addition to the presence of a
special promotion, game day of week and time of game had a statistically significant
influence on ticket sales. Specifically, game day of week, time of game, and the presence of a
special promotion explained 32% of the variance in ticket sales. With Monday operationally
defined as the first day of the week, the multiple linear regression predictor model showed
that the closer to the weekend the game was scheduled the greater the tickets sold. For
example, on a Tuesday, an additional 1,560 tickets would sell (i.e., 779.79 times 2) or on a
Friday, 3,898 more people would purchase tickets. Time of game also strongly influenced the
number of tickets sold for a particular game. If a game started at 5:00 PM, this specific
professional sport organization could predict an additional 2,870 tickets sold. The
relationship between tickets sold suggests that the later in the day the game takes place, more
people will purchase tickets. Finally, the presence of a special promotion predicted to bring
in an additional 2,155 paying patrons. Based on all of factors in the predicted linear equation,
the sport organization can predict total tickets sold. For example, if the game is scheduled for
Thursday at 7:00 PM and a bobblehead promotion is scheduled, the organization can predict
around 15,817 tickets will be sold for that game for this NHL team. While it is not a
guarantee, it is a formula similar to the ticket pricing software Qcue that can help predict when promotions should be scheduled or if special ticket offers like VTP, reduced ticket prices, buy one get one free ticket vouchers, or giveaways should be instituted (Muret, 2011). Factors like ticket offers, ticket pricing, and promotions are all part of the peripheral factors that can influence customer satisfaction and in turn consumer spending.

The response of tickets sold from special promotions in the case of the investigated NHL team can be related back to both self-esteem theory and satisfaction theory. Self-esteem is defined as feelings or judgments for one’s self worth (Brown & Dutton, 1995; Crocker & Wolfe, 2001). Being part of a special promotion is not always readily available at a sport organization, and if a fan is able to find a way to be part of it, they share a closer connection to the team and to each other as fans and spectators. While it was not tested in this study, being part of a special promotion allows a fan to BIRG (Cialdini et al., 1976). Special promotions, like collecting bobbleheads or being part of franchise history during a retirement ceremony, help an individual to not only showcase his/her affiliation with the team through an exclusive opportunity, but also special promotions can increase a spectator’s association with the team. For every special promotional giveaway during the three seasons investigated for the NHL team, everyone who attended the game received a take-home free giveaway (e.g., bobblehead and mini jersey retirement banner) that he/she can keep and display publicly, which stands them apart from another fan or spectator who did not go to that specific game. Furthermore, special promotions are yet another peripheral dimension that adds to the overall customer experience and ultimately customer satisfaction (Van Leeuwen
et al., 2002). Some fans may come to the game solely for the special promotion, which means their satisfaction is highly based on receiving that promotion. For others, a free special promotion may provide more justification for someone to pay the ticket price. Regardless, special promotions can interact with spectators’ self-esteem responses and/or customer satisfaction perceptions and hopefully lead to repurchases.

Contrary to DeSchriver’s (2007) findings that no significant relationship was found between weekday/weekend baseball game and attendance, results of this study found that day of week was the greatest predictor variable for ticket sales. Beginning the week on Monday, the further along in the week the game was scheduled, the greater the impact the game day had on ticket sales. Game day can be considered a peripheral dimension of a sporting event. Van Leeuwan’s (2002) findings about the influence of peripheral factors on customer satisfaction suggests that people are more likely to be satisfied with the idea of going to a game on the weekend. In this particular study, weekend games dramatically increased the number of tickets sold. The convenience of a weekend games allows for people to not only avoid going out during the work week, but also weekend games provide people in the outer markets who have a longer travel time the opportunity to attend the game conveniently.

Knowledge about the impact of game day is important for scheduling strategies. If organizations know that a certain day of the week is not conducive to great ticket sales, they can react with another strategy by instituting VTP or ticket pricing software like Qcue (Rascher et al., 2007; Muret, 2011) or offering a special promotion that day to encourage people to attend that specific game. Findings also reiterate previous research (Cooper, 2009;
Pursell, 2008; “Winter Classic”, 2007) that found the effectiveness of special promotions. In this current investigation, special promotions included bobblehead giveaway nights, player retirement nights and New Year’s Eve games that include a post-game party in the ticket price. Special promotions provide the opportunity for spectators and fans to be part of a unique and exclusive sport organization opportunity and potentially BIRG.

Even though results of this study cannot be generalized to all professional teams because this was an investigation of one NHL team, practical implications for NHL and professional teams can be learned from this investigation. First and foremost, sport organizations could focus less on the game’s outcome to generate game day revenue. While it may help to have a winning record, sport organizations need to focus on what they can control to maximize the total experience for a fan or spectator. For the predicted linear equation for ticket sales, the game’s day of week, time of game, and the presence of a special promotion influenced consumer spending. Based on the results of this study, when sport organizations are scheduling games, they want to fight for weekend games, games that start at 7:00 PM or later, and use special promotions when appropriate. In this study, all of these factors are predicted to generate more ticket sales meaning people are more satisfied with the game’s day of week and time of game. Both game day of week and time of game are convenience factors for a fan, and the easier it is for a fan to get to a game, the more likely they are to come. Lastly, special promotions are a key peripheral component of the game for some people. The results indicated that special promotions can drive more fans to purchase game tickets. Therefore, when organizations plan to institute special promotions, they need to
make sure they are making the giveaway unique and desirable as well as planning it for a day that might not normally sell as many tickets. For example, game day of week and time of game are already influential factors, if a promotion is scheduled for the middle of the week, more fans are likely to come to that game to be part of the free promotion or giveaway. In sum, special promotions and the ensuing tickets sold can relate back to both self-esteem theory and satisfaction theory and my results have confirmed that time of game, day of week and special promotions influence ticket sales for this professional sport organization. Therefore, other sport organizations and teams should consult with statisticians to run regressions on their values to determine what game day factors affect their particular market.

**Effects of Non-Performance Game Day Variables on Merchandise per cap Sales**

Hypothesis IIB, which tested whether special promotions would have a statistically significant influence on merchandise per cap sales, was not confirmed because special promotions did not have a significant influence on merchandise per cap sales. In fact, it was found that month in season and day of week explained 32% of the variance in merchandise per cap sales. The correlation \( r = -0.44 \) between merchandise per cap sales and month in season showed that spectators were spending less on merchandise per cap the further along in the season, and the positive correlation \( r = 0.35 \) between merchandise per cap sales and day of week means that spectators are spending more on the weekends. Moreover, holding constant at $2.48, the linear regression equation predicted that merchandise per cap sales would decrease an additional $0.18 each month and continue to decrease throughout the season. For example, in the first month of the season, October, merchandise per cap sales
was predicted to be $2.30 compared to the last month (April) that predicted consumers to spend $1.22 per cap on merchandise.

The relationship between month in season and merchandise per cap sales can be related to self-esteem theory based on identification with the team. At the beginning of the season, perhaps spectators who are highly identified with a team are more likely to BIRG (Cialdini et al., 1976) and as a result, they want to display their team’s loyalty by purchasing team apparel. Conversely, spectators may be more likely to CORF at the end of the season due to the fact the season is about to be over. The “failure” in this sense is the end of the season or the team’s not making the playoffs. At the end of the season, spectators may be losing their identification with the hockey team. People may be less likely to purchase apparel as the season is winding down because the apparel and the identification with that team are becoming less relevant. Without hockey games, fewer opportunities are available to wear team apparel so people are less likely to purchase merchandise. Some apparel purchased by teams is also dated in that they are specific to that year. It is far less likely that fans will purchase a dated t-shirt that is not relevant once the season is over. On the other hand, generally a sense of excitement from fans usually coincides with the resurgence of the playing season. Whether there are new players or returning players, by the time the hockey season resumes, there is potential that spectators and fans have been without hockey for over five months depending on if the team makes the playoffs.

Certain NHL industry particulars can help explain why the relationship between merchandise per cap sales and month in season exists. For example, during the last third of
the season, most organizations are sending out season ticket renewal packages, which require monetary deposits. Or, if a team is in the fight to make the post-season playoffs, packages are mailed to ticket holders for playoff tickets. Similar to next season’s tickets, playoff tickets require deposits in case the team makes the cut. Both of these instances consume discretionary income that could be spent on merchandise. Implications for sport organizations are that teams should not push new merchandise at the end of the season. Rather, new merchandise should be pushed or promoted early in the season when people are not being pressured from large ticket deposits from the organization. Merchandise managers and directors should also institute progressive discounting of merchandise as the season progresses and especially as the end of the season approaches, which coincides with tax season and planning summer vacations.

On the other hand, day of week had a different predicted effect in that each day closer to the weekend (starting from Monday); merchandise per cap sales would increase by $0.15 each day. For example, holding constant at $2.48, the linear regression model predicted total per cap sales would be $3.38 on a Saturday game day for this NHL team compared to $2.63 on a Monday. Similar to Jacobe and Jones’ (2009) who found that consumers spend the most on Saturdays and Fridays and the least on Mondays and Tuesdays, my study confirmed that sport spectators for this NHL team purchased higher levels of merchandise on weekend days.

The relationship between day of week and merchandise per cap sales can be explained through satisfaction theory. Spectators may be more inclined or expect to spend money on the weekend. Traditionally, the weekend provides the most opportunity for people
to use discretionary income. A spectator has spent the entire week working and come the weekend, he or she may be ready to splurge and treat him- or herself or family to merchandise. This might be money they would have spent at another family weekend outing. For this specific NHL team, weekend ticket packages are created in order to reach out to the outer edges of the market. These packages only consist of a handful of games throughout the season. Along those same lines, the weekends may be more likely to see fresh faces, which mean this may be one of only a few opportunities for this specific niche of spectators to purchase merchandise. Referring back to Oliver (1997) and Van Leeuwen et al.’s (2002) explanations, purchasing apparel may be an expectation needed to fulfill the customer’s satisfaction at the game

**Effects of Non-Performance Game Day Variables on Food and Beverage per cap Sales**

Hypothesis IIC, predicting that only special promotions would have a statistically significant impact on food and beverage per cap sales, was not confirmed. Results indicated that day of week and time of game explained 31% of the variance in food and beverage per cap sales. The linear regression equation predicted that food and beverage per cap sales would decrease by $0.26 each day closer to the weekend and increase $0.21 each hour closer to the evening. Day of the week had a stronger influence than time of game with respect to consumer spending on food and beverage. Nonetheless, results indicate that the closer to the weekend the game is scheduled, food and beverage per cap sales goes down, and the closer to the evening the game is scheduled, food and beverage per cap spending increases.
The relationship between food and beverage per cap sales and time of game and day of week relate back to theories of satisfaction. Referencing the DEM (Oliver, 1997) and the SSSM (Van Leeuwen et al., 2002), people go into a sporting event with specific expectations. During the week when games are at 7:00 PM or later, fans and spectators may be expecting to eat dinner at the game due to time constraints and convenience. Eating dinner at the game is factored into their overall customer experience. Therefore, the fan expecting to eat dinner at the game is going to do so because it fits in with his/her expectations and overall satisfaction of the game experience. On the weekend, when games may be during odd times (e.g., 5:00 PM or 3:00 PM) or there is enough time to eat before a 7:00 PM game, fans and spectators do not factor a meal into their game experience expectations. As a result, spectators do not need to eat a meal to be satisfied with the game experience. Spectators may choose to eat a snack or purchase drinks, but they may not purchase the food they would normally purchase during the week. All in all, fluctuations of food and beverage per cap sales during the week can be attributed to customer satisfaction and fulfilling initial expectations about the event depending on the day of the week and time of game which influence food and beverage opportunities and preferences.

Because a majority of the games were scheduled for 7:00 PM or later, a logical explanation might be that weekdays do not provide people enough time to eat dinner beforehand. The assumption can be made that most people who can afford to attend a hockey game are working full-time jobs or have commitments throughout the day (e.g., carpool lines, taking kids to practices, working) that prevent them from arriving to the game much
earlier than game time at 7:00 PM with any spare time. When the game is at 7:00 PM or later, traditionally this is right on top of most peoples’ dinner times. At this time in the day, spectators have most likely not had a time to eat; they are more inclined to purchase an entrée meal at the game like hamburgers, chicken tenders, and pizza. Conversely, if the game is at 3:00 PM or 5:00 PM, people have already had lunch outside the arena and dinner is still a ways away; therefore, they may not want to purchase the high dollar meals. Instead, they may be more likely to purchase snacks like popcorn, ice cream, or a pretzel. As a result, food and beverage per cap sales would increase the later the game is played.

**Conclusions**

Whether for a sporting event or another product, one factor cannot explain why people choose to spend their money. Each spectator has a different psychological and social make-up, which creates different motives and reasons for making purchases. Environmental factors may also play a role in influencing consumer spending. For example, restaurants and retail stores play music to induce a better mood, which positively influences consumer spending. Spectators and fans are influenced by their own psychological and social reactions as well as potential environmental game-day factors. In this study, all of the hypotheses were not confirmed. However, some were not confirmed because more than one factor influenced consumer spending than originally expected. This is good news for sport organizations such that the game day variables that are somewhat controllable, like special promotions, game day of week, and month in season, which can allow the sport organization to cater marketing campaigns and ticketing strategies based on these factors. The linear regression equations
provided a guide for this specific organization to predict certain consumer purchases with respect to ticket sales, merchandise, and food and beverage sales.

The game day factor (i.e., game outcome) that sport managers do not have control over appeared not to be the determining factor of customer satisfaction and self-esteem responses. Marketing campaigns for sport organizations should focus on the factors that might influence attendance that can be strategically answered with catered marketing campaigns. For example, a game on a Tuesday is predicted not to bring in many tickets; therefore, this would be the game to institute a ticket discount or deal or provide a special promotion to help drive ticket sales. If people are driven to purchase a ticket, it is highly likely that they will purchase merchandise and/or food and beverage while at the game on top of most likely having to pay for parking. For example, in the case of this specific NHL team, the presence of a special promotion predicted to sell an additional 2155 tickets. Additional people coming to the game because of the special promotion will spend on average $2.52 on merchandise and $11.95 on food and beverage. Not counting the cost of the tickets, that is a total of $31,182.85 on merchandise and food and beverage revenue that would be missed out on without the presence of a special promotion. Therefore, it is important for sport organization to capitalize on the opportunities that drive revenue, and also understand their markets and what drives people to purchase tickets. This study provided empirical support that in addition to a spectator’s psychological and social needs, a spectator’s decision to spend money at a sporting event is also influenced by particular game day factors like time of game, special promotion, month in season, and day of week.
**Future Research**

This study was limited to one specific team, so these findings cannot be generalized to other professional teams or leagues. Future research should compare across different sport organizations to determine if consumer spending behaviors are similar across similar league teams. Taking another step, future research should also compare regression values cross leagues to determine if the same game day factors equally affect consumer spending in different leagues. Even though, this study examined merchandise and food and beverage consumption, only a general total per cap spending was analyzed. Future research should look at more detailed itemized accounts of what merchandise and food and beverage is consumed based on certain game day variables. For example, are spectators purchasing more alcohol when the game is at 7:00 PM compared to noon, which would naturally increase per cap food and beverage merchandise per cap sales? Or, maybe spectators are more inclined to purchase specific apparel and merchandise based on individual game day variables. Tracking specific spending and determining when people purchase food and beverage or merchandise could dictate when food specials or merchandise sales should be instituted. Future research could also look at the specific timing of merchandise and food and beverage sales compared at different points during a game and consider the score of a game. Are people spending more money because the team is winning 5-0 at the end of a period or half? Or, are they spending less money because the team is losing? Lastly, future research could potentially examine the influence of televised games and consumer game day spending. If a game is regionally or nationally televised, perhaps more spectators are inclined to watch it from home.
rather than travel to the arena and pay admissions. Conversely, televised games could increase consumer spending because there are more breaks in the action with required television time outs. Based on this study, opportunities for future research would provide more insight into consumer game day spending behaviors for sport organizations.
REFERENCES


Mickle, T. (2010, June 28). NHL expects total revenue to top $2.7B. *Street and Smith’s Sports Business Journal.*


TABLES AND FIGURES

Table 1

*Frequency Table for Independent Variables*

<table>
<thead>
<tr>
<th></th>
<th>Number of Games</th>
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<td><strong>Game Outcome</strong></td>
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<td>Win</td>
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<td>January</td>
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<td>February</td>
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<td>March</td>
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<td>Tuesday</td>
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<td>Saturday</td>
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Table 2


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<th>Minimum</th>
<th>Maximum</th>
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<td>$0.70</td>
<td>$1.27</td>
<td>$4.93</td>
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<tr>
<td>Food &amp; Beverage per</td>
<td>$11.84</td>
<td>$0.97</td>
<td>$9.46</td>
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<td>cap Sales</td>
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Table 3

*Correlation is significant at p < .05
**Correlation is significant at p < .01
Table 4

*Summary of Multiple Stepwise Regression Analysis for Variables Predicting Ticket Sales*

<table>
<thead>
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<th>Step</th>
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<th>SE B</th>
<th>β</th>
<th>R²</th>
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<td></td>
<td>Time of game</td>
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<td>200.99</td>
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<td>.24</td>
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<td>3</td>
<td>Day of week</td>
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<td></td>
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<td></td>
<td>Special promotion</td>
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Table 5

*Summary of Multiple Stepwise Regression Analysis for Variables Predicting Merchandise per cap Sales*

<table>
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<th>$SE\ B$</th>
<th>$\beta$</th>
<th>$R^2$</th>
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<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Month in season</td>
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<td>0.03</td>
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<td><strong>Step 2</strong></td>
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*Summary of Multiple Stepwise Regression Analysis for Variables Predicting Food and Beverage per cap Sales*

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<td>Time of game</td>
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Figure 1. Original disconfirmation of expectations model (DEM)
Figure 2. Expanded DEM
Figure 3. Extended DEM, incorporating club identification and the win/lose phenomenon
Figure 4. Sport Spectator Satisfaction Model
Figure 5. Model of Sport Spectator Conative Loyalty
Figure 6. Extended Model of Sport Spectator Conative Loyalty incorporating the implied purchase component
Figure 7. Hypothesized Model of Ticket Sales Influence
Figure 8. Hypothesized Model of Merchandise per capita Consumer Spending
Figure 9. Hypothesized Model of Food and Beverage per capita Consumer Spending