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The uniqueness of sport: Testing against marketing's empirical laws

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ABSTRACT

Two key law-like patterns – the *double jeopardy* and *duplication of purchase* laws – have consistently been found to explain and predict consumer behavior across a wide range of industries. There has been speculation that these empirical generalisations may not hold in the case of professional team sport brands. The reasons given include the passionate loyalty of sport fans, the fact that two sport teams must be consumed at once in any contest, and the strong geographic dominance of sport brands. In this study, we examine the applicability of these two law-like generalisations to professional team sport. With a few caveats, these law-like patterns hold, suggesting that sport team brands operate in line with what is known about other consumer markets. Results suggest the unique aspects of the sport market do not meaningfully impact consumer behavior and therefore sport brands should be managed in fundamentally the same way as most consumer markets.

1. Introduction

Robinson (2008) succinctly noted that sport has moved from being "a pastime, organized and run by amateurs" to "a business that competes for scarce consumer resources, requiring a 'business' approach to its management, utilizing professional management techniques" (p. 308). Modern professional sport teams, in many ways, exemplify what most businesses strive for: global reach, high brand recognition, loyal fans, and sustained profitability. By 2018, the North American sport market is projected to grow to $70.7 billion (PwC, 2014), while globally the sport market was projected to exceed $145 billion in 2015 (PwC, 2011). Brands such as Manchester United, the New England Patriots, and the New York Yankees have fan bases in the millions, and are valued amongst the most powerful brands in the world.

Despite increasingly business-like management of sport organizations, questions remain around the extent to which management of this sector requires specialized treatment at either the academic or practitioner levels. The question of whether sport, as a distinctive field, is worth exceptional investigation comes back to the often-made claim in both practitioner and academic circles that a number of unique attributes of the sport product mean sport requires distinct management practices (e.g., Hoye, Nicholson, & Smith, 2008; Tapp & Clowes, 2002). Widely used introductory sport management (e.g., Pedersen & Thibault, 2014) and sport marketing (e.g., Mullin, Hardy, & Sutton, 2014) textbooks commonly

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include a section or chapter on the uniqueness of sport ("unique aspects of sport management" and "the uniqueness of sport marketing" in Pedersen & Thibault and Mullin et al., respectively). Smith and Stewart (2010) attempted to summarize these unique aspects, identifying (a) provision of an intense emotional experience, (b) the high degree of social interaction between customers of the same brand, (c) the uncertainty of outcome of sport contests, and (d) the high degree of loyalty and engagement of sport consumers, as key differences. Smith and Stewart noted, however, that these unique elements are often over-stated, and can be found in other products and markets.

Researchers examining sport consumer behavior frequently note the intense and persistent loyalty of sport fans. Parker and Stuart (1997) asserted that football is totally different from other product sectors, likening the category to religion. Yet, other researchers have highlighted the heterogeneous nature of sport consumers. Hunt, Bristol, and Bashaw (1999) conceptually developed a typology segmenting sport fans into five categories with substantial variation in magnitude of attachment to their team. Similarly, Stewart, Smith, and Nicholson (2003) noted the bewildering diversity among and between sport consumers in terms of loyalty, attitudes, and behaviors. Tapp and Clowes (2002) found some fans define loyalty attitudinally, seeing themselves as loyal supporters despite promiscuous consumption behavior, who regularly attend matches featuring a variety of teams. Overall, while much sport management research centers around the uniqueness of sport there is considerable evidence of diverse sport consumer behavior, which may mirror that found in non-sport contexts.

Looking specifically at how marketing generalisations might apply to sport, McDonald (2010) noted the low level of customers switching between competing brands (teams). Considering the context of professional team sport in particular, there are two further factors that could represent additional distinguishing features. These are the simultaneous consumption of two teams when attending or viewing team sport events and the geographic divisions of teams in most national leagues. Geographic divisions build team identity through connection with locations and communities important to the fan (Heere & James, 2007). What is unclear is how multiple teams from the same region, especially those that compete against each other, might impact on fan behavior like viewing and attendance. While unusual in sport, this situation is common in other industries, with one example being beer markets where many local beers compete (e.g., Milwaukee). The simultaneous consumption of sport teams or players is something quite unique to sport. Although recognized as a key feature, the impact of consuming two brands at once (one favored, one possibly disliked strongly) on consumer behavior has not been examined in detail. Related studies, such as that of Bee and Madrigal (2012), have found that less engaged fans prefer closer contests between opponents.

One way to examine whether these unique aspects of sport impact upon the way it should be managed is to test how well the patterns typically seen in consumer markets operate in a similar way in sport markets. Two key law-like patterns – the *double jeopardy law* and the *duplication of purchase law* – have consistently been found to explain and predict consumer behavior across a wide range of industries. Previous researchers have speculated that these empirical generalisations may not hold in the case of professional team sport brands (Gladden & Funk, 2001). At the same time, other researchers have suggested sport team supporters exhibit behavioral and attitudinal loyalty patterns similar to those observed in non-sport contexts, such as supermarket goods (e.g., Tapp, 2004). This paper reports on two studies undertaken to directly test the applicability of these marketing generalisations to the sport context. The first study looks at actual attendance behavior as a primary form of sport consumption, while the second looks at favored brands (teams) and whether the common practice of having a second team follows the established laws.

The current research represents the first to explore sport brand double jeopardy effects on consumer purchase behavior. As such, the findings provide a novel perspective on how sport operates and similarities between sport management and mainstream business approaches. Recent work identified that double jeopardy effects were present in the attitudinal loyalty of fans across sports of varying popularity (Ewing, Wagstaff, & Powell, 2013). This has led to calls for additional research on behavioral outcomes, the role of rivalries and geography (Doyle, Filo, McDonald, & Funk, 2013), and further investigation of how sport consumers allocate consumption across competing teams. Examination of double jeopardy effects in sport consumer behavior offers evidence that sport management shares common patterns established through empirical generalisations found in non-sport contexts.

1.1. Empirical generalisations in marketing

Although they are not well known, and many believe consumer behavior to be impossible to predict, there are a number of empirical generalisations that have been identified in the marketing field. For example, a substantial amount of panel data, analyzed longitudinally and across multiple product categories, has shown that consumers are rarely 100% loyal to one brand. Instead, they purchase across repertoires of similar brands to satisfy their category requirements (Ehrenberg, Uncles, & Goodhardt, 2004). Just as sport consumers represent many diverse types, from casual viewers to diehard fans (Hunt et al., 1999), non-sport consumers range from light to heavy buyers (Uncles, Ehrenberg, & Hammond, 1995). While it is generally assumed that sport has a higher proportion of consumer fanatics than other products, many products have devotees (e.g., Starbucks, Hello Kitty, Harry Potter, Apple computers). The combined effects of purchases made by consumers along the full spectrum from casual or one-time buyers through brand devotees create recognizable and predictable patterns. Specifically, McPhee's (1963) double jeopardy pattern suggests that smaller market-share brands receive not only fewer customers, but also slightly lower levels of loyalty from their customers than larger brands (Ehrenberg, Goodhardt, & Barwise, 1990). Thus, small market-share brands suffer in two ways: (1) fewer customers and (2) lower loyalty amongst those customers they have.

While researchers have identified double jeopardy patterns in a wide range of products, including packaged goods (Wilbur & Farris, 2014), durable goods (Colombo & Morrison, 1989), B2B (Uncles & Ehrenberg, 1990), store patronage (Uncles & Kwok, 2009), arts and culture (Hand, 2011), and television viewership (Sharp, Beal, & Collins, 2009), fast-moving consumer goods (e.g., instant coffee, toothpaste, laundry detergent) remain the most-studied context. The empirical patterns in purchase data consistently exhibit a number of characteristics related to market share, purchase frequency, loyalty measures, and brand switching. Specifically, as market penetration decreases between brands, so does purchase frequency and 100% loyalty rates (Ehrenberg et al., 2004). Smaller brands having both fewer customers and customers who buy the brand less frequently is the source of the double jeopardy sobriquet. This stream of research has identified a statistical model, the Dirichlet, as a useful tool for predicting these regular patterns based on parameters capturing the market penetration and purchase frequency for the product category and at least one brand (Ehrenberg et al., 2004). One implication of the ubiquity of double jeopardy patterns is that brand penetration rates and purchase frequencies are inextricably tied and cannot vary freely (Ehrenberg & Goodhardt, 2002).

The duplication of purchase law flows from double jeopardy in that single brands have been found to share customers in line with other brands' market share (Ehrenberg et al., 2004). Some variations have been found to this law, with what has been called partitioning existing in some markets (Romaniuk & Dawes, 2005). Partitioning occurs when major functional differences or similarities between brands exist (Sharp & Sharp, 1997), which has the effect of creating sub-repertoires of brands within a larger market. For example, a customer preferring free trade products may select more heavily amongst free trade brands than the duplication of purchase law (based solely on market share) would suggest (Winchester, Nencyz-Thiel, Arding, & Less, 2011).

Given the applicability of these laws to a wide range of industries, questioning whether they apply to team sport brands may seem redundant. In a study of television viewing habits in the United States, Barwise and Ehrenberg (1988) found notable deviations from predicted patterns for Spanish-language and religious-themed programming. Despite relatively low viewership numbers, these two types of programming still generate relatively heavy consumption. As such, while rare, variation from the double jeopardy and duplication of purchase laws has been observed. Sport brands arguably may experience heavy partitioning due to traditional rivalries, geographic separation, or underdog preferences. The influence of such distinct features can be assessed by examining the degree to which well-established generalisations fit sport consumer behavior. Widely supported marketing generalisations broadly found in non-sport contexts should be expected to hold in sport as well. These considerations lead to the following hypotheses:

H1. *Professional sport team brands exhibit consumer behavior patterns in line with market share as predicted by the double jeopardy law.*

H2. *Professional sport team brands share customers in line with other brands market share, conforming to the duplication of purchase law.*

Simultaneous allegiance to multiple sport teams is common, if under-researched (McDonald, Karg, & Lock, 2010). When the teams are in different sports or different leagues, such multiple affiliations only rarely lead to direct competition and concomitant threat to loyalty. McDonald et al. (2010) found that allegiances with soccer teams in Europe acted as important antecedents activating support of new soccer teams in Australia. Following the introduction of a new professional soccer league, fans adopted new teams in addition to an existing repertoire of European soccer clubs. The preferential order of these teams was not captured, but McDonald et al. alluded to the reality that sport fans may associate with multiple teams within the same sport. As such, understanding of second-team preference within the same competitive league represents an important aspect of consumer decision making in sport, which is widely ignored. The current research builds on the work by McDonald and colleagues, and examines how sport consumers share attendance and allegiance across multiple teams within a single league.

In his work on double jeopardy, Ehrenberg (1995) found that a brand's market share correlated with its customers' level of behavioral loyalty, a principle previously applied to understanding sport consumer attitudes (Doyle, Filo, McDonald, & Funk, 2013). Double jeopardy has been extended to predict second-purchase options. The duplication of purchase law states that the distribution of duplicate purchases between brands (i.e., buying a second brand in the same sector) mirrors the primary market share of brands in that sector (Ehrenberg, 1996). This follows the principle that differences in market share are explained primarily by penetration (Sharp, Wright, & Goodhardt, 2002). Applying this principle, sport teams with a greater share of the primary market will also attract a higher proportion of second-team supporters.

H3. *Second-team preferences will be positively related to the market penetration of teams.*

H4. *Sharing second-team preferences will occur in line with frequency of first-team preference, regardless of sport rivalries.*

Uncles et al. (1995) found that highly loyal consumers are less likely to purchase duplicate brands in the same sector. Sport teams are known for exceptionally high levels of consumer loyalty and follower allegiance (Bristow & Sebastian, 2001; Funk & James, 2001, 2006). Thus, teams with relatively high first-team support should have a greater proportion of supporters who demonstrate preference for only one team.

H5. *Market penetration of the first-team preference will be negatively related to the likelihood of having a second-team preference.*

The application of double jeopardy and duplication of purchase law to sport consumption is potentially dissimilar to Fast Moving Consumer Goods (FMCG) markets in important ways. First, evidence suggests sport teams can be representative of broader geographic regions, which has specific connotations for the influence of regional identity and sharing of customers. Second, the strength of rivalry between sport teams is well documented anecdotally and empirically (Ewing et al., 2013; Kilduff, Elfenbein, & Staw, 2010). Therefore, a fan of a sport team will experience more fervent emotions in relation to selecting a rival team as a second preference, than one would when faced with (for example) a decision in relation to a second toothpaste brand. To the extent that these hypotheses are found to hold, sport operates similarly to non-sport contexts. Contrarily, to the extent that these hypotheses are not supported, evidence would indicate that sport may be fundamentally different from non-sport products. The purpose of the current research is to provide evidence toward resolving the dispute between these two perspectives.

2. Research context

Typically, double jeopardy and duplication of purchase patterns have been examined with FMCGs, but more recently the analysis has spread to include services and other contexts. The analysis requires consumption data from a range of consumers, over time, across a range of competing brands (Ehrenberg et al., 1990). Obtaining suitable attendance data for this type of analysis in a sport context is difficult, as usually sport consumers do not have a range of competing sport teams playing in their location to choose from. Television viewing data overcomes the issue of geography, but is difficult to obtain due to commercial restrictions. Many major cities are home to multiple teams across different sports, however differences in playing season and number of games make direct comparisons challenging. Each of these situations offers sport consumers choices and should demonstrate double jeopardy patterns, where data are available and comparable. There are some contexts, though, where a number of teams in the same professional code play in the same geographic area, including the Australian Football League (AFL).[2] Two particular aspects of the AFL, addressed in more detail below, not only make it suitable for this analysis, but also may constrain generalisability of the results.

2.1. League structure and composition

The regular AFL season involves 18 teams, each playing 11 home and 11 away games per season. The AFL was formed essentially through incorporation of teams from each of Australia's six states into one existing state-based league operating in Victoria. As a consequence, 10 of the 18 teams are based in the greater Melbourne area. Fans can purchase tickets on a game-by-game basis, buy season tickets to their favored club, or buy an AFL membership to access games played by a range of teams. The proximity of teams means that there is sharing of home stadiums. The 10 teams in one state (Victoria) share three grounds of varying crowd capacity. Each team has a home ground, but often plays at the other stadiums, depending on timing of matches, the opponent, and anticipated crowd size.

While the setting represented by AFL membership in the Melbourne area is unusual in sport, this context most closely resembles the wide range of options and low switching costs present in conventional consumer decision-making situations. The AFL's geographic concentration in Melbourne is atypical in sport, but not unique. In the English Premier League (soccer), six teams compete in one city (London), while in the Australian National Rugby League, eight teams are based in one city (Sydney). Consumption patterns present in the AFL may be found in other similar sport contexts which permit consumer choice between competing sport products. Similar contexts include locations with multiple sport teams (e.g., London and Sydney) and consumption that is not geographically-bounded, such as television viewership or merchandise purchase.

AFL games are highly attended, both relatively (given the small size of the Australian population) and in absolute terms. The AFL is the fourth highest professional sport league worldwide, ranked by per match attendance (Birch, 2014). Only the National Football League (U.S.), Bundesliga (Germany), and Premier League (England) average larger per-match attendance, while the AFL is slightly ahead of Major League Baseball (U.S.). The AFL is also followed by both genders in relatively equal numbers, with up to 50% of AFL fans and 45% of attendees reported to be female (Ward, 2015).

2.2. League season tickets

Adding further utility to the current research, the AFL operates a specific season ticket (membership) scheme that takes advantage of this co-location of teams. Most fans purchase season tickets to one team's games (club memberships), but the proximity of teams supports offering a league season ticket which gives access to all games played in the two main stadiums in Victoria. The championship deciding game, the Grand Final, is always played at the same location (Melbourne Cricket Ground) regardless of the home ground of participating teams. Access to that game is also bundled into league membership. The current research examines a large group of league season ticket holders, called "AFL Members". Members have purchased a season ticket allowing them to attend any of up to 40 football games played live in metropolitan Melbourne during the season, although they do nominate a team of support which gives them priority for high demand games of that team.

[2] For those unfamiliar with the sport, Australian football is a distinct sport code. Specifically, it is not rugby, soccer, or American football. See afl.com.au.

AFL membership can be thought of as similar to a stadium membership, but spread across two stadiums and primarily featuring only AFL content. All AFL Members nominate a team of support as part of their joining process, but the wide access to games played by other teams makes them uniquely suited to the current study. The proximity of 10 teams and the convenience of consuming any of several teams removes alternative explanations for behavioral loyalty based merely on geographic constraints. Access to a wide range of options and low switching costs is similar to the situation encountered by consumers of more prosaic products, such as toothpaste or laundry detergent. To the extent distortions appear in the expected double jeopardy and duplication of purchase patterns, the cause can be attributed to the distinct nature of sport consumption and not merely to lack of opportunity to consume multiple teams across consumption occasions.

The dataset used in this study focuses on AFL Members for a number of reasons. AFL Members have wide game access, and thus can switch between brands easily. AFL memberships are designed to appeal to more engaged fans (evidenced by the cost and access), so they represent heavy consumers of the product category. Consideration is limited to AFL Members who have nominated one of the teams in the greater Melbourne metropolitan area as their preferred team, permitting comparison between consumption of preferred and non-preferred teams without unequal geographic distribution factors playing a major role. Season tickets in sport generally operate as subscription products (McDonald, Karg, & Leckie, 2014), where consumers typically purchase a single brand (Sharp et al., 2002). Due to the nature of an AFL membership, however, consumers retain the ability to easily allocate attendance across multiple teams. While switching behavior or shifting affiliation between teams is reportedly low in sport (McDonald, 2010), AFL membership permits individuals to consume a variety of teams. These features make the AFL an ideal environment in which to test the applicability of empirical generalisations established with other consumer goods and brands in a sport context. However, the data are focused on season ticket holders rather than more casual fans and this, along with the atypical construction of the league, may limit generalizability of the results.

3. Study One: In-person attendance behavior

The initial study examines consumer attendance behavior at matches over an extended period of time to identify any patterns that conform to or deviate from established norms.

3.1. Study One: Data Collection

Data were obtained directly from the AFL governing body and provided by the manager of AFL memberships from its consumer database. Only members who indicated support for one of the 10 Victoria-based teams were considered for the study, reducing variability due to geographic constraints and physical access. Two hundred members who nominated each of the 10 teams were chosen at random. Overall, demographic, membership, and actual game-by-game attendance data were collected for 2000 AFL Members across 10 teams. For each member, three years of attendance data (2009–2011) were tracked, including every game attended, the date of the game, and which teams were involved. Over the three years, the 2000 members attended a total of 68,661 games. See Appendix 1 for total and per game home attendance for each of the 10 Victoria-based teams during 2009–2011.

Game attendance data were tracked through bar code scanning at the stadium. AFL memberships are non-transferable, meaning they cannot be given to others to use, and this is enforced through random identification checks at matches. The detailed, verified attendance data over multiple years enables controlling for variation in team on-field success and individual circumstances (e.g., other commitments arising in one year). Access to game-by-game attendance records for each AFL member also allows investigation of duplication of purchase behavior. Determination of how frequently each teams' customers are shared with each other team is possible. The duplication of purchase law dictates that a brand's customer base is expected to overlap with the customer base of each competing brand in line with the relative market share of the brands. Together, this permits a detailed examination of the degree to which observed laws of consumer marketing hold in the sport context.

3.2. Study One: Procedure

The Dirichlet model (Chatfield & Goodhardt, 1975; Ehrenberg et al., 2004) requires few data points to make theoretical estimates of expected market behavior. Two category-level estimates are necessary; representing the market penetration and average purchase rate of the overall category. For each brand tracked within the category, an estimate is necessary for brand penetration and average purchase rate for the brand. Game-by-game records of actual attendance recorded for AFL Members from the 2009–2011 regular seasons were analyzed to determine brand penetration rates. In this context, penetration rate represents the proportion of the sample which attended at least one game played by the team during the time covered by the data. Average purchase rate for each brand represents the average number of games of that team attended per year of people who attended at least one game for that team. Pre-season and post-season playoff games were excluded from consideration to ensure the dataset included the same number of games for each team.

The nature of team sport requires simultaneous consumption of two competing brands. This unique feature necessitates careful consideration of how best to count purchases when determining market penetration and share. No precedents could be found for dealing with this in the literature. For games involving an AFL member's preferred team, the assumption is made

that the preferred team offers the attraction, with the opposing team primarily being consumed as a necessary side effect. In calculations of brand penetration and average rate of consumption, such games counted for only the designated preferred team. Games where neither team was the designated preferred team of the AFL member were counted toward the total of both participating teams. Counting all games for both involved teams did not substantially alter findings presented in the results section. Brand penetration rates for all teams increased while purchase frequency declined when all games were counted for both teams. The relationships between observed and predicted behavior remained statistically unchanged.

Dirichlet VB (Kearns, 2004), an Excel-based program for fitting Dirichlet models, was used to calculate expected market penetration, purchases per buyer of the brand and the category, and estimated 100% loyalty rates for each of the 10 AFL teams based in Victoria. Teams were rank ordered based upon brand penetration, indicating percentage of members in the sample who attended at least one game involving that team. Average purchase rates were determined by calculating the annual average number of games involving each team attended by consumers of that team each year over the three-year period, 2009–2011.

3.3. Study One: Results

As seen in Table 1, a strong double jeopardy pattern was observed in the data. Each row of the table represents observed (O) and theoretically-predicted (T) patterns of behavior among consumers of the brand. Penetration rates and number of brand purchases per year (the first two columns) were used to fit the model and generate theoretic predictions. Category purchases represents the number of times per year a consumer of the brand consumed any brand (attended any game) within the product category. For example, the average consumer who attended at least one Collingwood game attended 12.4 games per year, while the average consumer who attended at least one North Melbourne game attended 12.9 games. Share of category requirements is the proportion of category purchases made by consumers of the brand directed to that brand. Consumers of Collingwood attended Collingwood games 26% of the time they attended any AFL game. The column for 100% loyalty rates reflects what percentage of consumers of a team attended exclusively games that included that team. For Collingwood, 6.6% of their spectators attended only games that involved Collingwood.

Penetration rates were used in fitting the model and, as expected, mostly reflect a close match. Double jeopardy predicts that frequency of purchase of a brand by purchasers of that brand will decrease as penetration decreases, a prediction which is supported by this research. Melbourne benefits from a higher penetration rate, while Collingwood lags in this metric relative to average rate of buying the brand each enjoys from their respective customer bases.

Observed rate of purchase of the category was moderately higher than those generated by the Dirichlet predictions. Beyond a slight positive offset, this closely followed the predicted pattern. As expected under the double jeopardy law, rate of purchase of a brand decreased with lower brand penetration, while rate of purchase of the category increased. In conformance with previous research in other domains, the variation in rate of purchase was moderate relative to differences in brand penetration. Observed share of category requirements for all 10 teams reflected a nearly-perfect match with the theoretically-predicted results. The correlation between observed rate of purchase of the category and predicted rate of purchase was .69 ($p = .028$), indicating an average fit, while the correlation between observed share of category requirements and predicted share was .97 ($p = .000$), indicating a good fit.

The only observed result that differed markedly from the theoretical predictions was the 100% loyalty rate ($r = .11$; $p = .768$). Based upon brand penetration rates and rate of purchase of the category, the Dirichlet model predicts very low rates of 100% loyal consumers, with only 1–2% of AFL Members dedicating all of their purchases to a single team. Actual game attendance data indicates somewhat higher frequency. While this result is at odds with the Dirichlet predictions, similar research commonly finds the Dirichlet model inaccurately predicting 100% loyalty rates, although the

Table 1
Observed and theoretically-predicted brand statistics.

	Penetration[a]		Brand purchases[a]		Category purchases		Share of category requirements		100% loyal rate	
	O	T	O	T	O	T	O	T	O	T
Collingwood	59%	66%	3.2	2.9	12.4	11.5	26%	25%	6.6%	2%
Carlton	59%	59%	2.6	2.6	12.0	11.8	21%	22%	6.3%	2%
Essendon	55%	56%	2.5	2.5	12.3	11.9	21%	21%	3.2%	2%
Richmond	52%	49%	2.2	2.3	12.4	12.1	17%	19%	4.8%	2%
Geelong	50%	49%	2.3	2.3	12.6	12.1	18%	19%	6.8%	2%
Hawthorn	49%	49%	2.3	2.3	12.8	12.1	18%	19%	2.9%	2%
St Kilda	47%	48%	2.3	2.3	12.7	12.1	18%	19%	6.0%	2%
Melbourne	46%	42%	1.9	1.9	12.6	12.3	15%	17%	7.5%	1%
Western Bulldogs	45%	43%	2.1	2.1	12.8	12.3	16%	18%	4.4%	1%
North Melbourne	40%	41%	2.2	2.2	12.9	12.3	17%	17%	2.6%	1%

[a] Used in fitting the Dirichlet model.

reason is unknown (Sharp, 2010). Typically, 100% loyalty rates are under-predicted; however the magnitude of this discrepancy is usually consistent between brands (Ehrenberg et al., 2004), unlike the pattern in the current results. As such, this may represent a unique feature in the context of sport consumption, and is further addressed in the future directions section.

Examination of duplication of purchase rates allows identification of any partitions in consumption patterns. The traditional duplication of purchase law states that each brand's customer base overlaps with the customer bases of other brands in proportion to the brand's market share. Brands with high market share should overlap with a large portion of the customer base of each competing brand, while those with low market share should capture a relatively smaller portion of the customers of other brands. If 77% of Carlton's consumers also attended at least one Collingwood game, then absent any partitioning effect, Collingwood should share approximately 77% of Essendon and Richmond customers as well. If North Melbourne shares only 55% of Carlton's customers, they should expect to also share approximately 55% of Essendon's and Richmond's. As seen in Table 2, the duplication of purchase law holds in the case of the observed data. No partitions are evident between teams in the study, although Hawthorn shares a higher-than-expected share of consumers with most of the other teams. Hawthorn's popularity amongst fans of other teams may be explained by either their overall success during this period or the presence of exciting individual players (e.g., Lance Franklin, Cyril Rioli). Overall, however, results indicate that consumers of a team consume other teams in line with the second team's market share. A corollary of this observation is that rivalries do not drive consumption behavior in the AFL. Consumption of both rival and non-rival teams is in line with the market share of the participating teams and does not appear influenced, positively or negatively, by effects of the rivalry.

Ehrenberg and Goodhardt (1970) offered a process to calculate expected duplication of purchase rates. Average duplication across all brands is divided by the average penetration across all brands. The result is then multiplied by the observed brand penetration rate to generate an expected rate of duplication of purchase. Results in Table 2 show a very good fit between average and expected duplications with a correlation of .98 ($p = .000$).

4. Study Two: Second team preferences

In order to examine duplication of purchase effects in another sport context, a second study was conducted examining preference frequency and allocation of preferences to second teams. Sport consumer research, to date, has specifically focused on individuals' first-team preferences. Research in this vein consistently indicates the strength of loyalty exhibited by fanatical consumers in relation to first-team preferences (Bristow & Sebastian, 2001). Understudied is how consumers allocate support preferences to teams other than their most preferred team.

4.1. Study Two: Data collection

The data used in this analysis was collected from a sample of Australian adults in September of 2012. As part of a larger survey designed to estimate the national interest and consumption of professional sport in Australia, 17,132 respondents were recruited from the online panels of two different professional panel providers. Efforts were made to ensure respondents were not duplicated between the two panels. The sample was a stratified random sample, designed to reflect known characteristics of the Australian population. In particular, those variables known to impact sport consumption – gender, age, rural or urban home base and ethnicity – were controlled for. The large sample was required to enable accurate estimation of the total Australian adult population (approximately 17.3 million at the time of data collection).

An online survey was administered to the panel covering sport interest, motivations, participation, and consumption of professional sport products. The focus of this study was on team preferences and, in particular, how second team preferences

Table 2
Duplication of purchase rates.

	COLL	CARL	ESSE	RICH	GEEL	HAWT	ST K	MELB	WEST	NORTH
COLL	–	77	75	68	68	68	63	61	60	56
CARL	77	–	75	69	66	68	63	59	60	55
ESSE	81	81	–	73	70	73	68	64	64	58
RICH	77	78	77	–	68	70	66	65	65	59
GEEL	81	79	77	71	–	73	69	63	65	58
HAWT	81	81	81	74	73	–	69	66	67	60
ST K	78	79	78	73	72	71	–	63	68	61
MELB	77	75	76	73	68	70	64	–	63	60
WEST	79	79	79	76	72	73	72	65	–	64
NORTH	81	81	79	76	71	74	72	69	71	–
Average	79	79	77	72	70	71	67	64	65	59
Expected	83	83	77	73	70	69	66	64	63	56

Numbers in each cell represent the proportion of people who attended games with team X (row) who also attended games with team Y (column). Coll = Collingwood, Carl = Carlton, Esse = Essendon, Rich = Richmond, Geel = Geelong, Hawt = Hawthorn, St K = St Kilda, Melb = Melbourne, West = Western Bulldogs, North = North Melbourne.

are determined. To examine team preference allocation and combinations, a sequence of questions was employed to identify sport fans, fans of the AFL, those who followed a team and who also had a secondary team. After screen-outs due to demographic categories being filled, 5,604 respondents listing the AFL in their top three favorite sports remained.

4.2. Study Two: Procedure

The 18 AFL teams were ranked by frequency that respondents indicated each club as their favorite sport club to follow. Given the ability of consumers to follow a team regardless of geographic location, all teams in the AFL were included in study two. For each team, calculations were performed to determine the frequency with which the team was listed as the primary supported team, received second-team support, and what portion of its supporters listed no other team. Respondents were also grouped based on indicated first-team support. Frequency of second-team support for each alternative team was also calculated.

4.3. Study Two: Results

Nearly all respondents (96.0%) indicated at least a first-team preference, while a sizeable minority (40.5%) also expressed secondary support for at least one additional team. Selection frequency as first-team supported ranged from .6% (Greater Western Sydney) to 9.0% (Collingwood, Sydney, and Adelaide). Designation as a secondary team supported ranged from 1.3% (Melbourne) to 4.2% (Sydney). Frequency of designation as favorite team was moderately positively correlated with frequency of designation as a second-team preference ($r = .62$; $p = .006$), consistent with H3. Likelihood of a team's fans expressing at least one second-team preference ranged from a low of 27.7% (Richmond) to a high of 83.3% (Greater Western Sydney). Market penetration of first-team preferences was moderately negatively correlated with likelihood of supporters having a second-team preference ($r = -.60$, $p = .008$), supporting H5 (Table 3).

Traditional rivalries offer a perspective from which to examine shared team preferences. Due to their recent establishment, Gold Coast (2011) and Greater Western Sydney (2012) have had little time to build the meaningful history that typically underlies a rivalry. Outside of Victoria, the AFL offers two other intrastate rivalries: Adelaide and Port Adelaide in South Australia, and West Coast and Fremantle in Western Australia. Adelaide (24.3%) was by far the most commonly listed second preference of Port Adelaide supporters. The reverse was also true, as 10.4% of those who indicated Adelaide as their first preferred team expressed additional support for Port Adelaide. West Coast and Fremantle followers similarly indicated frequent shared preferences, as 27.9% of West Coast adherents also supported Fremantle and 44.3% of Fremantle supporters listed a secondary preference for West Coast.

Amongst the Victoria teams, the biggest rivalries are between Hawthorn and Geelong and those between the Big Four clubs: Collingwood, Carlton, Essendon, and Richmond. At 5.7%, Geelong is the second most supported second team of Hawthorn supporters, a relationship that is not reciprocated, as Hawthorn receives only average (2.7%) secondary support from Geelong fans. Among the Big Four teams, shared support was neither exceptionally high nor low in any of the twelve unidirectional pairwise combinations. These findings fail to indicate any systematic rivalry effects in the allocation of second team preferences, thus supporting H4.

Table 3
Frequency of first-team and second-team preference indication.

Team	First-team preference frequency	Second-team preference frequency[a]	Frequency of support for a second team
Collingwood	9.0%	2.7%	30.8%
Sydney	9.0%	4.2%	37.8%
Adelaide	9.0%	2.5%	37.1%
Essendon	8.9%	2.8%	30.8%
West Coast	8.3%	3.0%	47.0%
Carlton	7.6%	2.7%	30.2%
Geelong	7.2%	3.4%	36.1%
Brisbane	5.7%	3.2%	49.8%
St. Kilda	5.6%	3.3%	31.8%
Hawthorn	5.3%	2.4%	34.4%
Richmond	4.8%	2.4%	27.7%
Fremantle	3.3%	3.4%	66.1%
Port Adelaide	3.2%	1.8%	47.0%
Melbourne	3.2%	1.3%	41.8%
Western Bulldogs	2.3%	1.6%	32.6%
North Melbourne	2.3%	1.4%	34.4%
Gold Coast	.8%	2.4%	78.7%
Greater Western Sydney	.6%	1.7%	83.3%
Don't follow a particular team	4.0%	59.5%	

[a] Column does not sum to 100% due to multiple second-team selections.

5. Discussion

Doyle et al. (2013) presented the first empirical exploration of sport brand double jeopardy, finding evidence for double jeopardy patterns in attitudinal loyalty of fans across sports of varying popularity. Through testing both behavioral (study one) and attitudinal (study two) components, the current research reinforces the generalizability of Doyle et al.'s results. Further, by including 10 (study one) and 18 (study two) teams, the current research supports exploration of duplication of purchase behaviors and a test of the extent to which sport creates deviations from empirical laws established in non-sport contexts.

Sport features, such as heated rivalries or extreme fan loyalty which affect consumer behavior, ought to show up as deviations from established double jeopardy patterns. On the contrary, results from the current research provide evidence that sport consumers operate similarly to consumers of many other product categories, consuming a variety of teams and without evident partitioning between rivals. This conclusion is also consistent with recent work showing classic non-sport variables (self-assessment, usage, and tenure) are powerful predictors of season ticket renewal (McDonald et al., 2014), without resorting to sport features such as fandom.

In developing a typology of football supporters, Tapp and Clowes (2002, p.1258) identified a novel segment – "repertoire fans" – representing slightly over a quarter of their sample. Repertoire fans have a supported team; however, they also regularly attend matches which do not involve their team. By defining loyalty attitudinally, rather than behaviorally, repertoire fans see no conflict between self-image as loyal supporters and consuming matches of other teams (Tapp & Clowes, 2002). Repertoire consumption is common in non-sport industries (Ehrenberg et al., 2004). Results from the current research indicate the AFL Members studied also demonstrate similar consumption patterns.

Repertoire consumption patterns in match attendance could plausibly arise among spectators who are primarily attracted to the sport or league rather than to a specific team. Kunkel, Funk, and Hill (2013) examined differences between sport fans based on relative psychological involvement with their favorite league and team. They found a majority of respondents exhibited equal levels of psychological involvement with their favorite league and team, while approximately one fifth were more involved with the league than their team. McDonald et al. (2010), in exploring multiple team allegiances, noted such behavior typically involves teams across different sports or different leagues. The current research clearly shows multiple allegiances are also common within a single league. Study two directly addressed multiple allegiance using a nationally-representative sample and found approximately two in five AFL fans self-identified as supporters of two or more different teams.

Results of study one offer support for hypotheses H1 and H2. Consumers of high market-share AFL teams are slightly more loyal than those of low market-share teams, attending games involving the high market-share team more often. The law-like empirical generalisations of double jeopardy and duplication of purchase widely observed in other domains appear in the context of sport attendance. Analysis of the duplication of purchase observations indicates AFL game attendance shows little signs of partitioning. While the AFL offers traditional rivalries, as is common in sport, actual consumption behavior indicated no such division. Choice of which games to attend and which teams to consume was in line with overall market penetration of each team. As with most other consumer goods, teams shared their customers and larger teams captured a larger share of the customers of each other team.

Results of study two offer support for hypotheses H3, H4 and H5. A moderate positive relationship was found between frequency of first-team support and frequency of second-team support. Level of first-team support was moderately negatively related to the likelihood of having a second-team preference. No indication of any systematic effects from the presence of sport rivalries was present. Evidence was found for shared support between fan bases of teams located outside of Victoria for the other intrastate team. Schwartz and Barsky (1977) explicated the role of sport teams in the fabric of communities as a medium for the celebration of local identity, while Jones (1997) found locality to be the most frequent basis for selection of a team to support. The celebration of community has also emerged as a motivating factor for sport fans both when choosing team preferences (Kolbe & James, 2000) and when seeking to settle in a new area (Funk & James, 2001). The effect of regional identity operates at increasingly inclusive levels of abstraction (Turner, 1985; Turner, Hogg, Oakes, Reicher, & Wetherall, 1987). Therefore, people supporting a specific team may adopt another team within the same region (state in the present study) due to a more inclusive state-level identity. This example would follow the lines of state of origin identification whereby a consumer chooses to support another team in his or her state instead of selecting a team from another state. Despite this mild perturbation, overall, first-team and second-team support was shared across both rival teams and non-rival teams in line with levels of first-team support.

Non-existence of rivalry effects in second-team preference allocation frequency in study two matches the lack of partitioning in study one. Behavioral outcomes (study one) and attitudinal responses (study two) both indicate that conflict arising from inter-team rivalries does not appear to reduce the likelihood that a rival team will be selected as a second purchase option. While speculation that increased consumption of disfavored teams can be driven by rivalry and not considered disloyal behavior is reasonable, an equivalent argument cannot be made with regard to expressed support preferences. Replication of behavioral findings from study one in the context of attitudinal expression in study two removes targeted consumption of a disfavored team as a plausible alternative explanation. Finding support for the empirical laws studied in the context of attitudinal preferences reinforces conclusions drawn from the first study, which focused on behavioral outcomes. The use of multiple methods and divergent perspectives to examine similar questions provides opportunity to integrate these two approaches, offering stronger evidence that the conclusions reached are not merely an artifact or effect of the technique adopted.

5.1. Challenges to generality

The unique aspects of the context examined here – the lop-sided geographic disbursement of the teams and the offering of a league membership – raise questions about the extent to which these findings would likely be replicated by studies in other sport contexts. The presence of so many teams (10) in one city may indeed influence consumption. Remembering also that the AFL grew out of expanding a state-based league into a national competition, it could be argued that people in Melbourne are used to seeing multiple teams play. Sport fans in this city are more likely to mix with fans of other teams than in single team towns and, therefore, more likely to attend the games of non-preferred teams. Loyalty metrics would be impacted as a result of this cultural factor.

Further, the nature of the AFL Membership buyers, which were the focus of this study, could complicate matters. The AFL Membership is promoted as a league membership, allowing access to a variety of games, not just one's preferred team. While a major benefit of this membership is guaranteed access to the Grand Final (championship match) if one's preferred team is playing, the membership is marketed with an emphasis on access to a wide variety of games. This appeals not only to fans who want to attend both home and away games featuring their team, but also to people who simply love the sport and want to consume a large number of live games from a range of teams. Again, this would impact loyalty metrics.

Despite these two features, there is evidence suggesting that results will generalize to other similar sport contexts. Pending confirmation in future studies, double jeopardy and duplication of purchase patterns should exist in other contexts where consumers have direct choice between multiple sport products. While in-person game attendance typically offers minimal within-sport alternatives, mediated consumption through television, mobile, or Internet channels and merchandise purchases avoid geographic limitations. Many major cities are home to multiple professional sport teams across different sports. Doyle et al. (2013) demonstrated double jeopardy patterns in attitudinal loyalty across sports. Based on results of the current study demonstrating similar patterns in within-sport attendance behavior, it is likely these patterns exist between sports when teams are geographically proximate.

Results from the current research are in line with a very large number of studies examining double jeopardy and duplication of purchase patterns across a wide range of contexts (Ehrenberg et al., 1990; Ehrenberg et al., 2004; Habel & Lockshin, 2013). Every time a new context is examined, it is anticipated that unusual market features will impact on the degree to which empirical generalisations hold (see for example Solgaard, Smith, & Schmidt, 1998, discussion of Danish politics and double jeopardy). Yet, with very few exceptions, researchers consistently find both the double jeopardy and duplication of purchase patterns. Atypical aspects of the AFL might limit the generality of results from the current study; however, further investigation in additional sport contexts such as television viewership appears warranted.

5.2. Academic contributions

This paper represents the first exploration of sport brand double jeopardy effects on consumer purchase behavior. As such, the current research provides a novel perspective on how sport operates and similarities between sport management and mainstream business approaches. That the double jeopardy effects operate in sport consumer behavior offers evidence that sport management shares common consumption patterns established through empirical generalisations identified in non-sport contexts. This, in turn, suggests sport brands may be managed in similar ways to how non-sport brands are managed. This conclusion also lends credence to the practice of using sport as a research context providing evidence and theory development aimed at non-sport outcomes (e.g., Day, Gordon, & Fink, 2012).

Put simply, the presence of standard law-like patterns amongst sport consumer behavior means that managers of sport organizations should be encouraged to adapt best practices from industries such as consumer goods and subscription markets. Evidence from study of non-sport products indicates that managers should not, for example, rely on a strategy focused exclusively on developing a small number of die-hard consumers who consume vast quantities of the product, at the expense of a broader base. An implication drawn from double jeopardy research is that breaking out from typical consumption patterns to create a strong niche brand is difficult and rare (Ehrenberg et al., 2004). While this conclusion may be context-dependent, the current study suggests similar patterns apply to sport consumption behaviors. One clear indication from this stream of research is that the best way to build overall consumption requires balance between more customers and customers who buy more often.

5.3. Managerial implications

While, on the surface, evidence of double jeopardy effects in sport consumer behavior patterns is not startling, it does have implications for practitioners tasked with managing a sport product or brand. Evaluating the effectiveness of promotional efforts, especially those aimed at generating or sustaining loyalty, requires comparisons with appropriate baselines. Results from the current research suggest these baselines can be determined through Dirichlet modeling (Fader & Schmittlein, 1993). A large-share brand should expect relatively higher levels of loyalty, share of category consumption, and purchase frequency. Managers of small-share brands should not be concerned by an apparent lack of loyalty among their customers or indications that their customers also frequently consume large-share brands. This is normal consumer behavior and to be expected.

Second, the presence of traditional double jeopardy patterns signals what types of positioning strategies are likely or unlikely to work. Deviations from the double jeopardy phenomenon are expected to be rare. Following the double jeopardy generalisations, in order to grow the size of a brand requires concurrently expanding brand penetration. A strategy of appealing to a small number of high volume, high loyalty customers is, therefore, contraindicated as unlikely to succeed. In prior research in non-sport contexts, when deviations from double jeopardy patterns are found, such deviations tend to be away from niche positioning (low penetration, high purchase frequency) and toward change-of-pace positions (low penetration, low purchase frequency; Fader & Schmittlein, 1993). This runs counter to the idea that highly-loyal sport fans result in small, dedicated, customer bases (Bristow & Sebastian, 2001). Absent specific evidence of a rare deviation from double jeopardy patterns, sport managers are encouraged to treat their brand in a manner similar to approaches adopted outside of sport. A manager should adopt sport-specific management practices only where one has a clear indication of an exceptional situation. Where consumers in a particular sport context differ from those in the two studies presented in the current research, this implication may be less applicable.

As knowledge of marketing empirical generalisations has spread, examples of best practice in other industries are becoming known. Sharp (2010) argues that the presence of these patterns should sharpen the focus of managers on building mental and physical availability, greater awareness, and wider reach. The challenge for managers of sport teams is to determine effective ways of building mental availability (awareness through distinctive assets) and physical availability (wider reach through improved and timely distribution). The success of major professional leagues in launching their own media networks and embracing new distribution channels, such as Internet broadcasts, are just two examples of how professional sport can achieve these outcomes.

6. Limitations and future directions

As with all research, the current studies include limitations and offer guidance for future exploration. Use of both consumer behavior and attitude in the form of in-person game attendance and team support preferences in studies one and two, respectively, offers some assurance of the generalizability of findings from the current research. Nonetheless, both studies focused on a single sport in a single country. The strength of conclusions drawn from the current research and applicability of the associated academic and managerial implications are tied to the extent to which the AFL spectator experience is representative of the broader sport market. While the AFL in Melbourne offers useful features, such as reduced geographic barriers to multiple team consumption, more than one or two directly-competing teams in the same city is atypical in sport.

Future replication should be undertaken to establish evidence for double jeopardy patterns in other sports and countries, as well as across multiple sports and national borders and in more typical settings. Specifically, a city such as London offers opportunity to examine double jeopardy patterns both within a single sport (six Premier League teams) and between sports (soccer, cricket, rugby union, and rugby league, among others). Shared grounds (e.g., Stadio Giuseppe Meazza in Milan, Staples Center in Los Angeles, or MetLife Stadium in New York) represent examples where two directly-competing sport teams share a facility, removing all geographic constraints on attendance. Additionally, sport consumption is not limited merely to in-person attendance and investigation of the presence of similar effects in television or online media consumption would provide a useful extension to the current results.

Consumers may purchase AFL tickets on a game-by-game basis, (partial or full) season tickets for a particular club, or AFL memberships. The sampling frame in study one captured only AFL members. This delimitation was selected due to the wide access to multiple teams and presumptive high level of AFL engagement of such members. However, this decision simultaneously introduces concerns about the generalizability of findings in the current research, especially as casual sport consumers are thereby excluded. Future research examining a wider range of sport consumers from casual observers to die-hard fanatics is necessary. Using a nationally representative sample of Australian adults in the second study partially addresses this concern; however, further investigation is warranted.

Consistent with previous operationalizations, the current research defined the higher loyalty enjoyed by larger share teams in terms of a higher percentage of AFL attendance directed toward the team. Loyalty is a complex and multi-faceted topic and measures beyond share of wallet might be more appropriate. Further research should investigate alternative specifications of loyalty to investigate the presence of double jeopardy patterns. McPhee's (1963) original observation of the phenomenon was in the context of prevalence of positive attitudes toward comic strips and news personalities, which demonstrates how robust the patterns are to varied operationalizations. While double jeopardy patterns are expected for many measures of loyalty, further investigation could be fruitful.

The one area where AFL attendance markedly differed from standard Dirichlet-based predictions was in frequency of 100% loyal customers. Based purely on the relative market share of each team, overall game attendance, and rate of attendance at games of each team, the theoretical model indicates extremely low expected occurrence of 100% loyalty. In practice, teams averaged more than three times as many 100% loyal customers as predicted. While errors in Dirichlet model predictions of 100% loyals are common (Sharp, 2010), discrepancies are typically consistent between brands (Ehrenberg et al., 2004). Findings in the current study fail to conform to predictions of the Dirichlet model. This is not unusual in similar research, but might indicate a limited area where sport operates in a distinct fashion. Further investigation is necessary to determine the source of this observed discrepancy. This also offers a potential avenue to identify a source of sport distinctiveness.

Future research should also adopt a longitudinal research design to capture shifts in purchasing behavior over time. The Dirichlet model assumes a stable market in a steady state (Ehrenberg et al., 2004). Understanding the impact of changes in on-field performance or introduction of a new star player to a team or league could be of substantial academic or practical interest. Established double jeopardy patterns offer a baseline and permit auditing perturbations and departures from predicted consumer behaviors.

7. Conclusion

In following law-like patterns common to many other products and a wide range of customers, sport does not exhibit as many unique attributes as has been commonly understood. What remains to be explored is the extent to which sport continues to operate distinctly and where the boundaries lie between how, if at all, consumers perceive and interact with sport brands differently than they do with brands in other categories. Meanwhile, findings from the current research strongly suggest that sport brands operate in similar ways as those in many non-sport contexts. One implication is that management of sport brands may not require specialized approaches, but rather can be addressed with theory and practice established more generally.

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Appendix 1. Home game attendance by team

Team	2011 total attendance	2011 average attendance	2010 total attendance	2010 average attendance	2009 total attendance	2009 average attendance
Collingwood	676,372	61,488	695,816	63,256	587,782	53,435
Carlton	585,337	53,212	528,094	48,009	526,177	47,834
Essendon	541,932	49,212	486,027	44,184	554,147	50,377
Richmond	470,624	42,784	411,969	37,452	474,818	43,165
Hawthorn	399,993	36,363	416,639	37,876	435,981	39,635
St. Kilda	396,938	36,085	418,252	38,023	373,397	33,945
Geelong	389,414	35,401	430,471	39,134	330,312	30,028
Melbourne	341,504	31,046	411,169	37,379	303,268	27,570
North Melbourne	291,210	26,474	262,356	23,851	306,987	27,908
Western	289,234	26,294	334,918	30,447	361,647	32,877

Birch (2010, 2011).

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