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Turning Insight into Action: A Case Study Assessing the Use of Consumer Behavior Data in Minor League Baseball Marketing and Communication Strategies

Jessica R. Braunstein-Minkove
Towson University, jminkove@towson.edu

Ari Kim
California State University, San Bernardino, ari.kim@csusb.edu

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Jessica R. Braunstein-Minkove

Towson University

Ari Kim

California State University, San Bernardino

Abstract

As the usage of data-driven decision-making (DDDM) has increased in sport business operations, organizations must refine the ways in which they both obtain and use data to understand and, ideally, meet the needs of their consumers. A qualitative analysis, including eight in-depth interviews with a Minor League Baseball's (MiLB) front office staff, was conducted. This was done in order to better understand the organization's decision-making process and how they use various types of data, including the results of quantitative results from an academic study, when determining how best to reach their consumers. After a thematic analysis, three primary and six secondary themes were identified, including Use of Data Analytics (Strategic, Tactical), Application of Data Analytics (Confirmation, New Markets), and Data Sharing (Open Channels, Closed Channels). Practical and theoretical implications, as well as limitations and future research directions, are discussed.

Keywords: *data-driven decision-making, strategic communication, consumer behavior, Minor League Baseball*

Please send correspondence to: Jessica R. Braunstein-Minkove, jminkove@towson.edu

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Data-driven decision-making (DDDM), or the process of using facts, metrics, or data, rather than observation or intuition alone, to guide strategic decisions (Provost & Fawcett, 2013), is not new in sport, particularly regarding athletic performance (e.g., Foster et al., 2021; Leung & Joseph, 2014). Recently, the growth of supporting tools (e.g., customer relationship management software, merchandise/team store software) has transformed the way sports are promoted and managed (Fried & Mumcu, 2016), especially in sport consumer behavior (Wedel & Kannan, 2016) and strategic communications (Wiesenberg et al., 2017). Business operations of sport entities integrate DDDM into ticket pricing, database management, corporate partnership valuation, fan engagement, and customer relationship management (Davenport, 2014). Moreover, sport organizations have greater access to consumers' opinions and attitudes, consumer segmentations, preferences for products and services, and promotional campaigns, thanks to the advent of consumer-generated content and social media (Mamo et al., 2021), often used as a basis of DDDM.

The benefit of DDDM in business operations has been demonstrated in previous research (Brynjolfsson et al., 2011; Fried & Mumcu, 2016; Kumar et al., 2013). Brynjolfsson et al. (2011) argued that firms that are more data-driven in their decision-making process have higher chances of productivity in greater variety of ways (e.g., higher return on assets, return on equity, asset utilization, and market value). DDDM also allows service marketing managers to foster a mutually beneficial relationship with their customers by helping them optimize marketing communication strategies and delivery methods (Kumar et al., 2013). As such, increased availability of data in various forms and a better understanding of the value of DDDM have resulted in more organizations using these oft-recommended practices in the decision-making process for team operations (Braunstein-Minkove et al., 2021).

Although the adoption of DDDM in professional sports is evident (Troilo et al., 2016), different organizations might engage in DDDM to greater or lesser degrees (Provost & Fawcett, 2013). Teams in major professional leagues in the US (e.g., MLB, NBA, NFL) have invested heavily in research using the latest data technologies to gain a competitive edge (Grand View Research, 2022). Although the use of data has migrated from sport (i.e., on-field) to business operations in many high-profile organizations, smaller organizations (e.g., minor league teams, lower division collegiate teams) with limited budgets and workforces often struggle with numerous constraints that prevent them from actively incorporating DDDM or, at the very least, developing a formalized and integrated process. For underresourced, underfunded sport organizations, effective interorganizational collaborations such as industry-academic partnerships might be an option to obtain consumer behavior data for DDDM (Goslin et al., 2020). Therefore, the purpose of this work is to use a case study approach to assess how a professional sport organization uses primary and secondary data, including data obtained through an academic research partnership in order to provide practical recommendations for similarly situated sport entities.

Method

Following a multi-phase quantitative consumer behavior analysis of an American professional baseball team, semi-structured, in-depth, 30–60-minute interviews (Gubrium & Holstein, 2002; Holstein & Gubrium, 2003, 2012) were conducted with front-office staff members ($n = 8$) to assess the ways in which they use data, including the results from the quantitative assessment. The semi-structured, in-

depth interview method was selected as it allows researchers to explore the way in which participants give meaning to, or interpret, their own experiences, simultaneously providing researchers with a tool to effectively achieve research goals when exploring a certain topic because it is structured to some extent (Corbin & Morse, 2003). The sport team was purposely selected because (a) they are a minor league team with limited resources and (b) they have had access to both internal and external data, including academic reports by the scholars through the aforementioned research partnership. The internal and external data that the organization has access to includes, but is not limited to, sales data (e.g., ticket, merchandise, concessions), spectator satisfaction survey data, fan survey data from academic partnership projects, and Minor League Baseball (MiLB) survey data from the league.

Considering the small number of staff in the organization, all front-office staff members ($N = 11$) were invited to participate in an in-depth interview session. Following Chenail's (2011) procedure, an interview protocol was developed, including questions revolving around the data that the organization assesses annually (both primary and secondary), the differences between what is typically addressed and what was reported by the scholars, the way in which the academic reports were integrated into strategic marketing and communication strategies, and the industry professional's perception of the value of the academic insight. To prepare for analysis, data were recorded, transcribed, and coded by two heterosexual, cisgender women (one White, one Asian) in their early 40s.

Accounting for the unique nature of DDDM in the MiLB context and the lack of research thereof, an inductive approach towards the data was deemed valuable (Saldaña, 2016) and a thematic analysis was conducted (Braun & Clarke, 2006). The first coder created a code document with an open coding to identify primary and secondary themes. Then, the first and second coders used it as a theme structure to independently code all transcripts (Saldaña, 2016). The two coders coded and analyzed the transcripts individually while using a constant comparative method to identify any discrepancies (Glaser, 1965; Saldaña, 2016). After the independent analyses, two coders reviewed the themes and related verbatim together to confirm them. In the process, intercoder reliability was established, and themes were finalized. Pseudonyms were also assigned to each participant for anonymity. The recruiting procedure, including the recruiting material and the in-depth interview guide, was approved by the lead author's Institutional Review Board (IRB approval #1909057448).

Participants

On average, participants were 30 years of age and primarily White (75%), with the additional 25% being evenly split between those of Black and Hispanic origin. Additionally, 62.5% of participants identify as male, whereas 37.5% identify as female, and all earned at least a Bachelor's Degree (75% Bachelor's Degree, 25% Master's Degree). All eight (100%) are employed with the organization full-time, working in sport for an average of 7 years (removing an outlier of 22 years) and approximately 3 years with the organization. The majority of the participants had no data analytics training (63%), but 37% did report minimal training (e.g., degree/university requirements, Google Analytics). The individuals' roles in the organization includes experience in the following departments: executive management, ticketing, corporate partnership and event, food and beverage, operations and merchandising, and marketing and game production.

Findings and Discussion

Three primary themes were identified, each including two subthemes: Use of Data Analytics (Strategic, Tactical), Application of Data Analytics (Confirmation, New Markets), and Data Sharing (Open Channels, Closed Channels).

Use of Data Analysis

When discussing DDDM, incorporating both primary and secondary data, Use of Data Analytics was identified to represent the “how” of DDDM. More specifically, it addresses how data are used by individuals in upper-level management (i.e., Strategic) versus how they are used elsewhere within the organization (i.e., Tactical). In general, DDDM was identified as valuable and used regularly; however, the way in which it was used to support organizational goals varied depending on the role of the participants. This theme is aligned with Sleep et al.’s (2019) hierarchy of data-oriented decision-making model, which argues that organizations with limited time and manpower reside at the lowest stage of the hierarchy. As such, they most often rely on the HIPPO (Highest Paid Person’s Opinion) in making strategic decisions.

Strategic

Although the organization included in this assessment is small, there is a clear distinction regarding how data are used. Specifically, information from large-scale quantitative data analyses, particularly findings associated with the academic research partnership, is used by those in leadership positions for strategic purposes (i.e., drive overarching initiatives intended to meet organizational goals). This included the results that were derived from academic research and presented to the organization as a whole, as noted by James (Male, 30):

I would say 90% of the data was used by XX [Upper Management] and me, and then we would make the decisions for the company top down... XX and I would be the ones to gather data and use it to push whatever campaigns, posts, and whatever we were trying to sell at the time. So, XX and I are the predominant owners and users of the [academic] data.

Tactical

Conversely, the individuals “in the trenches” use alternative primary data to meet the goals laid out by those invested in strategic planning. For example, in lieu of academic reports, data on hand, including internal sales data and purchasing trends, are used to understand consumer needs. As Tucker (Male, 28) noted, “if a promo night brought in more fans in the past, we will run the event again.” Consequently, reviewing previous season’s data in finalizing promotional schedules, an organization can find significant value in easy access data points (e.g., CRM/ticketing system, merchandise system, sponsor information, vendor information, etc.) to use in making tactical decisions. Tim (Male, 52) reiterated this, noting that “a lot of it is pulling from past experiences and knowledge, as well as working with our management team for both their direction and insight.”

Application of Data Analytics

As opposed to the “how” of Use of Data Analytics, Application of Data Analytics encompasses the “why” of the process. It was found that current staff uses data for both Confirmation (e.g., current clientele and practices) and to move forward to bring in New Markets (e.g., who is not in attendance). This aligns with the work of Kumar and colleagues (2013), indicating that data-driven marketing will help foster a mutually beneficial relationship with one’s customers, as it allows for optimization in marketing and communication strategies.

Confirmation

Due to the nature of the organization (i.e., a community-based MiLB team with a strong tradition of long-term season ticket holders), they regularly have a chance to interact with long-term fans in a casual manner. As a result, the management team has a solid understanding of the majority of their consumers; however, the academic data provided a systematic review of these perspectives, confirming many of their beliefs. Additionally, given the size of the stadium and the laid-back nature of the environment, the management team interacts with consumers both on-site and through social media. Sara (Female, 25) highlighted this by noting that:

people in the office that have attended [our] games in the past have a knowledge of what they see at the ballpark and what they don't. A lot of it also can come from . . . social media—who's interacting with our posts and who's not interacting with our posts.

New Markets

Often data are used in DDDM to understand a bit more about those who are not current consumers in the interest of expanding their reach. Interestingly, when the participants were asked if there was anything else they would like to have obtained from the academic research, each one noted that they would be most interested in information regarding new markets or the things they are not doing well. For example, Tucker (Male, 28) indicated an interest in “not what gets people to come here on our popular nights but maybe what gets people to come on our off nights would be helpful. What could we offer that maybe we’re not offering?” However, as this was not addressed in the initial consultations or instrument development, these research needs were not realized until this post-project evaluation.

Data Sharing

Stemming from the concepts addressed in Use of Data Analytics, themes revolving around Data Sharing were often noted throughout the interviews. O’Reilly and Knight (2007) noted that effective sharing of an organization’s intellectual capital is important for sport organizations given the challenges of managing vast amounts of information. Although they were more often highlighted in specific examples of daily practices, the ideas of Open Channels (e.g., collaboration) and Closed Channels (e.g., single-source or lack of access to information) were woven throughout each conversation.

Open Channels

As with decision-making in general, communication is critical. This is no different in DDDM, particularly as data do not have to be formal and quantitative to be relevant to the process. Interviews revealed consistent use of anecdotal sharing and requests for data sharing throughout the organization at various levels. For example, Margo (Female, 23) discussed collaboration and the sharing of information between departments to ensure success with external partners:

We're collaborating with our Corporate Partnerships department. They're getting their signage together and we're pinpointing what signage needs to be changed out, what needs to be done, it's a huge collaborative effort among every single department here when it comes to figuring out what needs to change based off of the stadium itself.

Kelly (Female, 25) reiterated the sentiment regarding obtaining items necessary for DDDM when working with a different department:

Some of the information comes from our group packages purchased through ticketing . . . our Director of Ticketing has a database of different groups, like large corporations that have booked group packages for XX games. I have the spreadsheet of that so I have a list of different direct contacts that I have the opportunity of reaching out to [in order] to potentially book corporate meetings.

Closed Channels

Throughout the interview process, it became clear that this particular organization has a number of deficiencies in its DDDM process. Although there is significant value in collaboration, it also works to highlight areas of weakness. The most glaring issue of note is their individualized departmental processes, primarily highlighted by a lack of an integrated marketing information system. Although the value of a streamlined process and generalized access is often highlighted when DDDM is discussed, it is not always integrated at the ground level. More specifically, current data are stored in various locations and staff does not have easy/immediate access. Additionally, they must often request data from different individuals and/or departments. As noted by Kelly (Female, 25), “When I was first on-boarded . . . I was introduced into our initial CRM database. I recognized that [the former employee in my role] did not update that as often as maybe she should have, so I kind of didn't have a whole lot to pick up on.” This is particularly challenging in a smaller organization with a lot of employee turnover. If data are not documented or easily accessible, it can be more difficult than necessary to learn from both successes and failures. For example, Adam (Male, 32) noted that “if I don't remember [a sales promotion that we tried], I have to text old staff members and people who were here in the past and say, have we tried this, was it successful.” By removing the barriers of individualized, one-sided access to data, less time will be wasted and bigger questions can be addressed. To an extent, the management team did indicate an awareness of this deficiency as they will be shifting to an updated ticketing and CRM system that spans a more significant number of departments, which is a good start.

Implications

As previously addressed, Brynjolfsson et al. (2011) asserted that firms that are data-driven in their decision-making process have greater chances of success (e.g., higher return on assets, return on equity, asset utilization, and market value). That notion, combined with the parallel growth of DDDM in sport business operations (Davenport, 2014), led to the development of this work. We found that, regardless of the size and training of the staff, all three primary themes support the work of others in the study of DDDM.

Use of Data Analytics, with the subthemes of Strategic and Tactical, closely relates to Sleep et al.'s (2019) work, noting that organizations that have limitations (e.g., time and manpower) reside on the lower end of the hierarchy of data-oriented decision-making model. With the HIPPO, in this case, being the two highest ranking staff members, it was clear that the staff deferred to these individuals for strategic decisions, but was provided with the necessary access to data to make day-to-day tactical decisions at the ground level. Although general administrative support was provided, the Application of Data Analytics was not as proactive as it could have been for either the in-office assessments or the findings from the academic partnership. This may stem from the fact that the project was initiated by the academic partners; however, in lieu of observing New Markets, as it was determined would have been preferable, the study provided Confirmation of current consumers. This could certainly be beneficial, as it does provide a foundation to foster a mutually beneficial relationship with the organization's consumers (Kumar et al., 2013), but it did not provide the insight that the organization was hoping to receive. Finally, Data Sharing, or the manner in which individuals could access the necessary data, was noted as both a strength and weakness. Effective data sharing is vital, given the sheer amount of data that passes through an organization (O'Reilly & Knight, 2007); however, to do so in an efficient manner requires both coordination and collaboration. Although the organization appears to be moving towards more Open Channels for greater access, usability, and collaboration (more integrated CRM system), much of their data is still accessed through Closed Channels, or single-source documents. By investing the time and resources to create a streamlined integrated marketing information system, they will find that this will enhance both collaborations and workflow, simultaneously decreasing duplications and possible errors in data.

In addition to the findings that address this organization's use of DDDM, a number of other conclusions arose. Although not singularly focused on the use of DDDM, these tangential implications will be addressed below and primarily focus on both the value in and challenges with academic partnerships. Given the nature of this study, this commentary seeks to strengthen the work of both academics and practitioners moving forward.

Tangential Implications

Although there are certainly studies regarding the value of DDDM in sport (e.g., Sung & Mills, 2018; Yan et al., 2019), this often comes from the academic perspective, with limited anecdotal evidence regarding the value to the organization itself. As we try to break down academic boundaries, it is essential to understand the perspective of the practitioner when pursuing more impactful practical implications. While the work may benefit the academy, does it do what it is intended to do for the organization itself?

Or is it simply research for research's sake?

Given the scope of this study, the findings are specific to this particular organization; however, a number of practical implications arise from this assessment. Most importantly, DDDM is prevalent in all types of organizations—even if it is simply considering latent observational data—but how it is used will vary based on expertise, access, and intentions.

In addition to these overarching themes, we found that there is a gap that needs to be addressed between what is happening in academic research (e.g., confirmation) and what practitioners expect/want out of “research” (e.g., consulting on future trends/markets). Although not inherently problematic, it does lead to many additional questions regarding partnerships and how the needs of all parties can be best served. More specifically, this work highlighted that this organization and staff does not have all of the resources to ask more profound questions and, for example, learn how to reach a new fan/consumer base. Additionally, while they are very happy with their current consumers, there is a concern that they are aging out of the market and there will be difficulties in reaching younger markets. They have recognized that they do not have the expertise to assess; however, this did not come to the forefront until this follow-up study and, unfortunately, not until long after they had the opportunity to alter the methods used for the quantitative assessment. Whereas academic partnerships lead to additional benefits for both the academic (e.g., moving the partnership beyond research and into the classroom) and sport entity (e.g., significantly lower cost/no cost versus high cost of external contractors), there are certainly items that need to be considered. Therefore, as will be addressed below, there are significant practical implications for all parties involved.

Limitations and Future Research

DDDM is widely seen as a valuable practice; however, this study only assessed its usage in developing business strategies for one MiLB organization. Additionally, given the size of the organization, the number of interviews, and the unique characteristics of both MiLB and this particular organization, the current study is quite limited in scope. Therefore, while the themes were easily identified and redundant by the end of the interviews, there are still limitations inherent to the study's method. As a result, we recommend expanding this work through additional assessments with other organizations, particularly those with limited resources/tighter budgets, as well as additional qualitative assessments of academic data usage after the scholars have reported their findings. We recognize that this work is limited, but it opens the door for discussions regarding the general use and value of DDDM and, more specifically, the nuances regarding academic research partnerships with industry professionals. Future research will shed light on the possible mutually beneficial relationship between the sport organizations and academic institutions, which in turn promotes industry-academic partnerships in the area of DDDM.

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