

The Economic and Social Effects of Legalized Sports Gambling

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Abstract

This research aims to provide a two-pronged look at the implementation of legalized sports gambling across the United States. After a law restricting sports betting was struck down in 2018, all states became free to decide whether they wanted to allow people within their borders to bet on sports. This work focuses on the economic and social effects of legalized sports gambling. Given the recency of the decision, little research on legalized sports betting has been done in the U.S. outside of the state of Nevada. Economic effects are analyzed using handle (amount wagered) figures reported by states through various lenses, including methods of sports betting permitted, population, location of the state, and other factors that could affect economic success. The examination of social effects aims to shed light on how sports gambling is being viewed by college students, namely whether it is supported, viewed as “immoral,” stigmatized, if there should be restriction, what kinds of betting should be permitted, and whether sports betting is an overall benefit or harm to society. Social data was gathered through the distribution of a survey to college students throughout the U.S. Although legalized sports gambling provides consistent positive economic returns, the most important determinant of economic success seems to result from the allowance of mobile sports betting. Socially, respondents noted that they consider betting on sports “normal” but that it should not necessarily be a part of the sporting experience. Whether college

students consider legalized sports gambling an overall benefit or harm to society is unclear. Finally, their views of sports betting as a “stigma” haven’t changed as states legalize the practice.

Dedication

Dedicated to the students of The Ohio State University and to sports gamblers everywhere.

Acknowledgments

I would like to first thank Dr. John Draper for all the time invested in me throughout this project, from idea generation to workshopping. I would also like to thank Dr. Andrea Prud'homme for helping me wrestle the entire project and stay on schedule.

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Chapter 1. Introduction

In 1992, U.S. Congress passed the Professional and Amateur Sports Protection Act (PASPA), which prohibited sports gambling throughout the United States. While sports pools in Nevada and sports lotteries in Oregon, Delaware, and Montana were grandfathered in and thus able to continue operations, the governments of other states were unable to capitalize on the potential windfall of revenue that can come from sports gambling. New Jersey originally sought to gain an additional exemption from PASPA when it was enacted, but they failed to obtain it. However, this desire laid the groundwork for legal challenges to come. New Jersey first made an attempt to overturn PASPA in 2009 when state Senator Raymond Lesniak challenged in federal court that the law was unfairly discriminatory by allowing only certain states to offer sports betting. In 2011, voters in New Jersey opted to amend their state constitution to permit sports gambling even while it remained illegal on the federal level. The following year the state legislature passed a bill allowing casinos in New Jersey to offer wagering on sports. Over the next couple of years cases went back and forth between the state of New Jersey and then-Governor Chris Christie, the National Collegiate Athletic Association (NCAA) and major professional sports leagues, and other bodies. Then, in June 2017, the Supreme Court of the United States accepted the case. At this point, the case consisted of the NCAA challenging that New Jersey's repealing of a state law that banned sports

gambling was in violation of PASPA. Several months later, in May 2018, the Supreme Court ruled 7-2 that parts of PASPA were unconstitutional and 6-3 that PASPA as a whole was unconstitutional. The basis of their decision was that it took away power from the states. As a result of their decision, states became able to offer sports gambling on a case by case basis, unrestrained by federal law. Since that point and through March 2020, 21 states have legalized sports gambling within their boundaries; several more states are also considering the legalization of the practice. A common theme of the decision processes across states is a balancing of economic and social interests. Sports gambling offers a new potential source of revenue on which many states can capitalize, although it can come at a social cost. As sports gambling has long been illegal and has often been stigmatized as a vice, it is rejected by parts of the population in the United States on moral grounds. This research intends to investigate the economic and societal effects of the legalization of sports gambling.

While it is certainly true that the legalization of sports gambling increases revenue in states where it is allowed, the degree to which it succeeds is up for some debate. This research seeks to track existing economic data and to identify factors that explain the financial success of sports gambling in certain states. On the social side of the matter, public opinion towards gambling seems to be changing. The Victorian Responsible Gambling Foundation in Australia has completed research that has shown younger portions of the population are more accepting of sports gambling. Additionally, a 2017 survey from the Washington Post revealed that 55% of Americans approved of legalizing sports gambling (Maese). Due to the recentness of the expansion of sports gambling laws

in the United States, there is a dearth of information on the attitudes of gambling especially after it has been made legal. This research will also examine how college students in the United States view sports gambling particularly with regards to its legal status in their respective state. This research aims to examine a few questions: what are the underlying causes of successful implementation of legalized sports gambling from an economic perspective?; How do college students view sports gambling?; How can their views be used to determine what the acceptance of sports gambling may be? These answers can provide information about the nature of sports gambling in the U.S. to lawmakers and citizens across the United States. This knowledge can serve to adjust the expectations of legalized sports gambling as well as a basis for tracking societal attitudes to best please the constituents.

Chapter 2. Literature Review

Geography of Legalized Sports Betting in the U.S.

As of March 2020, 21 states had legalized sports betting within their boundaries: Arkansas, Colorado, Delaware, Illinois, Indiana, Iowa, Michigan, Mississippi, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Tennessee, Washington, and West Virginia. Washington D.C., although not a state, has also legalized the practice. Self-produced Figure 1 illustrates the geographical spread of states where sports gambling has been legalized. States in dark red indicate where sports gambling is operational, while sports gambling is merely legal but not yet fully operational in the lighter-colored states. “Operational” refers to a state’s ability to accept and pay out wagers on sporting events. States where sports betting is non-operational have the laws in place that permit sports betting, but not the facilities to handle any business or financial transactions.

Operational

- No
- Yes

Map based on Longitude (generated) and Latitude (generated). Color shows details about Operational. Details are shown for State. The data is filtered on Legal, which keeps Yes.

more to why the practice does not work through a societal lens, which is better explained later.

While the 21 states and one district listed above have legalized sports gambling within their confines, not all of them have initiated the practice in all possible forms yet. Gambling commissions in states like Colorado and North Carolina are working to develop the process for their citizens to bet on sports. States can choose to operate with any combination of physical and mobile sportsbooks. Physical options refer to any brick-and-mortar, in-person, establishment while mobile betting allows players to wager from mobile devices provided they can prove that they are within the boundaries of a given state via geolocation. Of the sixteen states where sports betting is operational, ten states permit mobile sports betting, while the remaining six only allow wagering to occur at physical sportsbooks.

Economics of Legalized Gambling

Kearney (2005) reviewed the function of government in the legalized gambling sector while also addressing a few topics relevant to most analyses of how the government should interact with this sector. The research also examined evidence that reveals where the economic benefits are distributed in the three biggest parts of the gambling industry: commercial casinos, state lotteries, and American Indian casinos. The growth of the internet gambling industry was mentioned as well. In the paper's review of preexisting research, relevant questions and policy issues that were considered not adequately addressed were discussed. The author touched on policy issues like the cost

and impact of gambling advertising, and how to regulate gambling conducted over the internet. The research ends by asking the ‘ultimate policy question:’ to what extent does the increase in public revenue offset the associated social costs. This study provides previous economic outcomes that can be compared to what is discovered from the legalization of sports gambling. Although the focus of the research was general forms of legalized gambling, conclusions can still be applied to the sports gambling industry. The variation in gambling legislation from state to state affects who benefits most from legalized sports gambling. Finding ways to predict who will ‘win’ and by how much they will ‘win’ can be vital when trying to garner support for legalization. While winning is nice, it is important to consider the social costs as well. This research aims to tackle how to produce positive economic gains, while considering what social opinions or preferences may be.

Paul and Weinbach (2010) studied the National Basketball Association (NBA) and National Hockey League (NHL) to determine what factors affected the volume of betting from game-to-game. To collect actual data on betting volume, the authors collected figures from three sportsbooks during the 2008-2009 seasons. A regression model was also created to help identify what factors had the greatest influence on betting volume. The independent variables of this regression included the quality of teams, the television network that provided coverage of the game, temporal aspects like day of the week, time of day, month of the season, and other factors. The results reveal that key fan-attributes like the quality of teams and the availability of television coverage appear in both betting behavior and fan behavior. These key attributes are shown to have a positive

significant effect on betting volume. These findings suggest that the decision to wager on a sporting event is strongly dependent on the consumption of the sport. However, pure investment-based gambling (i.e. gambling for financial gain) appears to be the exception to this rule. This study allows a look at some potential motivations behind sports betting, and potentially how it transfers into economic effects as well. Knowledge of these factors can help sports leagues and betting operators to maximize their revenues. Encouraging networks to continue broadcasting games with the best teams and increasing access to the games can help increase gambling volume, and in turn, gambling revenues.

Humphreys, Paul, and Weinbach (2013) found that otherwise rational individuals choose to gamble to obtain consumption benefits even though the expected financial return of their wager is negative. In this context, consumption benefits represent the non-monetary increase in utility individuals gain by gambling, e.g. the placement of a wager on a game can make it more exciting to watch. To arrive at this central finding, the authors analyzed the determinants of bet volume and dollars bet on NCAA basketball games from three online sports books to test the predictions of this model. Much like the preceding research, they found that betting action depends on television coverage of the game, the quality of the teams, and how competitive the game is expected to be. Their results support the idea that sports gambling is motivated more by consumption benefits than financial gain. The gambling behavior seen in this study suggests that gamblers do not seek to maximize their wealth, preferring instead to obtain the consumption benefits also seen in general sports fans. This study provides a view on why people bet. The bettors seem to disregard their own economic gain, which could prove fruitful for the

economic gains of a state. States and gambling commissions can utilize these results by encouraging sports betting operators to build their facilities to certain specifications that would enhance the experience of potential gamblers and make a sportsbook a go-to entertainment option.

Koning and Van Velzen (2009) examined a new type of betting market, which is referred to as betting exchanges. In betting exchanges, betting occurs between individual gamblers, while the entity that organizes the market does not carry any of the risk that is dependent on the result of the event. The authors provided an analysis of these novel markets by conducting a SWOT-analysis. In this analysis, the researchers also mentioned relevant issues such as competitiveness and the survival of betting exchanges. They proffer that the success of betting exchanges over the long run is primarily a factor of liquidity. Knowing the operations of a novel market in the Netherlands could allow interesting parallels to be drawn between the operations being instituted across the United States. The majority of sports betting occurs in traditional sportsbooks, where the book is liable for most risk. Betting exchanges present an alternate option for sports betting operators to consider when entering the sports gambling market. Although the market organizer may be able to collect revenue from transactions that occur in the exchanges, betting exchanges may not have the potential to have a major economic impact. The novelty of the experience may make it too foreign for casual gamblers to get involved in, while more traditional sports bettors may prefer markets they are accustomed to.

Borghesi (2008) investigated if point-shaving was more widespread in NCAA basketball than professional sports by comparing the results of both bets and games.

Point-shaving occurs when players or coaches act in a manner that ensures a team does not cover the spread. The research suggests that unique trends once thought to be signs of point-shaving appear across all sports and are thus unlikely to be a result of corruption. Furthermore, he suggested anomalies in the distributions of bet and game outcomes may be explained by line shading, a practice used to encourage wagering on a particular side of a bet by adjusting the odds on said bet. This could serve as an interesting counterbalance to survey data if it suggests that people believe that corruption ordered by the gambling industry is rather prevalent in competition. Line shading can affect the economic results experienced by sportsbooks, and thus states. Successful line shading can increase the number of individuals who choose to wager on a game. However, the financial success is dependent on the outcome of the contest. A combination of successful line shading and an outcome favorable to a sportsbook can positively increase revenues over what would be expected from a normal line; on the other hand, a negative result could produce revenues below expectations. If states license sports betting opportunities to sportsbooks that have a system which produces consistent positive economic effects from line-shading, they can ensure their economic benefit is higher than what they could typically expect.

Internet-based Gambling

LaBrie et al. (2007) examined the rapid growth of internet gambling and the concern about its potential ramifications on public health. Their research involved an

eight-month prospective longitudinal study of actual Internet sports gambling behavior. The study tracked 40,499 individuals who subscribed to an online sports gambling service in February 2005. The researchers collected data on fixed-odds bets, live action bets, and the event outcomes for the tracked individuals. To measure gambling involvement of the individuals, the researchers also recorded data on the money bet, money won, and number of bets per day. The median betting behavior of the 39,719 fixed-odds bettors was to place 2.5 bets of €4 (approximately \$5.30 US) every fourth day during the median 4 months from first to last bet. Bettors who bet in this manner averaged a 29% loss. Of the almost 25,000 live-action bettors, the median bettor made just under three bets of €4 every four days during a six-week period. This betting pattern resulted in a median loss of 18%. This research provides insight into what the results of mobile sports betting may be for states. As mobile betting capabilities increase access to gambling opportunities, these results support the idea that allowing mobile sports betting increases the likelihood of positive economic returns.

Woolley (2003) wrote that, prior to his work, online gambling was historically referred to by using homogenizing terms such as “interactive gambling” or “e-gambling.” This work explored various forms of participation gambling done via the internet. Through this exploration, the research sought to more successfully identify the factors that organize distinct groups of online gamblers and the unique experience of online betting. The research also analyzes how different commercial gambling products can produce profitable business structures. Using online gambling and gaming in Australia as a frame of reference, the social and institutional factors that restrict different methods of

online betting are also discussed. Three surveys were virtually distributed to discern information about online betting and sports gambling participation. The responses from the surveys establish a framework for the discussion of the various ways to gamble on racing and sports in Australia via the internet. Although this article also focuses on Australian gambling practices, the more entrenched nature of sports betting in Australia could provide some guidelines for implementing something similar in the United States.

Griffiths et al. (2010) realized that there was relatively little previous research done on online poker even though participation rates for online poker have increased faster than other forms of online gambling. This research used an online survey distributed to 422 online poker players to investigate determinants of online poker success and problem gambling. Their work discovered that experience playing online poker was positively correlated with the number of days per year playing online poker, duration of online playing sessions, and financial success. However, length of time playing did not correlate with either the score on Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) problem gambling criteria or perceived skill. The DSM is the standard when making psychiatric diagnoses like gambling disorders. Gambling disorder, also referred to as 'pathological gambling' or 'problem gambling,' is defined by the DSM as "persistent and recurrent problematic gambling behavior leading to clinically significant impairment or distress." Gambling disorder is indicated by the exhibition of behaviors like the need to gamble with increasing amounts of money in order to achieve the desired excitement, repeated unsuccessful efforts to control or stop gambling, or the jeopardization or loss of a significant relationship, job, or educational

opportunity because of gambling. Financial success was more common in players who were disciplined and avoided spending over their monthly gambling budget, played at higher stake levels, did not over-estimate the skill involved in poker, and perceived themselves to be more skillful. Further examination revealed predictors of problem gambling. A multiple regression revealed that problem online poker players were more likely to change their gender of their “player” when playing online, were undisciplined and spent over their allocated budget, and played more frequently for longer periods of time. Even though there is some skill involved in poker, skill was not a predictor for problem gambling. These results were discussed along with implications from the findings for key stakeholders (i.e., the players, gaming industry, policy makers and researchers). The findings reveal what players did and did not like about online poker. Players enjoyed the convenience of online gambling, as well as it’s potential to be a source of income. Players reported that they did not enjoy losing money, and the disruption of the value of money, namely that the invisible nature of the currency prevented them from realizing how much money they were losing. These aspects are similar between online poker and mobile sports gambling. Allowing mobile sports betting could increase the number of potential bettors but could also produce negative social aspects for players. Balancing these two sides is an important consideration when determining if mobile sports betting should be allowed in lockstep with physical sports betting. The study’s profile of what predicts success or problem gambling in bettors is also key in deciding how to treat different types of individuals who decide to bet on sports.

Lee, Chung, and Bernard (2013) found that new conflicts have arisen between researchers and policymakers in South Korea as a result of the increase in the popularity of Internet gambling. Those opposed to Internet gambling often cite the negative impacts of problem gambling, while supporters of Internet gambling consider online wagering to be a form of entertainment that is comparatively innocuous and convenient. Coincidentally, both supporters and detractors use the increased rates of gambling to support their beliefs. Opponents claim that online wagering allows harmful addictions to develop, while supporters claim that the increased betting indicates that participants are very interested in this form of betting. The authors analyze how the increased amount of betting is related to motivation to bet and consequences from betting. To gather data about gamblers, the authors took a sample of participants from an online betting service in South Korea. Their findings showed that positive consequences arise from intrinsic gambling motivations, such as the desire for excitement, while negative consequences result from extrinsic gambling motivations, such as the pursuit of money. This study is useful because of its examination of the intersection between the ideologies of competing groups that also contest the fight over the legal status of sports gambling. There are two broad sides that surround the implementation, so it is useful to have this comparison. Increasing access to sports betting by allowing individuals to remotely wager via the Internet can prove either side's point; gambling revenues will increase, but gamblers may be more imperiled. An understanding of what motivates individuals to bet may be revealed in this research's survey to determine if mobile gambling will have positive or negative consequences.

Wood and Williams (2011) collected survey data from 1,954 Internet gamblers and 5,967 non-Internet gamblers in two stages and used a weighted approach to data analysis to properly surmount methodology issues present in earlier studies. Using this data, the authors examined factors such as: the game-play patterns of Internet gamblers, the comparative gambling expenditures of Internet versus land-based gamblers, and the comparative rate of problem gambling among Internet versus land-based gamblers. They found that internet gamblers frequently also gamble at physical locations, spend significantly more on gambling per month, and have rates of problem gambling three or four times higher than rates seen in people who solely gamble at physical locations. The researchers ended their paper by examining pertinent repercussions of their findings on policy and theory going forward. The authors acknowledge how aspects of internet gambling like increased convenience, the use of virtual money, and the comfort of betting at home may increase the rates of problem gambling. They also report that a majority of Internet gamblers with gambling problems preferred in-person treatment for problem gambling to remote treatment. Given the findings that mobile gambling may increase problem gambling, it is important to know how to best treat any new issues. The survey in this research asks about requiring responsible betting measures, one of which could be in-home visits to mobile bettors. Although the gambling discussed is general in scope, it provides good information about longitudinal attitudes toward gambling.

LaBrie and Shaffer (2010) analyzed different sports gambling trends in individuals that allow the separation of sports bettors with self-reported gambling-related problems from those who do not have such problems. The researchers were able to

recognize gambling patterns that could result in gambling disorders because of the ability to track online gambling patterns. The development of pattern recognition can aid in the development of interventions to help individuals with gambling disorders become aware of their risky behavior and stem the development of future gambling issues. Recognizing the path towards problem betting can help sports betting operators implement effective problem gambling procedures to ensure the health and safety of bettors. It is also key to know how these interventions are supported by the general population.

Deans et al. (2016) discovered that betting products are becoming increasingly detrimental to individuals, families, and communities, thus meriting consideration as a public health topic of great concern. Although earlier research has expressed concerns about virtual betting, limited research has attempted to explain how factors in different betting locations (both online and land-based) may impact gambling and the related risk profiles seen in young male gamblers. The researchers conducted semi-structured interviews with fifty Australian male sports bettors (20–37 years old) over the course of a year (April 2015 – April 2016). With the results from the interviews, they examined how betting environments both physical and online may encourage bettors to take on more risk. The authors identified several factors, both situational and structural, that encouraged young males to wager in higher risk games. Internet gambling was identified as particularly dangerous because of the increased ease of betting via phone and computer, the ability to obtain accounts and access promotions offered by different online gambling services, and the intangibility of money negatively affecting risk perception. Virtual transactions remove the pain of physically losing money, which leads to bettors

accepting propositions with higher risk than they normally would. Bettors in physical gambling locations were impacted by peer pressure and the interconnectedness of sports and betting. The availability and consumption of alcohol in pubs, bars, and similar establishments that also offer gambling caused individuals to both wager more than usual and wager on sports not typically wagered on. Physical locations also permitted individuals to participate in other gambling activities that were not related to sports. The research identified several factors in physical and virtual gambling environments that combine to promote risk-affine behavior in young males. Exploration of the factors that result in gambling-related harm allows the authors to offer and support initiatives that reduce the incidence of problem gambling. Although the sample is small, it provides a frame of reference for the attitudes of young men towards sports gambling in online environments. Knowing how young people respond to various inputs in their environment can allow states to permit types of sports gambling that they consider acceptable. On the other hand, knowing what makes young people more likely to wager can enable states to produce restrictions on what forms of sports gambling are permitted to decrease the chances of young adults developing lifelong gambling issues.

Gambling and Young Adults

Petry and Weinstock (2007) analyzed the connection between the frequency of Internet gambling and the occurrence of problem gambling and mental health status in college students. The researchers distributed the South Oaks Gambling Screen and

General Health Questionnaire to 1,356 undergraduates. From this sample, 23% self-reported any degree of previous online gambling, and a further 6.3% answered that they gambled online weekly. Of the respondents who gambled online regularly, about three-fifths (61.6%) were found to be pathological gamblers, while only a quarter (23.9%) of infrequent Internet gamblers and 5.0% of non-Internet gamblers were found to be pathological gamblers. After adjusting for demographic differences and pathological gambling, regularity of online gambling was found to have a strong association with poor mental and physical health. These data call for prevention and treatment efforts of Internet gambling for students. The focus of this study also suggests that the increased proclivity of college students towards gambling may skew the results of a study that doesn't include the entire population of a state or nation. A survey distributed to college students could reveal the preferred and effective ways to treat the problems that appear in college students in conjunction with mobile sports betting.

Gordon, Gurrieri, and Chapman (2015) conducted research that provides awareness of the 'lifestyle consumption community' as seen in sports betting in Australia. Närvänen et al. (2013) defines a lifestyle consumption community as a community that revolves around a lifestyle interest instead of a single brand, or deviant or marginalized subculture. Research conducted shortly before this paper identified the utility of socio-cultural approaches for understanding gambling, which allowed research to extend outside of perspective based solely on psychology. Prior to this paper, the concept of "problem gambling" has mostly focused on pathological gamblers. Researchers have debated viewing gambling in a different frame of reference. This study

used friendship group interviews with adults thirty and younger who engaged in sports betting, but were not considered pathological gamblers, to approach gambling with an interpretivist angle. Friendship groups were created by recruiting one 'lead' participant, who in turn recruited friends who also met the criteria to be studied. The results allowed researchers to examine lifestyle consumption communities with respect to their locus of control, power dynamics, purpose for existing, marketing potential, time span, structure, and social position. This research has implications for marketing management and consumer culture theory, such as how impulses for gambling or other behaviors spread among young adults. This study was useful because it focused on the attitudes and actions of college-aged individuals in Australia. The findings may have relevance depending on how cultural attributes transfer to Americans in the same age range.

Hing, Russell, Vitartas, and Lamont (2016) found that the volume of wagers on sports is growing exponentially, and that sports betting is being increasingly marketed, often with great success, especially towards young adult males. Perhaps related, they found that gambling problems in young adult males are increasing in frequency as well. As a result, the authors put a premium on understanding what puts sports bettors more at risk of developing gambling problems. In turn, their research could be influential in developing the appropriate structure and aim of public health and treatment initiatives. This research sought to determine what risk factors lead to problem gambling behaviors in sports bettors, especially factors that had roots in demographic, behavioral, and normative differences. To identify the appropriate factors, researchers surveyed over 600 sports bettors in Australia via internet, phone, and retail betting channels. Their findings

suggested that sports bettors who were young, male, single, educated, and employed full-time or were a full-time student were more prone to high risk gambling. Other factors like increased number of wagers, increased spending on wagers, increased participation in different gambling methods, and those with more impulsive reaction to wager opportunities, such as in-play live action betting were positively correlated with high risk gambling. Additionally, an increased risk for gambling related issues was seen with normative influences resulting from media advertising and individuals with close relationships to those studied. The results of this study can provide value to a variety of intervention, protection, and treatment initiatives, particularly those aimed at young male adults and adolescents that may stem the flow of negative effects resulting from sports gambling. Since the survey population for the following study includes young males, there may be higher rates of sports gambling acceptance than may be seen in a survey of the general population. In addition to the effects on survey response, valuable information is provided on how to treat gambling problems that may arise from increased access to gambling in the U.S. Young adults may have defined expectations about how sports gambling is marketed and how gambling problems arising from sports betting are treated that should be explored.

Martin and Nelson (2014) discovered that fantasy sports participants are more likely to engage in other forms of sports betting than non-fantasy participants; however, the authors reported that no previously published studies examined whether there is a relationship between fantasy sports participation and gambling-related problems. Their study examined whether fantasy sports participation is associated with gambling-related

problems among college students. The authors assessed fantasy sports participation and endorsement of Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) gambling disorder (GD) criteria among a large convenience sample (N = 1,556) of college students via an online health survey. It was found that 11.5% of respondents participated in fantasy sports in the past year, the majority of which were males. Logistic regression analyses indicated that males who play fantasy sports for money and females who play fantasy sports (for money or not) were more likely to experience gambling-related problems. This study also provides solid information about the sports gambling practices of young males, and to a lesser extent of young females. Since young males are more likely to play fantasy sports, they are also more likely to bet on sports in another form. Understanding the gambling tendencies of young males can be crucial in determining how to best develop a system that caters to their preferences without leading them toward gambling disorders. Likewise, it can be important to discover the best ways to treat any gambling disorders in these young males since they represent the largest potential market of sports bettors.

Martin, Nelson, and Gallucci (2016) found that college students have higher rates of problem gambling than most other sections of the population, as well as the general population. Although Division I (D1) athletes often have more at risk than typical students, if and when they gamble (e.g., the potential to lose their athletic eligibility and scholarships), little previous research has examined their gambling patterns, especially with regards to wagering on fantasy sports. The authors studied the rates of past-year gambling, problems arising from gambling, and wagering on fantasy sports among 692

students at a university in the southwestern United States. D1 athletes accounted for about 30% of participants in the sample. To perform a better comparison of gambling behavior by athlete status, the research segmented students into three categories: D1 athletes, club/intramural/recreational (CIR) athletes, and non-athletes (NAs). Males in the sample reported higher rates of gambling in the past year, involvement in fantasy sports, wagering on fantasy sports, and gambling-related problems than females. Within the male portion of the sample, researchers discovered that CIR athletes gambled in the past year and participated in fantasy sports most frequently, while D1 athletes had the second highest rates of both activities, while NAs participated the least. The research did not discover variances in rates of fantasy sport gambling and gambling problems originating from gambling done in the past year rooted in the athletic status of either males or females. This study also provided good information on the gambling habits of college students in general, although the scope of the actual type of gambling is still a bit general. As their research acknowledges that college students gamble more frequently than the general population, they may be more predisposed to supporting legalized sports gambling, especially if male. As the survey in this research is distributed to college students, it would not be surprising to see respondents express widespread support for legalized sports gambling.

Engwall, Hunter, and Steinberg (2004) examined the prevalence of problem gambling and its relationship to other risk-taking behaviors in college students. The authors surveyed 1,350 undergraduates across the four campuses of Connecticut State University (CSU) during fall 2000. Using on a modified version of the South Oaks

Gambling Screen, a widely used screening instrument, they found that 18% of the men and 4% of the women reported their gambling had led to at least three negative life consequences (e.g., felt guilty, gambled more than intended, etc.), commonly defined as problem gambling. Most students gambled recreationally but experienced few of the negative consequences reported by problem gamblers. Although this study is comparatively older, it can provide a basic baseline as to how the characteristics of undergraduate students have changed over time. This study examined correlations with legal forms of gambling (e.g. lottery, playing cards), as well as illegal forms of gambling, notably sports betting (which was illegal at the time, but less so now). Gambling rates reported in the research revealed that the percentage of students who illegally bet on sports was higher than legal alternatives like bingo or similar activities like investing in the stock market. Among males, rates of sports gambling were higher than rates of betting in casinos or on slots. This suggests that college students may already consider sports betting to be normal since they chose to partake in it while still illegal. Another feature of this study is that it focuses more on the relationship between gambling and actual behaviors, and not purely just attitudes.

Lesieur et al. (1991) surveyed students from six colleges and universities in New York, New Jersey, Oklahoma, Texas, and Nevada, to investigate their betting practices and frequency of problem gambling. Increased rates of gambling were found in northeast states and Nevada, while gambling rates were lower among students in Oklahoma and Texas. Across all states and universities, gambling rates among males and females were found to be over 90% and 82%, respectively. About one-third of all males reported

gambling at least once a week, while only 15% of females reported gambling at a similar rate. State-specific rates of pathological gambling were between 4-8%. Pathological gambling was more frequently observed in males, Hispanics, Asians, Italian Americans, students with an arrest history beyond traffic incidents, children of parents with gambling problems, and students who abuse alcohol and other drugs. On the other hand, pathological gambling was weakly correlated with other factors like age, religion, school performance as measured by grade point average, family income, and drug use of parents. No correlation was found between pathological gambling and academic year in college, marital status, and the occupation or alcohol usage of parents. These findings allowed the researchers to consider the effect of these associations on future research and social policy. One may expect these trends to hold true when the gambling examined is more specifically focused on sports. If college students in a previous generation considered gambling to be a normal practice, that attitude could be passed down and expressed in subsequent generations. However, the survey does not focus on sports gambling, so reported gambling rates and acceptance may not accurately reflect true attitudes.

Gambling's Effects on the Sporting Experience

Debnath et al. (2003) analyzed data from 52 online in-game sports betting markets. In-game betting markets allow gamblers to continuously wager throughout an active contest. The studied markets were comprised of 34 soccer games from the 2002 World Cup and eighteen basketball games from the 2002 USA NBA playoffs. The

research demonstrated that prices generally move toward the true result over time, and that price dynamics in the markets and game events have a strong relationship, aligning with efficient market theory assumptions. The authors examined qualitative differences between the two sports and their games, such as how the increasing scoring and uncertainty of basketball contests affects betting patterns when compared to soccer matches. This research offers valuable insight into in-game betting. Whereas traditional sports betting occurs before the event starts, in-game betting leaves less time for analyzing any potential bets. The high-stress nature of major events like the World Cup or NBA playoffs can impair the decision-making process of gamblers as well. The combination of reduced time and high stress can lead gamblers to make ill-informed wagers that can affect the way they experience the sport.

Hing, Lamont, Vitartas, & Fink (2015) explored sports bettors' responses to sports-embedded gambling promotions, and whether this varies with the severity of problem gambling. Promotions are considered embedded if they are included in the broadcast of an event, in this case while play is occurring rather than an advertisement during a commercial break. The researchers conducted surveys with 544 sports bettors in Australia with gambling problems of various degrees of severity as measured by the Problem Gambling Severity Index (PGSI). The PGSI is based on research that indicates the common symptoms and ramifications of problem gambling, and in turn standardizes the measurement of at-risk behavior in problem gambling. Their findings suggest that individuals with gambling problems have the highest approval of these promotions. Furthermore, problem gamblers felt more encouraged and influenced to gamble as a

result of these promotions than at-risk gamblers and gamblers without problems. Problem gamblers display attributes of pathological gambling in greater quantity and/or severity than at-risk gamblers do. They also revealed that context-dependent factors like particular types of wagering and promotion appeals had a greater impact on problem gamblers' decision to bet on sports. Since the amount of money wagered on sports, frequency of gambling advertising, and incidence of individuals with sports betting problems are all increasing, the authors recommended additional research to understand how sports-embedded gambling promotions impact gambling consumption and problem gambling. This research is also crucial in deciding on policy initiatives, especially when considering the controversy surrounding sports-embedded advertising that has triggered modifications to broadcasting codes of practice in Australia. The use of sports-embedded gambling promotions directly impacts the sporting experience of Australian viewers. American fans and viewers do not experience the same levels of interaction between gambling and sports, so it is possible that said promotions would not be as desired by or effective on individuals watching the game.

Hing, Lamont, Vitartas, and Fink (2014) found that the promotion of sports betting during televised events prompted concern from the general community, media, and government in Australia. Promotion of sports betting includes the logos of betting operators, signage, websites, commentary, and betting odds. Although the frequency of betting exposure on television is high, little research prior to this focused on the interaction of televised gambling promotions with gambling behavior, especially in those with gambling issues. This study explored if purposeful wagering on sports could be

forecasted by measuring exposure and attitude to gambling promotions during televised sporting events. Taking another step, they also examined if this relationship varied with problem gambling severity. To facilitate this research, one thousand adult residents of Queensland, Australia were surveyed. The analysis found that increased severity of problem gambling, a history of wagering on sports, more frequent exposure to televised promotions, and more positive attitudes towards the promotions were the most significant predictors of higher intentions to bet on sports. Exposure to sports betting promotions was measured by how often the survey respondents watched televised sporting events. The findings suggested that problem gamblers are the population segment most likely to be induced to gamble by the embedded promotions because they have the greatest exposure and most favorable disposition to the promotions already. Furthermore, the problem gamblers relayed that the magnitude of their problem sports betting behavior has either stayed level or increased. An effective antidote to the negative effects of televised sports gambling promotions may need to come from public policy makers. This article also places a premium on how to deal with increased access to sports betting, which is helpful when considering how said increase will affect a population. Once again, the inclusion of sports gambling advertising in America may not be acceptable at the same level as what is seen in Australia or other locations where sports gambling is a more openly accepted part of experiencing sports.

Agha and Tyler (2017) utilized multiple exploratory methods to examine why highly identified fans bet against their favorite teams (referred to using the initialism BAFT), as those who BAFT behave in a non-normative manner. Highly identified fans

are individuals who tie their happiness to a team's success, have more positive opinions of their team's future performance, and have a greater willingness to invest time and money into a team, and other traits. The researchers coded qualitative data gathered from 190 survey responses and two focus groups, which revealed some of the driving factors for and against BAFTing. The research found that those who BAFT are not motivated by their fandom. Alternatively, individuals who BAFT while hedging their bets do so because of their fandom. Their motivation arises from a desire to offset a perceived impending emotional loss from their team losing with a potential financial gain. This behavior is branded Hedging Against Future Failure, or HAFFing. By offering the new idea of HAFFing, the researchers provide another dimension to the study of indirect image management tactics. The researches further claim that highly identified fans utilize HAFFing to maintain their mental and psychological health, due to its private, proactive, and transactional nature. Although the implications of this research can primarily be used by those who research self-image management, the results can also help sport managers around the world who are adjusting to sports gambling becoming a more prominent and accepted practice. This provides a look into some of the social attitudes that explain why certain people gamble. The existence of HAFFing indicates that sports gambling can have an impact on the enjoyment gamblers obtain from sports. Given gambling's addictive properties, individuals may not have positive opinions of sports gambling if it affects how they experience the sport.

Chapter 3. Methodology

Measuring Economic Effects

Financial information about sports betting is generally reported using three measures: *handle*, *revenue*, and *hold*. Handle refers to the amount of money wagered by bettors on sporting events. It is generally recorded when the bet is placed, rather than when the event wagered on actually takes place. Revenue is the amount of money kept by the sportsbook out of the total amount wagered; it also can be considered the amount of money ‘won’ by a sportsbook. Hold is a calculation that divides revenue by handle, and thus represents the winning percentage of any given sportsbook. While these three metrics are usually reported by or on behalf of sportsbooks, they do not serve as a perfectly accurate representation of the economic benefit to states. States tax the revenue earned by sportsbooks at different percentages. Most of the economic analysis in this paper was done using reported handle amounts. This decision was made because handle amounts are more consistent across sportsbooks and state lines. Revenue figures, and by extension hold percentages, are affected by a variety of factors, including: the odds or line of any given wager, the amount of money wagered on each side of a bet, and most importantly, the outcome of the game, among other reasons. The effect these factors have on revenue is best exemplified by Rhode Island’s February 2019 data as seen in Table 10. The state itself experienced a loss because 77% of bets on the Super Bowl were placed on

the local New England Patriots, whose victory was detrimental to sports books in the state (Anderson 2019). It is also expected that increases in amount handled will generally result in a related increase in revenue. All financial figures are compiled from official state reports with help from Legal Sports Report. However, not all figures appear in this paper for all states. Due to the lack of financial reporting consistency from state to state, it is difficult to always make exactly consistent comparisons. For example, New York chooses to report only the gross gaming revenue from sports wagering earned by each casino, rather than breaking the report down into handle, revenue, and hold.

Differences in reporting do not represent the only hurdle when trying to analyze economic data. Another change that must be made in order to accurately examine the economic results of sports betting is a seasonal adjustment. The amount of money wagered on sports each year follows a consistent pattern. The total amount wagered on sports is relatively higher in the fall and winter months (football and basketball season) than it is the summer. A look at three years of Nevada sports gambling data from the Nevada Gaming Control Board illustrates the trends in the graph below.

Seasonal Trend of Handle by Sport

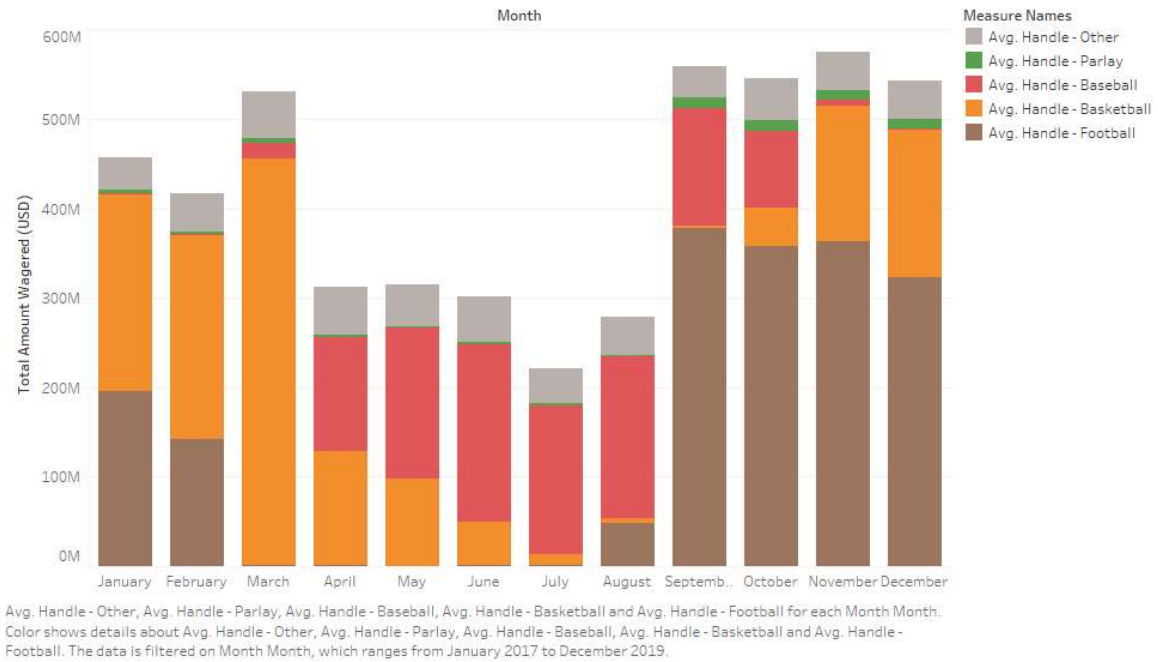


Figure 3 Average Monthly Amount Wagered on Sports in Nevada, by Sport (01/2017 – 12/2019)

To account for this monthly variation that affects the total amount wagered, a multiplicative time series model was created to manipulate all handle figures. The creation of the model began with a collection of five years' worth of monthly sports gambling data from Nevada. Nevada's long history of sports gambling provides a large sample of consistent data with which historical analyses can be performed. Monthly handle figures were calculated by dividing revenue by win percentage, per the calculation mentioned above. A best fit regression line was then calculated to illustrate the general trend of wagering over time. The calculated handle amounts were then divided by trend to create a seasonal factor. All seasonal factors were then averaged to create a seasonal

index for each month. The calculated real handle amounts were then divided by the corresponding seasonal index to produce a deseasonalized handle amount. Handle amounts for all states were deseasonalized to provide a consistent and fair comparison. Using a deseasonalized handle amount negates the effect of month on wager amount while also allowing other investigations into what affects the success of sports gambling implementation. The deseasonalized data from ten states is shown in Figure 4 below. The comparative flatness of the green line (Nevada) at the top of the graph illustrates the effect and success of the deseasonalization.

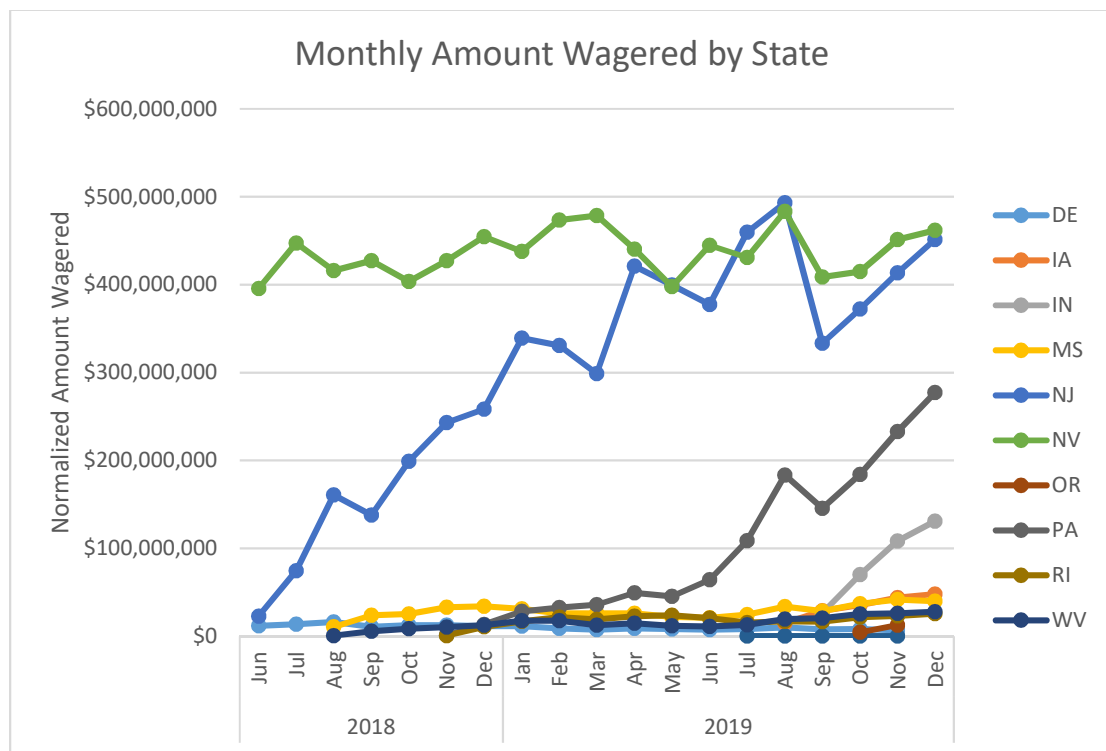


Figure 4 Monthly Amount Wagered on Sports by State, Adjusted for Month (06/2018 – 12/2019)

Survey Methodology

A survey was sent out via email to the desired population of U.S. college students that gathers demographic information about respondents, along with questions that discern their opinions about sports gambling. The results of the survey were analyzed to determine how college students of the United States feel about sports gambling as a potential stigma. This can then be used in the future for comparison over time, against older sections of the population, or in policy making for the future.

Some data exists about the attitudes of the broader society towards sports gambling. Martin, Nelson, and Gallucci (2016) acknowledges that college students gamble more than the general population, male students gamble more than female students, and males participating in organized athletics in college gamble more often than non-athletes. Another survey conducted by Martin and Nelson (2014) stated that 11.5% of college students surveyed participated in fantasy sports, which in some forms can be considered gambling. Lesieur, et al. (1991) examined which types of college students gambled more often. They found that students in Nevada and the northeast gambled more frequently than college students in Oklahoma and Texas. Also of relevance to this study were findings that pathological gambling rates were higher for males, Hispanics, Asians, and Italian-Americans, which could suggest that students in these demographics could have a more accepting view toward sports gambling. Engwall, Hunter, and Steinberg (2004) also found that a majority of students studied gambled. Other studies (e.g. Deans

2016; Gordon 2015; Hing 2016) have touched on the propensity of younger males to generally gamble, especially on sports. Newer research also shows the shift towards broader social acceptance, as seen in Maese and Guskin's 2017 survey results. The anticipated results are that most respondents will have either a neutral or favorable view of sports gambling as a social practice, that sports gambling will not be seen as an immoral practice, and that sports gambling should be legalized in a wider context. This research is significant because it can provide a look at how college students view a historically controversial practice. As states consider enacting sports gambling legislation, it would be helpful for them to consider how college students feel about and are impacted by the practice. Any sports gambling-related legislation will impact the younger parts of the population for a longer period of time, so it can help to know what that market is like. If sports gambling is found to be more accepted (and more people are engaging in it), it could also be reason to increase the treatment available for sports gambling issues in conjunction with the rollout of more sports gambling outlets.

The type of research being proposed in this study to measure the opinions of U.S. college students towards sports gambling is a survey. Only one survey was conducted to gain an idea of how a selection of college students feel about sports gambling at a specific point in time. The sample used for this survey is college students from around the nation. Potential respondents were recruited through contacting professors at The Ohio State University, Duquesne University, the University of Pittsburgh, the University of Pennsylvania, Colorado State University, Skidmore College, and Babson College in the United States and distribution of a letter seeking their participation. To be eligible to

complete the survey, all respondents must be eighteen years of age or older and a college student. By distributing the survey strictly through academic connections, only college students of legal age should have access to the survey. Focusing solely on college students will restrict the age of respondents to the late teens and early twenties.

The hypotheses are: Do college students...

- H_1 : consider betting on sport to be normal?
- H_2 : think gambling should be part of the sporting experience?
- H_3 : view addiction to gambling different than addiction to drugs or alcohol?
- H_4 : not consider gambling immoral?
- H_5 : believe that certain types of sports gambling should be legal?
- H_6 : think that sports betting operators should be required to implement responsible betting measures?
- H_7 : think that a portion of sports betting revenues should be used to treat individual who develop gambling problems?
- H_8 : view sports gambling as an overall benefit or harm to society?
- H_9 : have changing opinions on sports gambling as a stigma as various states have legalized the practice?

Measurements will primarily be taken using Likert scales, yes/no questions, and other qualitative questions. These formats were chosen because participants are asked to match their beliefs to statements given in a prompt, which is easier to express and align with phrases than numbers. The independent variables that are being examined are race,

gender, location, and personal history with gambling. These variables are important because they have been shown in past research to result in different outcomes, such as gambling being more prominent in Caucasians and males. Age is controlled through the distribution method.

The study was distributed online using Qualtrics. This ensured that all data was gathered and stored correctly and efficiently. Access to the survey and data from the survey can only be accessed using dual-factor authentication to ensure only approved people can access it. Data will only be exported to files on private computers for sake of analysis and review. The demographic information provided by respondents is not enough to connect their identity to their answers. Only surface level information like race, gender, and location was collected. Responses only took five to ten minutes, which was the duration of the survey. No further participation was needed. At the conclusion of the research, all individual responses were disposed of, with only summary statistics of the responses being kept for posterity.

As the survey consists of a one-time measurement, internal issues like history, maturation, testing, instrumentation, statistical regression, experimental mortality, selection-maturation interaction, and the John Henry effect will not affect the data. Selection bias may be a consideration, as opinions on key issues may differ depending on whether a student permanently resides in or currently attends school in a state where sports gambling is legal. External biases that may have an impact include nonrepresentative sampling. Nonrepresentative sampling could arise due to the fact that college students with greater interest in sports and/or gambling may be more inclined to

take the survey. By targeting students in states with and without legalized sports gambling, it is hoped that this will provide a sample that better represents the entire population of college students. Instead of merely focusing on The Ohio State University where most students are also from Ohio, contact with students in other states will provide more diverse backgrounds and opinions. This should allow the results of the survey to be generalized to the entire population.

The data gathered from the survey was used to calculate basic summary statistics like the mean opinion of a given question, along with reports detailing what percentage of people agree with a statement. For example, the data may be examined to see if students in Pennsylvania think sports gambling is more “normal” or socially acceptable than students in another location.

Chapter 4. Analysis

Economic Effects

There are a few trends and states on Figure 4 that merit further discussion. First is the rapid success experienced by New Jersey, represented by the rising blue line. Wager amounts in New Jersey were on par with those in Nevada within one year of opening. Two other states that make noticeable strides in the deseasonalized graph are Pennsylvania and Indiana. Analyzing the factors that produced financial success in these states is important in determining best practices for the implementation of legalized sports gambling.

Indiana

Indiana made sports betting both legal and operational in September 2019. However, they did not operationalize mobile sports betting until October 2019. Even though only four months of data was collected, an interesting trend appears. After mobile sports betting was allowed, Indiana experienced a noticeable uptick in the amount wagered in October, even when the figure was adjusted with a seasonality factor. Increasing amounts were also wagered in both November and December. Given the small sample size, it is important to exercise caution when attributing this increase to a specific factor. Although the immediate jump coincides with the implementation of mobile sports betting, it could also be the result of other factors such as a massive influx of new

players, money gambled, and greater awareness of a new gambling option. It is somewhat expected that more players will adopt a practice, namely sports gambling, as it progresses through its early stages and people get more familiar with it. However, the size and immediacy of Indiana's increase isn't seen in other states, save New Jersey. It does not seem too far-fetched to attribute a substantial part of this massive rise to the allowance of mobile wagering.

Month	Handle	Revenue	Hold
Sep-19	\$ 35,215,416	\$ 8,558,974	24.30%
Oct-19	\$ 91,697,393	\$ 11,538,533	12.60%
Nov-19	\$ 147,276,912	\$ 10,593,321	7.20%
Dec-19	\$ 161,808,925	\$ 11,989,909	7.41%

Table 1 Summary of Sports Gambling Activity in Indiana (09/2019 - 12/2019)

Nevada

Nevada was the epicenter of the sports gambling world before PASPA was struck down. In order to compare Nevada's revenue figures with those of other states, data has only been gathered from June 2018 on, which is when sports betting first became legally available in New Jersey. As one can see, Nevada is still pulling in massive amounts of money. The dip in their handle over the summer is rather cyclical, as football (fall and early winter) is still the sport that is wagered on most often. Nevada's revenue figures seem largely unaffected by the appearance of sports betting in other states. Nevada has

the benefit of knowing how to operate a successful sports betting operation which is key in maintaining its first-mover advantage.

Month	Handle	Revenue	Hold
Jun-18	\$ 286,548,295	\$ 20,173,000	7.04%
Jul-18	\$ 244,638,554	\$ 4,061,000	1.66%
Aug-18	\$ 247,622,790	\$ 12,604,000	5.09%
Sep-18	\$ 571,034,483	\$ 56,304,000	9.86%
Oct-18	\$ 528,568,873	\$ 29,547,000	5.59%
Nov-18	\$ 581,070,664	\$ 27,136,000	4.67%
Dec-18	\$ 561,859,873	\$ 44,106,000	7.85%
Jan-19	\$ 497,482,993	\$ 14,626,000	2.94%
Feb-19	\$ 458,591,549	\$ 35,816,000	7.81%
Mar-19	\$ 596,752,294	\$ 32,523,000	5.45%
Apr-19	\$ 328,121,212	\$ 21,656,000	6.60%
May-19	\$ 317,380,282	\$ 11,267,000	3.55%
Jun-19	\$ 322,077,670	\$ 16,587,000	5.15%
Jul-19	\$ 235,659,955	\$ 10,534,000	4.47%
Aug-19	\$ 287,757,296	\$ 18,733,000	6.51%
Sep-19	\$ 546,358,867	\$ 52,068,000	7.39%
Oct-19	\$ 543,552,781	\$ 47,887,000	8.81%
Nov-19	\$ 614,118,812	\$ 31,013,000	5.05%
Dec-19	\$ 571,179,245	\$ 36,327,000	6.36%

Table 2 Summary of Sports Gambling Activity in Nevada (06/2018 - 12/2019)

New Jersey

New Jersey was the first state outside of Nevada to legalize and operationalize sports betting. As the months progressed, they continued to take on increasing amounts of wagers. A major factor that has helped New Jersey get a strong start is their appearance

as the first state with legalized sports gambling in an area with a high population density. Numerous news reports have detailed how sportsbooks in New Jersey were attracting residents of New York State and New York City to come gamble in New Jersey (CBS New York 2019; Hill 2019; Palmeri 2020). The population of the eastern seaboard, especially around New York City, has a reputation for the existence of large, illegal sports gambling operations. Simple, perhaps stereotypical, assumptions may attribute this existence to the presence of bookies and the Mafia, but there are likely other cultural factors that produce this influence. However, that analysis is out of the scope of this research. Residents of New York City aside, New Jersey has also experienced positive returns thanks to having the necessary infrastructure in place when sports gambling was legalized and enabling mobile wagering to occur immediately as well. Casinos have long existed in Atlantic City, so New Jersey already had a physical presence in a well-known location to operationalize. The state was also quick to work with other vendors like FanDuel and Draft Kings, who built their own retail locations throughout the state. The immediate access to mobile betting also played a factor in the rapid handle growth. However, given that wagering data already includes mobile amounts, it can be difficult to isolate the impact of new players and/or money that mobile betting allows.

Month	Handle	Revenue	Hold
Jun-18	\$ 16,409,619	\$ 3,458,668	21.10%
Jul-18	\$ 40,682,237	\$ 3,845,880	9.50%
Aug-18	\$ 95,634,048	\$ 3,845,880	9.60%
Sep-18	\$ 183,948,404	\$ 23,775,366	12.90%
Oct-18	\$ 260,711,301	\$ 11,686,119	4.50%
Nov-18	\$ 330,748,563	\$ 21,243,865	6.40%
Dec-18	\$ 319,173,548	\$ 20,814,222	6.50%
Jan-19	\$ 385,279,662	\$ 18,777,582	4.90%
Feb-19	\$ 320,368,087	\$ 12,732,740	4.00%
Mar-19	\$ 372,451,342	\$ 31,669,387	8.50%
Apr-19	\$ 313,719,562	\$ 21,215,747	6.80%
May-19	\$ 318,940,677	\$ 15,536,384	4.90%
Jun-19	\$ 273,222,975	\$ 9,701,925	3.60%
Jul-19	\$ 251,371,272	\$ 17,884,790	7.10%
Aug-19	\$ 293,594,862	\$ 25,210,342	8.60%
Sep-19	\$ 445,563,503	\$ 37,883,375	8.50%
Oct-19	\$ 487,924,504	\$ 46,393,537	9.50%
Nov-19	\$ 562,675,543	\$ 32,895,546	5.90%
Dec-19	\$ 557,786,161	\$ 29,424,884	5.30%

Table 3 Summary of Sports Gambling Activity in New Jersey (06/2018 - 12/2019)

New York

New York stands out as a state that is not fully capitalizing on its potential to maximize the positive economic effects of legalized sports gambling. Because of the way sports betting was legalized in New York, betting can only occur in the casinos of upstate New York. This causes a couple of readily apparent issues. First, the location of the casinos makes it much harder for residents of New York City to legally gamble on sports in New York State. Any city resident would likely be disinclined to travel the three hours to these casinos by car (and many New York City residents do not have cars). This also

feeds into the second major problem: the unavailability of mobile sports betting. New Yorkers are unable to wager from mobile devices in their home state, which has shown to be a big economic boon for other states. The combination of remote casino locations and a lack of mobile betting in their home state leads to a fairly obvious remedy for New Yorkers, especially residents of New York City, who wish to bet on sports: travel just across the border to New Jersey or Pennsylvania to place a bet via a mobile device. Given the interconnectedness of public transportation around New York City, it is not far-fetched to believe that residents of New York might be more likely to wager in New Jersey. However, it is difficult to estimate the economic gain or loss to each state involved in this situation. In the context of this research, any comparison is made more difficult due to the reporting methods of New York; the state only releases figures for revenue, and not hold or handle, which makes any interstate comparison of handle up for conjecture.

Pennsylvania

Analysis of Figure 4 and Table 4 reveal interesting trends in monthly handle amounts. Pennsylvania legalized sports gambling in November 2018. For about the first six months of legality, the amount wagered in Pennsylvania was fairly similar to other states like Mississippi, Rhode Island, and West Virginia. This similarity is intriguing, as the size of Pennsylvania's large population dwarfs the combined population of those three states. Figure 4 reveals that starting around June 2019, Pennsylvania's adjusted handle began a drastic rise. Table 4 also gives an interesting comparison, as the raw

amount wagered in March 2019 was less than the same figure in July 2019. This differs from expectations, as March is typically a very active month for sports gamblers because of NCAA basketball's 'March Madness,' while July is usually one of the months with the least wagering, a difference also visible in Figure 3. This unexpected increase in handle coincides well with the operationalization of mobile sports betting in May 2019. Since that point, the adjusted monthly handle has been consistently increasing, perhaps tracking to join the likes of Nevada and New Jersey. The delay between the beginning of legalized sports gambling and the beginning of mobile sports gambling provides about seven months of data to examine before and after the change. Although it is still important to not focus on one factor's influence, Pennsylvania offers the most compelling case of the importance of allowing mobile sports betting to a state's economic success.

Month	Handle	Revenue	Hold
Nov-18	\$ 1,414,587	\$ 508,997	36.00%
Dec-18	\$ 16,173,090	\$ 2,007,592	12.40%
Jan-19	\$ 32,011,839	\$ 2,607,215	8.10%
Feb-19	\$ 31,500,742	\$ 1,946,817	6.20%
Mar-19	\$ 44,527,575	\$ 5,519,340	12.40%
Apr-19	\$ 36,769,145	\$ 4,221,482	11.50%
May-19	\$ 35,934,215	\$ 2,861,852	8.00%
Jun-19	\$ 46,334,244	\$ 3,126,380	6.80%
Jul-19	\$ 59,331,959	\$ 5,079,633	8.60%
Aug-19	\$ 109,038,051	\$ 9,887,738	9.10%
Sep-19	\$ 194,504,622	\$ 19,334,816	9.90%
Oct-19	\$ 241,186,066	\$ 19,116,777	7.90%
Nov-19	\$ 316,468,264	\$ 20,570,772	6.50%
Dec-19	\$ 342,560,389	\$ 17,459,091	5.10%

Table 4 Summary of Sports Gambling Activity in Pennsylvania (11/2018 - 12/2019)

Social Survey Results

The survey was distributed to 1,000 potential respondents at various college campuses around the United States. The survey received 84 responses, a 5.6% response rate. Although this sample is smaller than what was hoped for, some meaningful insight can still be derived. A few questions included in the survey were examined more intently to determine the feelings of the overall population. The first question of interest was: “*Is betting on sport normal?*” The hypothesis was that a majority of students surveyed would believe that betting on sport is normal. Of the seventy respondents to that particular question, two-thirds of respondents indicated that it was a “normal” practice, while only 10% considered sports betting to be the opposite (see Figure 5).

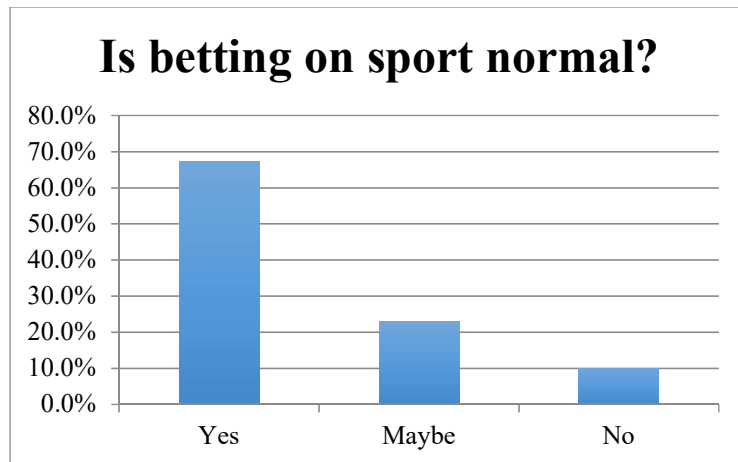


Figure 5 Respondents' View of 'Normality' of Betting on Sport

However, when asked whether gambling should be a part of experiencing sport, respondents were less clear about their collective opinion and less accepting of sports gambling in the context of the question. Of the 69 respondents to the question, just under half indicated that they had no clear opinion by selecting “maybe” when asked. Of those that had a clear opinion either way, “No” was more popular, but not with any statistical significance; about thirty percent answered “No,” while just over twenty percent answered “Yes” (Figure 6).

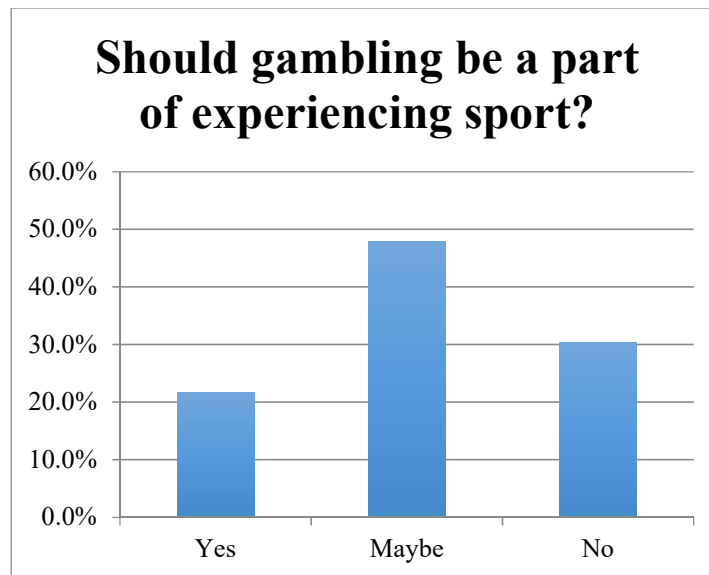


Figure 6 Respondents' View of Sports Gambling's Role in the Sporting Experience is Split

The first two questions (“*Is betting on sport normal?*” and “*Should gambling be a part of experiencing sport?*”) were examined to see if there was a relationship between responses to both prompts. It was hypothesized that those who considered betting on sport to be normal would be more in favor of gambling being a part of experiencing sport. A chi-squared test resulted in $p = 0.00153$, revealing a strongly significant relationship between the two questions. Table 5 details the results, with six of the seven respondents who answered that betting on sports is not “normal” also responded that betting should not be a part of experiencing sport. For those who considered sports betting to be “normal,” over half were unsure whether it should be a part of experiencing sport. The remaining “normal” voters were more in favor of betting being a part of experiencing sport. The respondents who were unsure about the “normal” status of sports betting were equally in favor of betting perhaps being a part of experiencing sport or not being a part of experiencing sport at all, with only one respondent considering sports betting perhaps “normal” and an important part of experiencing a sport. In general, the support for sports gambling seems to decline as it becomes more intertwined with the sport itself. This trend was interesting given the nascent nature of legal sports betting in the majority of states compared to the rest of the world. In much of Europe, Australia, Asia, and other locations, sports betting is heavily involved in the presentation of sporting events. Teams are sponsored by betting companies, have betting advertisements around the field, show betting commercials during breaks in play, etc. The columnwise percentages are given below in Table 5.

		Is betting on sport normal?		
		Yes	Maybe	No
Should gambling be a part of experiencing sport?	Yes	29.8%	6.7%	0.0%
	Maybe	53.2%	46.7%	14.3%
	No	17.0%	46.7%	85.7%

Table 5 Comparison of Normality of Sports Betting and Sports Betting's Role in the Sporting Experience

Survey participants were also asked how much they agree with the statement “*Addiction to gambling is a lot like addiction to drugs or alcohol.*” The hypothesis was that addiction to gambling would be viewed differently than addiction to alcohol or drugs. Seventy respondents answered the question, of whom 54 (77.1%) indicated that they considered addiction to gambling to be a lot like addiction to drugs or alcohol (Figure 7). The high level of similarity between addiction to alcohol and gambling is particularly interesting since alcohol is such a large part of the sporting experience already. Beer stands are ubiquitous at professional sporting events and are slowly infiltrating college athletic facilities, despite having long been a part of pregame tailgating behavior. As mentioned earlier, hesitance towards the degree of sports gambling’s involvement in the sporting experience could prevent it from achieving the same ubiquity as alcohol.

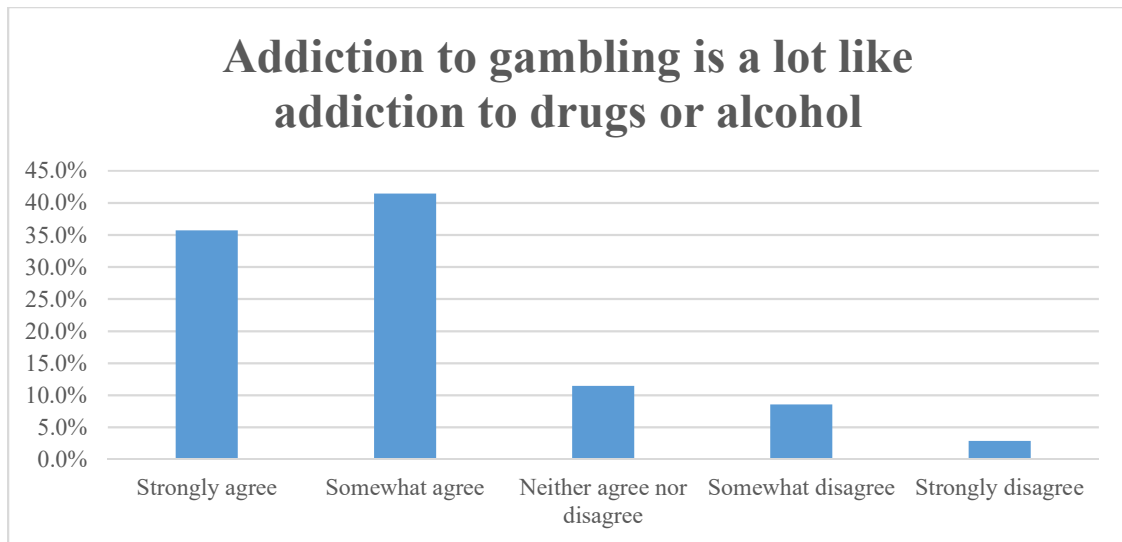


Figure 7 Respondents' Views on Drug, Alcohol, and Gambling Addiction

In the same question, respondents used the same scale to rate the statement “*Gambling is immoral*” to test the hypothesis that college students do not view gambling as immoral. Fifty of seventy (71.4%) answers indicated that they had some degree of disagreement with the given statement (Figure 8), which supports the hypothesis. This reveals that the majority of respondents do not view gambling as a vice. This also mirrors the results of the question about whether sports gambling is “normal” or not. The different framing of this question is further evidence of the openness of college-aged students toward sports gambling. Although it has long been illegal, current opinions towards gambling seem to be somewhat lax among college students. It should be noted that the question did not specify the type of gambling, so it stands that views of morality may vary across different forms of gambling.

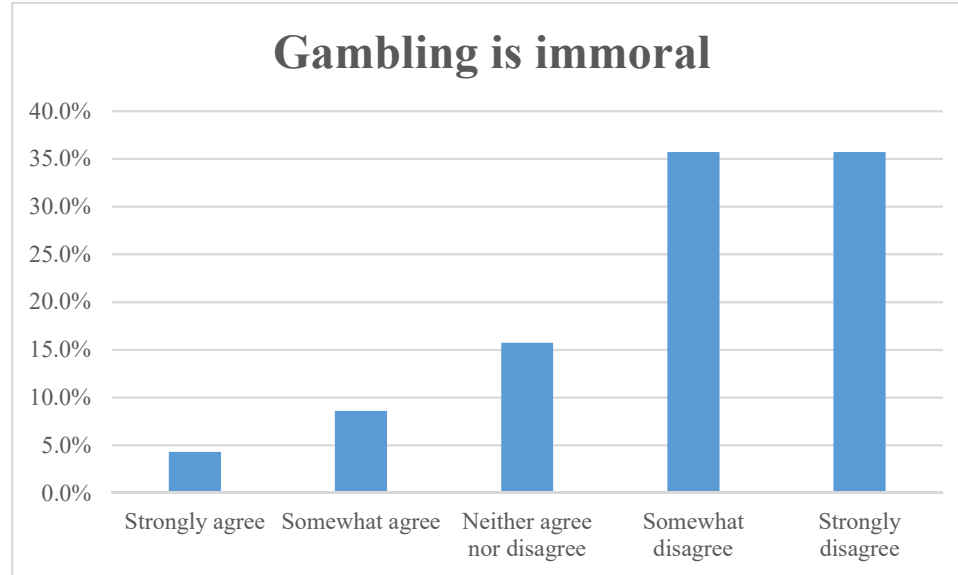


Figure 8 Respondents' Views on Morality of Gambling

Another survey question asked respondents *“Which of the following best describes your opinion about legalized sports gambling? Would you say...: (possible responses were) all types of sports gambling should be legal, some types of sports gambling should be legal, or all types of sports gambling should be illegal?”* The hypothesis was that the majority of respondents would think that sports betting should be allowed in some form. Of the 69 respondents to the question, 97% held the opinion that at least some types of sports gambling should be permitted (Figure 9), supporting the hypothesis. Only two respondents opined that all forms of sports gambling should be illegal. Within the 97% who felt that at least some types of sports gambling should be legal, about one-third felt that all types of sports gambling should be permitted, with the

remaining portion having the opinion that betting on certain sports should still be illegal.

The results to this question indicate respondents overwhelmingly believe that people should have the option to bet on some sports. Although it did not ask respondents to indicate which sports they think should be open for betting, other results from this survey and state financial publications may suggest that professional football and basketball regardless of collegiate or professional level are the prime candidates due to the volume of betting that occurs on events in those disciplines.

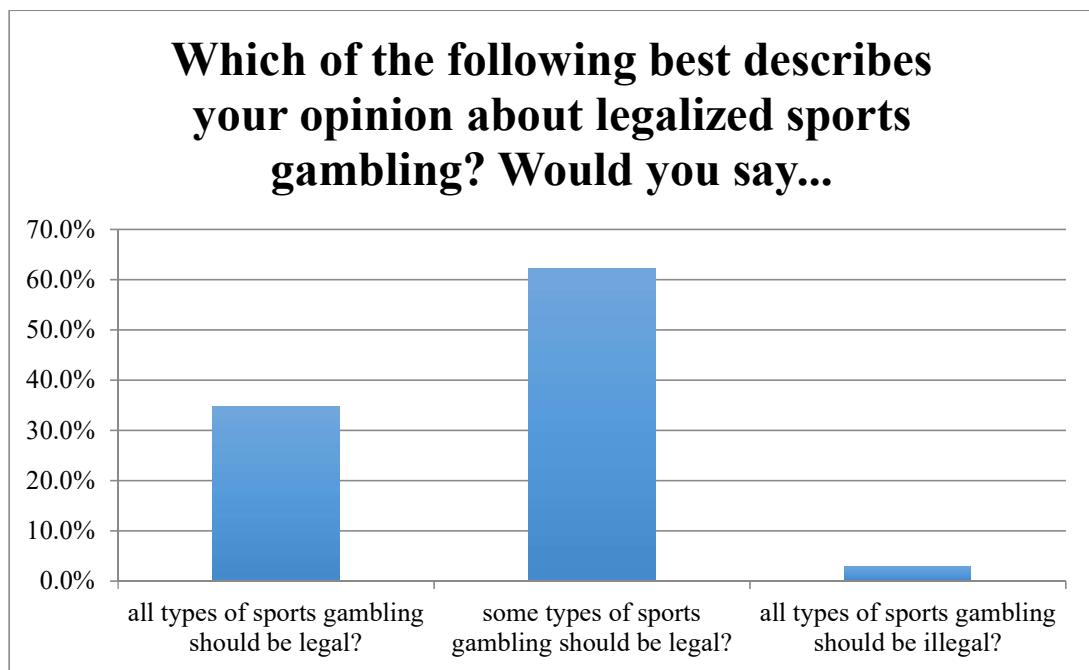


Figure 9 Respondents' Opinions on Legalization of Gambling

In another question on the survey, respondents were asked “*How important are the following responsible gaming requirements if your state was to legalize sports betting: Require sport betting operators to implement responsible betting measures; Set aside some of the sports betting revenues to treat individuals who develop gambling problems?*” The possible answers were: “*Extremely important; Very important; Moderately important; Slightly important; Not at all important.*” This question was asked to test the following hypotheses: (1) college students think that more responsible gambling measures should be put in place if sports betting is legalized and (2) a portion of sports gambling revenue should be used to treat new occurrences of gambling disorders. Seventy respondents answered the question. Overall, respondents were much more sold on the importance of requiring sport betting operators to implement responsible betting measures than using sports betting revenue to fund the treatment of individuals who develop gambling problems. Engebø et al. (2019) defines responsible gambling measures as “methods aimed at reducing and preventing negative consequences associated with gambling.” Responsible gambling measures can be enacted by gambling operators or individuals, and can include practices like account limits on deposits, play, time, losses, and/or other aspects. Nearly two-thirds (65.7%) of respondents to this question considered a requirement to implement responsible betting measures either “extremely important” or “very important,” while under half (42.9%) of respondents viewed using sports betting revenues to treat new gambling problems in the same light (Figure 10). This supports the first theory but support for the second is inconclusive. Results from this question suggest that respondents acknowledge that increased access to

gambling opportunities can in turn lead to an increased prevalence of problem gambling, but they are not quite unified on how treatment should be funded or organized.

Distribution of gambling revenues is a point of discussion and contention in many states.

Some states grant gambling revenues to Indian tribes within the state, while other states have disagreements about which government agency will control proceeds. Either way, the issues of revenue distribution is a recurring theme, as seen in the results of this

question as well.

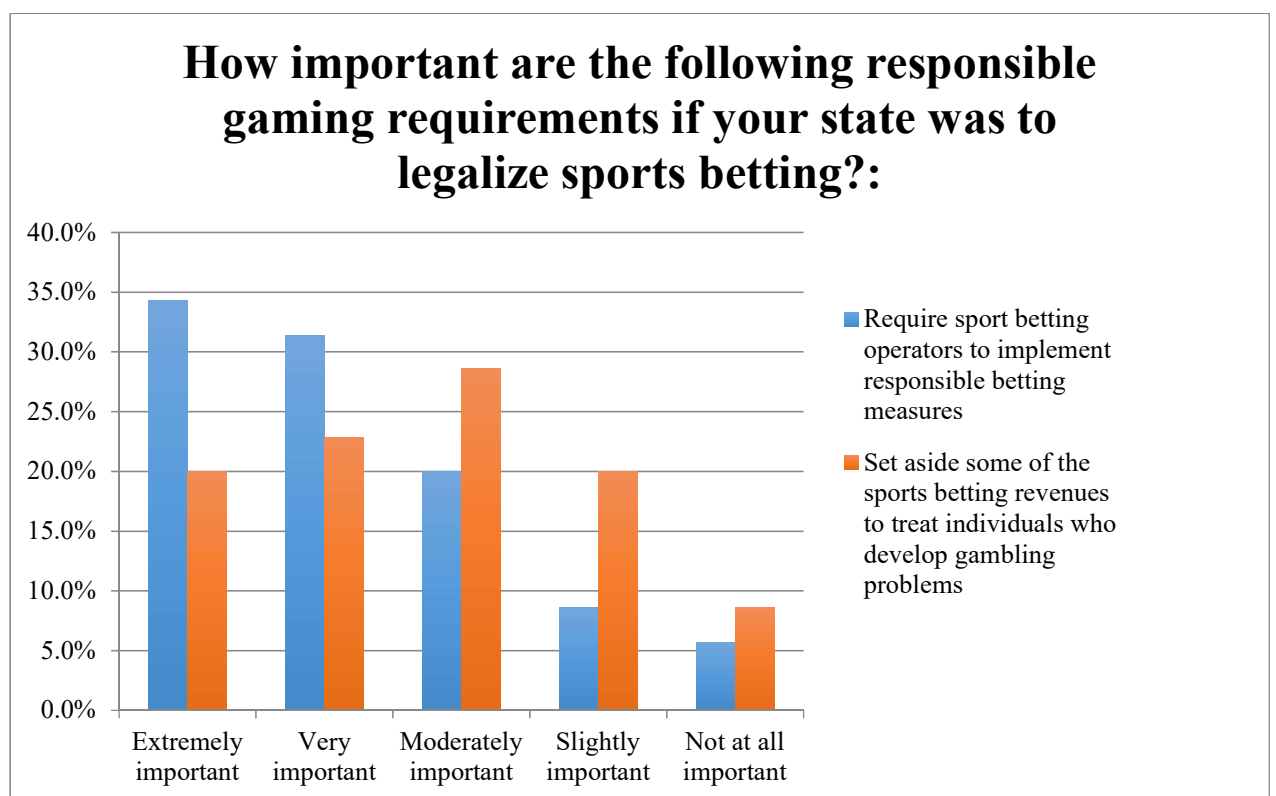


Figure 10 Respondents' Views on Implementation of Responsible Betting Measures

To test the idea that college students have a neutral view of the overall benefit or harm that sports gambling produces, the following question was asked: “*Which best describes your belief about the benefit or harm that sports gambling has on society? Would you say ...: the benefits far outweigh the harm, the benefits somewhat outweigh the harm, the benefits are about equal to the harm, the harm somewhat outweighs the benefits, the harm far outweighs the benefits?*” The most selected option (40.6%) amongst respondents was that “the benefits are about equal to the harm” (Figure 11). 42% of respondents answered that “the benefits somewhat outweigh the harm” or “the harm somewhat outweighs the benefits.” A near equal number of respondents answered that the benefits and harms were especially skewed in either direction. An alternate view of responses to this question was also taken; responses were condensed into three categories: $\text{benefits} > \text{harm}$, $\text{benefits} = \text{harm}$, $\text{benefits} < \text{harm}$. Only a quarter (24.6%) of respondents to this question believed that the benefits of sports gambling would outweigh the harms, while just over one-third (34.8%) of respondents believed that the harm would outweigh the benefits. Overall, the results uphold the idea that college students do not consider legalized sports gambling to be more of an overall benefit to society than a harm, and vice versa. A consideration of both aspects suggests that the projected impact of legalized sports gambling is very unclear, with most feeling rather moderate about the effects in either direction. This ambiguity can potentially be chalked up to how people choose to weigh the various potential benefits and harms. Some who favor economic benefits may take a friendlier look at the practice, while those who align more with social

concerns may view sports gambling in a more negative light. Trying to balance the effects of two hard-to-quantify measures may be the source of the ambiguity seen, which was expected to some degree.

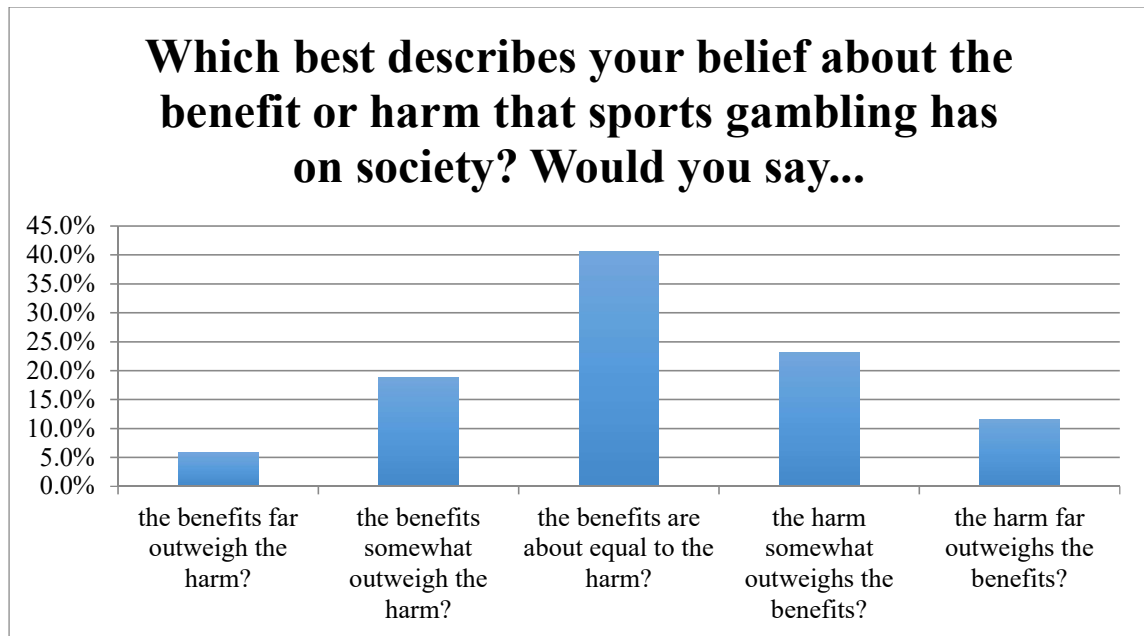


Figure 11 Respondents' Views on Sports Gambling as a Benefit or Harm to Society

One of the final questions in the survey asked respondents *“Have your opinions on sports gambling as a stigma changed as various states have legalized the practice?”* This question was asked to test the notion that sports gambling is becoming more accepted among college students because it is being ratified by state governments. About three-quarters of the sixty respondents reported that their opinions haven’t changed

(Figure 12), which rejects the idea that legalization of sports gambling is causing more widespread acceptance of the practice among college students. Put another way, the actions of state legislatures generally do not affect the opinions of constituents. This suggests that the preexisting view of sports gambling dominates the opinions of individuals. When viewed with respect to other findings from the survey, it suggests that college-aged students are already very open to the idea of sports gambling and the legalization merely removed a mandated barrier.

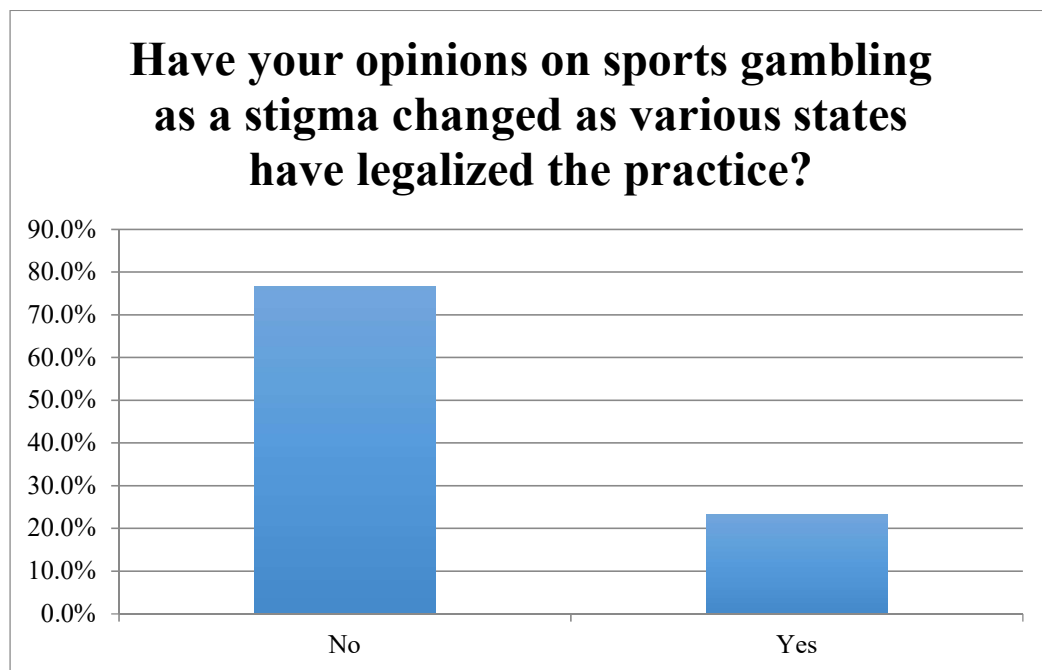


Figure 12 Respondents' Views of the Stigma Status of Sports Gambling

Chapter 5. Conclusions

Sports gambling is still a controversial topic where the benefits and drawbacks of legalization need to be carefully balanced. The enactment of legalized sports gambling has an unambiguously positive economic effect on a state's economy. More money is being exchanged amongst parties, and citizens from other states may also contribute to the gambling revenues. However, to fully maximize the positive economic returns of sports gambling it is recommended that states also allow mobile sports betting. Mobile sports betting increases the availability for residents and state visitors to place bets, and as such, more money is wagered in states when mobile sports betting is operationalized. Although mobile sports betting seemed to be the most apparent harbinger of economic success, one would be remiss to not mention other factors that also have an effect, like proximity to regions with high population density or having physical and technical infrastructure in place to immediately support operations.

On the social side, survey respondents indicated that they largely considered sports gambling "normal." Although respondents generally accepted sports gambling as "normal," they preferred that sports betting not be too intrusive or integrated into the sporting experience. This stands in contrast to situations seen elsewhere in the world, such as Australia and Europe. The promotion of sports gambling in broadcasts in these regions is considered normal and accepted, but respondents in the U.S. seem to be uneasy about adopting a similar practice in America. Respondents also considered addiction to

gambling similar to addiction to alcohol and drugs. Previously completed research repeatedly describes how problem or pathological gambling has a strong correlation with various alcohol and drug issues. Since the connection between the two is strong, it is not surprising that they are viewed in a similar light. Sports gambling was not considered immoral by the majority of respondents. This consideration lends credence to the idea that gambling is no longer seen as a vice, and that it is gaining social acceptance. Almost all respondents indicated that they think wagering should be permitted on some sports, but not necessarily on all athletic contests. Respondents were divided on what should be done with sports gambling revenues. They generally agreed that action to implement additional responsible gambling measures should be taken, but it is unclear whether the burden of action rests on state governments and health agencies or on sports betting operators. Opinions of whether sports betting was an overall benefit or harm to society were split, which mirrors the research seen in Kearney (2005). Businesses and consumers who experience consumption benefits through gambling (Gordon, Gurrieri, & Chapman 2015) benefit, but social costs are simultaneously incurred through an increase in problem gambling that can lead to higher rates of bankruptcy and family problems. Finally, opinions of sports gambling as a stigma have not changed as states continue to legalize the practice. This suggests that respondents had a preexisting acceptance of sports gambling that was unaffected by states across the national legalizing the practice.

However, limitations of the survey and its results do exist. These limitations include apathy by a subset of the population of interest on the issue leading to no conclusion, a population that is too homogenous and therefore not able to provide usable

results, and a desired number of responses not being obtained. For example, if respondents are not aware of the benefits and drawbacks that legalized sports gambling can cause, they may not feel that legalization will have a significantly positive or negative effect, and instead opt for the neutral option. The survey distribution method may also limit the usefulness of the survey results. The professors contacted for potential survey distribution were primarily concentrated in statistics, often with an interest or focus in sports statistics. As students in their classes (and thus potential respondents) would also likely have a pronounced interest in sports topics, the interests and opinions of survey respondents could have been too homogenous. A survey distribution that targeted professors of other disciplines may have produced different results. Finally, the number of responses obtained was far less than expected. The small sample of respondents (84) and declining responses to questions throughout the survey may not provide robust results worth studying. If the survey response count was closer to the proposed number, the survey results would have more validity.

Chapter 6. Future Research

As the legal status of sports gambling in the United States is changing, it provides a constantly evolving environment to study. This research is somewhat bound by the short period of time that legalized sports gambling has been available outside a few physical locations, the small sample size collected, and that it indicated perceptions at a specific point in time. Further tracking of both economic and sociological aspects is important to stay current with actual practices and outcomes as sports gambling expands. On the economic side of things, a continual monitoring of financial information produced by states is recommended to see how the practice continues to develop. Financial aspects to explore could involve regressions that help predict financial success based on factors like the availability of mobile betting, proximity to population centers, or if there are restrictions on which sports can be wagered on. Devising a way to compare revenue and hold figures across states could allow for an alternate look at which states are more successful than others. An interesting development for future research that appeared as this study was concluding was the disruption caused by the novel coronavirus pandemic in 2020. Research could also reveal how illegal sportsbooks operations are affected by the growing availability of legal sportsbooks.

Many sociological aspects of legalized sports gambling remain open for further investigation as well. To build off the findings detailed above, two general paths seem

relatively apparent: (1) Compare the social findings above to different demographic sections of the population to see if opinions vary across population characteristics like age, gender, state of residence, political party affiliation, risk profile, etc.; and (2) perform a longitudinal analysis of opinions to gain a more accurate look at how opinions change over time, before and after legalization, and if acceptance of sports betting continues to increase and trend towards a European model. One salient social topic outside of the survey is the impact of sports gambling on amateur sports, namely college athletics. There is a divide among states on whether betting on college sports should be legal. Various college athletics officials have come out against legalized wagering on college sports in order to uphold the nature of the sport. Finding a way to measure the impact of legalized college sports betting on college athletes could provide valuable insight to legislators.

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Chapter 8. Appendix

Summaries of Sports Gambling Activity in Other States, from Operationalized Date to December 2019

Month	Handle	Revenue	Hold
Jun-18	\$ 8,411,970	\$ 1,090,610	13.00%
Jul-18	\$ 7,358,080	\$ 494,449	6.70%
Aug-18	\$ 9,574,577	\$ 1,264,914	13.20%
Sep-18	\$ 14,425,723	\$ 3,089,171	21.40%
Oct-18	\$ 16,494,601	\$ 650,413	3.90%
Nov-18	\$ 16,933,581	\$ 1,498,895	8.90%
Dec-18	\$ 14,209,007	\$ 2,164,450	15.20%
Jan-19	\$ 12,726,242	\$ 1,588,745	12.50%
Feb-19	\$ 8,473,386	\$ 236,448	2.80%
Mar-19	\$ 9,285,056	\$ 1,664,297	17.90%
Apr-19	\$ 6,511,095	\$ 736,906	11.30%
May-19	\$ 6,401,492	\$ 507,365	7.90%
Jun-19	\$ 5,421,826	\$ 457,180	8.40%
Jul-19	\$ 4,394,498	\$ 641,735	14.60%
Aug-19	\$ 5,975,717	\$ 938,426	15.70%
Sep-19	\$ 10,153,756	\$ 2,115,931	20.80%
Oct-19	\$ 10,750,377	\$ 2,137,874	19.90%
Nov-19	\$ 8,835,565	\$ 1,344,529	15.20%
Dec-19	\$ 13,300,000	\$ 1,800,000	13.53%

Table 6 Delaware

Month	Handle	Revenue	Hold
Aug-19	\$ 8,756,246	\$ 2,161,688	25.20%
Sep-19	\$ 38,528,921	\$ 4,956,347	12.90%
Oct-19	\$ 46,500,443	\$ 5,658,243	12.20%
Nov-19	\$ 59,344,806	\$ 3,599,750	6.10%
Dec-19	\$ 59,258,838	\$ 2,904,257	4.90%

Table 7 Iowa

Month	Handle	Revenue	Hold
Aug-18	\$ 6,270,128	\$ 645,057	10.30%
Sep-18	\$ 31,770,270	\$ 5,503,793	17.30%
Oct-18	\$ 32,837,334	\$ 1,178,343	3.60%
Nov-18	\$ 44,499,883	\$ 1,674,250	3.80%
Dec-18	\$ 41,762,048	\$ 6,174,224	14.80%
Jan-19	\$ 35,190,774	\$ 2,793,238	7.90%
Feb-19	\$ 25,148,135	\$ 2,756,439	11.00%
Mar-19	\$ 32,421,264	\$ 4,898,726	15.10%
Apr-19	\$ 19,188,763	\$ 2,057,834	10.70%
May-19	\$ 17,438,288	\$ 1,191,967	6.80%
Jun-19	\$ 15,190,666	\$ 1,625,113	10.70%
Jul-19	\$ 13,383,383	\$ 1,053,776	7.90%
Aug-19	\$ 19,876,370	\$ 2,884,348	14.50%
Sep-19	\$ 37,870,989	\$ 5,631,583	14.90%
Oct-19	\$ 48,019,481	\$ 12,295,357	25.60%
Nov-19	\$ 56,369,036	\$ 3,784,071	6.70%
Dec-19	\$ 49,076,433	\$ 3,478,919	7.09%

Table 8 Mississippi

Month	Handle	Revenue	Hold
Oct-19	\$ 5,605,244	\$ 220,396	3.93%
Nov-19	\$ 17,115,416	\$ 960,714	5.61%
Dec-19	\$ 22,551,453	\$ 1,743,231	7.73%

Table 9 Oregon

Month	Handle	Revenue	Hold
Nov-18	\$ 682,714	\$ 72,997	10.69%
Dec-18	\$ 13,087,999	\$ 957,913	7.32%
Jan-19	\$ 19,051,125	\$ 159,978	0.84%
Feb-19	\$ 20,686,618	\$ (890,623)	-4.31%
Mar-19	\$ 23,582,716	\$ 1,548,230	6.57%
Apr-19	\$ 16,859,818	\$ 1,970,110	11.69%
May-19	\$ 18,900,152	\$ 899,165	4.76%
Jun-19	\$ 14,736,667	\$ 2,149,999	14.59%
Jul-19	\$ 8,321,947	\$ 827,579	9.94%
Aug-19	\$ 10,060,066	\$ 851,788	8.47%
Sep-19	\$ 22,195,789	\$ 2,516,059	11.34%
Oct-19	\$ 28,281,024	\$ 2,457,136	8.69%
Nov-19	\$ 31,465,062	\$ 2,745,518	8.73%
Dec-19	\$ 31,670,511	\$ 2,571,755	8.12%

Table 10 Rhode Island

Month	Handle	Revenue	Hold
Aug-18	\$ 305,192	\$ 196,945	64.50%
Sep-18	\$ 7,333,626	\$ 1,967,318	26.80%
Oct-18	\$ 11,147,951	\$ 854,974	7.70%
Nov-18	\$ 13,826,231	\$ 1,207,363	8.70%
Dec-18	\$ 15,183,234	\$ 2,396,963	15.80%
Jan-19	\$ 19,740,035	\$ 1,400,944	7.10%
Feb-19	\$ 16,845,338	\$ 228,286	1.40%
Mar-19	\$ 15,276,806	\$ 1,837,732	12.00%
Apr-19	\$ 10,978,040	\$ 699,185	6.40%
May-19	\$ 9,429,073	\$ 719,098	7.60%
Jun-19	\$ 7,925,849	\$ 425,216	5.40%
Jul-19	\$ 6,944,761	\$ 694,934	10.00%
Aug-19	\$ 11,563,468	\$ 1,536,864	13.30%
Sep-19	\$ 27,508,921	\$ 4,119,457	15.00%
Oct-19	\$ 32,833,393	\$ 3,197,892	9.70%
Nov-19	\$ 35,268,743	\$ 1,884,396	5.30%
Dec-19	\$ 34,159,637	\$ 2,709,585	7.93%

Table 11 West Virginia

An Examination of the Economic and Social Effects of Legalized Sports Gambling

The Ohio State University Consent to Participate in Research Study Title: An Examination of the Economic and Social Effects of Legalized Sports Gambling

Protocol Number:

Researcher: Adam Sichel

This is a consent form for research participation. It contains important information about this study and what to expect if you decide to participate. **Your participation is voluntary.** Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate.

Purpose: The purpose of the research is to determine the attitudes that college students hold toward sports gambling as various states push to legalize the practice. The input of college students is sought as it can represent the beliefs of a different generation and can be monitored for changes over time. You are being asked to participate in this research study because the opinions and beliefs of college students are the focus in this study.

Procedures/Tasks: The research consists of one survey that seeks to gather the opinions about sports gambling in relation to morality and legality. The survey is the extent of research being completed.

Duration: This survey is expected to take no longer than ten minutes. You may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with The Ohio State University.

Risks and Benefits: Although the survey contains questions about your personal gambling practices, your responses will not be able to be connected to your identity.

Incentives: If you complete the survey, you will be eligible to enter a drawing for one of two \$25 Amazon gift cards. Odds for winning the drawing are estimated to be 100/1. Actual odds may vary depending upon the number of individuals opting to enter the drawing. Entrance into the drawing is voluntary. E-mail addresses will need to be collected to identify winners. However, e-mail addresses will be collected separately from survey data. By law, payments to participants are considered taxable income. Confidentiality: At the conclusion of the research, responses will be disposed of.

Only summary information contained in the final research will be retained. While research is being performed, access to the data will only be granted to the research and faculty providing guidance to the research. We will work to make sure that no one sees your online responses without approval. But, because we are using the Internet, there is a chance that someone could access your online responses without permission. In some cases, this information could be used to identify you. Also, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research):

- Office for Human Research Protections or other federal, state, or international regulatory agencies;
- The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
- The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study.

Future Research: Your de-identified information will not be used or shared with other researchers. **Participant Rights:** You may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you are a student or employee at Ohio State, your decision will not affect your grades or employment status. If you choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By agreeing to participate, you do not give up any personal legal rights you may have as a participant in this study. This study has been determined Exempt from IRB review.

Contacts and Questions: For questions, concerns, or complaints about the study you may contact **Adam Sichel at sichel.6@osu.edu**. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Office of Responsible Research Practices at 1-800-678-6251 or hsconcerns@osu.edu. **Providing consent** I have read (or someone has read to me) this page and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study. I am not giving up any legal rights by agreeing to participate. To print or save a copy of this page, select the print button on your web browser.

Please click the button below to proceed and participate in this study. If you do not wish to participate, please close out your browser window.

☐ I consent. (1)

End of Block: Block 3

Start of Block: Demographics

What is your gender?

- ☐ Male (1)
 - ☐ Female (2)
 - ☐ Other (3)
 - ☐ Prefer not to answer (4)
-

What is your race?

- ☐ American Indian or Alaskan Native (1)
 - ☐ Asian (2)
 - ☐ Black or African American (3)
 - ☐ Latino or Hispanic (4)
 - ☐ Native Hawaiian or Other Pacific Islander (5)
 - ☐ White (6)
 - ☐ Other (7)
-

In which state do you attend school?

In which state is your permanent residence?

End of Block: Demographics

Start of Block: Block 2

Below is a series of statements that others have said about sports gambling. For each of the following, please select one of the following:

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Casinos are a good place to socialize (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sports gambling is a harmful form of entertainment (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sports gambling is good for family life (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sports gambling is good for the economy (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How often in the past two months have you done each of the following?

	Daily (1)	4-6 times a week (2)	2-3 times a week (3)	Once a week (4)	Never (5)
Bet money on team sports with friends or through an office pool (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bet on games of personal skill (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Played cards for money or possessions with friends or family, outside of a casino/ (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participated in fantasy sports leagues that involve money, valuables, or status (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spent real money on games you can play on your phone or computer to buy credits, extra lives, or upgrades (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When you think about the activities you have participated in that involve betting or wagering money or possessions, would you say that you, yourself, bet or gamble:

- ☐ A great deal (1)
 - ☐ A lot (2)
 - ☐ A moderate amount (3)
 - ☐ A little (4)
 - ☐ None at all (5)
-

People have a lot of reasons they gamble. For each of the following reasons, please select how important this reason is to you:

	Extremely important (1)	Very important (2)	Moderately important (3)	Slightly important (4)	Not at all important (5)
For the excitement or as a challenge (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a hobby (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just to win money (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To win money to use for paying bills (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To support worthy causes (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Out of curiosity (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For entertainment or fun (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a distraction from everyday problems (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Have you bet on this activity in the past year?

	Yes (1)	No (2)
Any lottery game (1)	<input type="radio"/>	<input type="radio"/>
Wagering money on horse races (2)	<input type="radio"/>	<input type="radio"/>
Traditional sports betting (3)	<input type="radio"/>	<input type="radio"/>
Playing daily fantasy sports (4)	<input type="radio"/>	<input type="radio"/>
Playing season-long fantasy sports (5)	<input type="radio"/>	<input type="radio"/>
Wagering money on card games (6)	<input type="radio"/>	<input type="radio"/>

Attitudes towards problem gambling:

	Strongly agree (1)	Somewhat agree (2)	Neither agree nor disagree (3)	Somewhat disagree (4)	Strongly disagree (5)
Addiction to gambling is a lot like addiction to drugs or alcohol (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gambling is immoral (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How important are the following responsible gaming requirements if your state was to legalize sports betting:

	Extremely important (1)	Very important (2)	Moderately important (3)	Slightly important (4)	Not at all important (5)
Require sport betting operators to implement responsible betting measures (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Set aside some of the sports betting revenues to treat individuals who develop gambling problems (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Have you bet on this activity in the past year? = Traditional sports betting [Yes]

Or Have you bet on this activity in the past year? = Playing daily fantasy sports [Yes]

What sports have you bet on in the past year for real money?

- ☐ Professional Football (1)
- ☐ College Football (2)
- ☐ Professional Basketball (3)
- ☐ College Basketball (4)
- ☐ Baseball (5)
- ☐ Ice Hockey (6)
- ☐ Golf (7)
- ☐ Soccer (8)
- ☐ eSports (9)
- ☐ Motor Racing (10)
- ☐ Combat Sports (11)
- ☐ Tennis (12)
- ☐ Some other sport (13)

Display This Question:

If Have you bet on this activity in the past year? = Traditional sports betting [Yes]

Or Have you bet on this activity in the past year? = Playing daily fantasy sports [Yes]

Through which methods have you bet on sports?

- ☐ At a "brick and mortar" sportsbook (i.e. not online, but in a casino or an actual building) (1)
- ☐ Through an online sportsbook (i.e. on a website) (2)
- ☐ Betting against friends, family, and/or colleagues (3)
- ☐ Through a bookie/bookmaker (does not include online websites or casino/physical sportsbooks) (4)

Display This Question:

If Have you bet on this activity in the past year? = Playing daily fantasy sports [Yes]

Or Have you bet on this activity in the past year? = Playing season-long fantasy sports [Yes]

What types of fantasy sports have you played?

- ☐ Played only Daily Fantasy Sports (DFS), through a site like DraftKings, FanDuel, etc. (1)
- ☐ Played only in traditional, season-long Fantasy Sports leagues (2)
- ☐ Played both traditional, season-long leagues and Daily Fantasy Sports (DFS) (3)

Is betting on sport normal?

- ☐ Yes (1)
- ☐ Maybe (2)
- ☐ No (3)

End of Block: Block 2

Start of Block: Societal Effects

For the purpose of the following questions, sports gambling is defined: "the repeated wagering of money on sporting events organized by a third-party agency." This definition includes daily fantasy sports (e.g. FanDuel, DraftKings, et al.) and excludes wagering among friends, family, and other acquaintances, (e.g. season long fantasy leagues, college basketball pools, et al.).

Should gambling be a part of experiencing sport?

- ☐ Yes (1)
 - ☐ Maybe (2)
 - ☐ No (3)
-

Which best describes your belief about the benefit or harm that sports gambling has on society? Would you say...

- ☐ the harm far outweighs the benefits? (1)
 - ☐ the harm somewhat outweighs the benefits? (2)
 - ☐ the benefits are about equal to the harm? (3)
 - ☐ the benefits somewhat outweigh the harm? (4)
 - ☐ the benefits far outweigh the harm? (5)
-

Which of the following best describes your opinion about legalized sports gambling?
Would you say...

- ☐ all types of sports gambling should be legal? (1)
- ☐ some types of sports gambling should be legal? (2)
- ☐ all types of sports gambling should be illegal? (3)

Display This Question:

If Which of the following best describes your opinion about legalized sports gambling? Would you say... = some types of sports gambling should be legal?

Which types of sports gambling should be illegal?

What is your knowledge of historical examples of corruption in sports involving gambling (e.g. Black Sox scandal, Tim Donaghy and the NBA, match fixing, etc.)?

- ☐ No knowledge (1)
 - ☐ Some knowledge (2)
 - ☐ In-depth knowledge (3)
-

How often do you consider the gambling implications of actions or events during a competition?

- ☐ Very infrequently (1)
 - ☐ Somewhat infrequently (2)
 - ☐ Occasionally (3)
 - ☐ Somewhat frequently (4)
 - ☐ Very frequently (5)
-

How big of an influence do you think the sports betting industry has on the outcome of athletic competitions?

- ☐ Very small influence (1)
 - ☐ Somewhat small influence (2)
 - ☐ Moderate influence (3)
 - ☐ Somewhat large influence (4)
 - ☐ Very large influence (5)
-

Have your opinions on sports gambling as a stigma changed as various states have legalized the practice?

- ☐ Yes (1)
 - ☐ No (2)
-

Display This Question:

If Have your opinions on sports gambling as a stigma changed as various states have legalized the pr... = Yes

How have your opinions of sports gambling as a stigma changed as various states have legalized the practice?

End of Block: Societal Effects

Start of Block: Block 4

Would you like to enter the raffle for a chance to win one of two \$25 Amazon gift cards? Selecting "yes" will deliver you to a survey separate from this one to maintain your anonymity.

☐ Yes (33)

☐ No (34)

End of Block: Block 4
