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Researchers Bet Casino Data Can Identify Gambling Addicts

Computerized models can spot and warn people with high risk profiles similar to the way geneticists have invented tests to predict cancer risk

For most of her life, Kim McGuinness was no more than a casual gambler, taking occasional trips with her husband to Atlantic City. But after he died, Ms. McGuinness says her pattern changed dramatically. Suddenly, she was hitting the slot machines hard, often betting through the night.

"I was lonely," says the 56-year-old New Yorker, who says in two years she gambled away more than $1 million, losing all of her husband's life insurance and most of their 401(k) funds.

That was two years ago. And the last place Ms. McGuinness, who is also being sued for past gambling debts, says she would have turned for help would have been the casinos. She says they only encouraged her betting. But now, researchers believe that the very data casinos used to track her—and many customers'—betting habits can be used as a tool to reduce the intractable problem of gambling addiction.

Similar to the way geneticists have invented tests to predict cancer risk, a group of addiction scientists and industry consultants say they can use casino customer-tracking information to create computerized models that can spot and warn people with high risk profiles. The new research essentially turns the industry's own data, often used in connection with loyalty cards to identify and pamper the best customers, on its head.

Early forms of the systems already have been employed by some government-run casinos outside the U.S. and by some online-betting firms. The models vary, but in general they look for risky betting patterns such as intensive play over long periods, significant shifts in behavior, or chasing losses—betting more heavily in an attempt to recoup prior losses. Depending on the system, flagged gamblers may be given education tools or a detailed analysis of their behavior, or in rare cases be barred from playing.

Casino executives so far have generally resisted the science, which raises a host of fresh moral, political and legal issues at a time when the opportunity to gamble, through online betting and

new casinos, is only growing. They argue no one can predict a gambling addiction, and that they can't be held liable for such behavior in any case.

"I think it's a terrible idea," says Gary Loveman, chief executive at Caesars Entertainment Corp. CZR -0.79% and a former Harvard Business School professor, who pioneered casino data mining for marketing purposes. "Is it McDonald's obligation to decide you have a problem because you have a tendency to eat high-calorie lunches? You could take this to ridiculous extremes."

Although most people can gamble without becoming addicted, an estimated six million to eight million adults in the U.S. alone have a gambling problem, according to the National Council on Problem Gambling, an umbrella organization for state gambling addiction groups. In its most extreme form, excessive gambling is recognized as a behavioral addiction by the American Psychiatric Association.

In the past, the traditional method for diagnosing gambling addiction relied on individuals answering questions about their emotional dependence on gambling and its effect on their finances and relationships. Now, some researchers say that while no behavioral-tracking system can formally diagnose anyone with a disorder, it can strongly suggest who is at risk.

Much of the latest research was presented recently at a conference on gambling and risk taking at Caesars Palace in Las Vegas. There, with slot machines ringing a floor below, Sarah Nelson, a Harvard Medical School professor, described a mathematical algorithm based on several variables, including how often someone bets and the size of the wagers.

"We're calling this the Sports Bettor Algorithm 1.1," she said, pointing to a screen with a complex equation eight years in the making. "Risk Level = .134*LNfreq + 0.793*LNbpd" was how it started.

For the casinos, one risk from these algorithms is that the findings may indicate that many of their most lucrative customers have potential gambling problems, and that the industry can readily identify them. Casino officials say neither is the case, but some studies based on survey questions by gambling researchers have estimated that between 25% and 50% of casino revenue can come from problem gamblers.

In one recent Harvard study, researchers found that people who triggered a "responsible gaming alert" at one large online site lost between eight and 12 times as much money on average as those in a control group. An Australian government commission said in 2010 that just 2.3% of loyalty-card holders at one gambling club produced 76% of holders' slot-machine losses, and estimated that 41% of all slot-machine losses in Australia come from problem gamblers.

So far, U.S. courts consistently have rejected arguments that casinos are liable for the behavior of addicted patrons. But some attorneys trying to take on gambling companies say that if behavioral tracking truly can identify potential problem gamblers, the legal tide could turn, similar to the way bar owners have been found partly at fault for serving visibly intoxicated patrons who cause drunken-driving accidents.

"It would be a theory of negligence, the duty of care argument," says Richard Daynard, a Northeastern University law professor who is advising some lawyers on possible litigation against casinos.

For their part, casinos have tried to address gambling addiction by devoting millions of dollars to fund various research projects. Many have instituted limited efforts to address the issue on their properties, including looking for outward signs of distress and allowing patrons to ask the casino to bar them.

At the same time, casinos have developed detailed behavioral profiles of many of their customers, based in part on information gathered though loyalty-card programs that can track slot-machine play and much non-gambling casino activity. The casinos use this information to tailor marketing offerings, particularly to the small minority who make up the bulk of their revenue base. They say none of the information can spot a problem gambler, since some of the heavy bettors and consistent losers may simply be wealthy and enjoy the thrill of wagering.

"You're talking about trying to diagnose a mental health disorder," says Alan Feldman, a spokesman for MGM Resorts International. "I don't know too many nonprofessionals who are trained to do that offhand." Jan Jones Blackhurst, a Caesars spokeswoman, says that while some of the new science may be helpful, claims that troubled gamblers can be identified from their play are "hogwash."

The skepticism is shared by some researchers, who question the science behind some of the models, and by some former problem gamblers. Kitty Martz, a 44-year-old recovering gambling addict with an M.B.A. from Cornell University, says real-time information might be a wake-up call, but would likely be only a "Band-Aid" for many addicts.

Ms. Martz says she lost more than $200,000 in five years after she and her husband moved to Australia, where she discovered that gambling machines, known as "pokies," are ubiquitous. Her husband, from whom she had tried to hide her addiction, ultimately asked for divorce, she says.

"Our own partners, husbands, children and parents can't do anything to impact us to get away from the machines," she says. "It's not due to lack of feedback that compulsive gamblers continue to gamble."

For her part, Ms. McGuinness says a little bit of knowledge could have gone a long way. Following her husband's death in 2007, she says she was in deep mourning, and two years later lost her job during the recession. During sporadic trips she took with friends to Atlantic City, she began to gamble more heavily.

“Our own partners, husbands, children and parents can't do anything to impact us to get away from the machines.” *Kitty Martz*

Employees at Harrah's and Showboat casinos, both owned by Caesars, responded swiftly to the change in behavior, she says. As is common among heavy gamblers, Ms. McGuinness was given a casino-employed host who kept careful track of her gambling, knew her personal details and

cajoled her into gambling more, she says. Her credit limit was raised to more than $100,000 and a casino-hired limo picked her up most weekends from her Manhattan apartment.

"I feel like there was a target on my back," says Ms. McGuinness, who is being sued by Caesars for $77,000 in past debts. She's disputing the matter; Ms. Jones Blackhurst of Caesars confirmed that Ms. McGuinness lost large sums, but says she "never gave any indication she had a problem."

Ms. McGuiness recalls increasing her frequency of betting, sometimes playing through the night, as well as getting more credit to gamble after losing and betting high—$20 to $60 per slot bet. Researchers say that if her memory is correct, that is the sort of behavior that might trigger alarms of some of the computerized warning systems. "In her case there's a very good chance we would pick her up," says Tony Schellinck, a Canadian marketing professor who co-founded Focal Research Consultants Ltd, a Halifax, Nova Scotia-based firm, which claims it can detect as many as 80% of at-risk gamblers.

Ms. McGuinness' losses were deducted from her bank account automatically, obscuring the harm, she says. Now no longer gambling, but considering selling her home to stay afloat, she says she believes a warning system would have helped. "I would have been mortified and never gone back," she says, adding that at the time of her gambling "my mind was just about making the day go faster."

The algorithms vary, but Mr. Schellinck, an early pioneer of this research, says Focal Research now mines as many as 800 variables. He researched loyalty-card data he acquired from casinos starting in the late 1990s, and says he found, for example, that big spenders at risk of gambling problems more frequently have a favorite machine, and tend not to quit when they have just a small win or small loss.

Two government-run casinos in Saskatchewan, Canada, used a Focal-based system for seven years. When the system detected a problem, it sent an alert to casino staff with the player's location on the floor. Staff could intervene with the gambler, with a gentle check-in or a suggestion to watch a responsible-gambling video. The system triggered about 2,900 such interactions in 2012 out of 70,000 active players-club members.

Although the Saskatchewan casinos stopped using the system earlier this year, to rely on other education tools, a New Zealand operator in July agreed to be the first to use it in a commercial land-based casino, in return for government permission to expand operations.

Such behavior-tracking systems may be less useful in land-based casinos, some researchers say, in part because they can only use betting data from customers who opt in to loyalty-card systems. But researchers say that a big breakthrough may come from online gambling sites, which collect copious data on every customer, including size of bets, time of day, and much more. Online gambling was considered illegal in the U.S. for many years, but several states have recently passed laws allowing it.

With an algorithm system already in use in Europe, one Internet operator, 888 Holdings 888.LN +0.40% PLC, says it is likely to be the first to put one in place in the U.S., where it is setting up operations for online gambling in Nevada and for lotteries in Delaware. Another leading online player, Bwin.Party Digital Entertainment PLC, which has applied to operate in Nevada and New Jersey, is also planning to roll out a variety of interventions, including a pop-up screen that may tell gamblers how long they have been playing. The company, based in Gibraltar, says it already is using a partial system to counsel problem gamblers, and has been excluding about 100 players a month out of 700,000 customers.

"There's a very strong negative business agenda attached to problem gamblers," says Itai Frieberger, 888's chief operator officer. "It's bad for our reputation and bad for business." Joachim Haeusler, Bwin's responsible gaming manager, agrees, saying the systems can create more sustainable customers. "A player who gets into trouble is a lost customer," he says.

Skeptics say such efforts by the online industry are aimed more at fending off harsh regulation of online gambling, as it seeks to grow, than helping to treat a social problem. Some addiction experts are concerned that the easy access of such betting only increases the risk of gambling addiction.

Robert Williams, a professor at Canada's University of Lethbridge who has studied gambling harm reduction programs, believes behavior- tracking systems are promising, but is concerned that some gambling companies adopting them aren't serious about gambling addiction, and have little incentive to intervene with their most lucrative customers. "A lot of it is window dressing," he says.

Mr. Williams prefers a system like Playscan, used in some European lotteries, which allows players to voluntarily receive alerts but doesn't let gambling companies have any role in the warnings. But along with problems getting gamblers to opt in, Playscan and other companies like it have found that commercial operators largely aren't interested. "I find it frustrating," said Mark Knighton, head of Playscan sales. "Casinos know their revenues are coming from problematic gamblers."

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