



Conclusions of the Algorithm:

Independent Research

The core engine of the iGap Intelligent Gaming Platform (**iGap**) is derived from the Intelligent Gaming Measurement Index (**iGMind**) that performs in depth analysis on slot and patron behaviour in the gaming environment, using existing loyalty data to manage risk. The basis of the algorithm was researched and proven by Focal Research.

The index was developed based on the fact that casino loyalty data can be used effectively to identify playing patterns. These patterns are reasonable predictors of problem gambling and risk for problem gambling thereby allowing gaming operators to proactively undertake appropriate on-site prevention and intervention activity.

The identification and accuracy rates produced by behavioural models developed using the casino loyalty data are superior to other methods or systems currently available for identifying problem gamblers on-site at gambling venues.

By selecting specific behaviour combinations, it is possible to set different thresholds for identification rates in order to target specific player segments (e.g. problem gamblers versus at-risk gamblers or patrons engaging in high risk behaviours).

The algorithm itself is easy to use and to adjust to meet specific market needs and preferences.

Statistics

The Intelligent Gaming Measurement Index powers the Platform by performing in depth analysis on extensive slot play data.

This provides a normalized interface for data access to the internal and external databases. The internal protected database holds all required patron data, linked from the CMS and other systems with additional forms and fields specific to analysis and scoring.

The results of this analysis are issued as a “risk level” score, ranging from 0, a new patron with no history and/or not at risk, and escalated to a severity based value. This score is also dynamic in both directions i.e. subject to escalation or reduction based on associated dependencies and actions. These scores are updated on a regular basis as new data becomes available, enabling historical score trend analysis to be conducted for any player in the system.

The algorithm provides the first automated, behavioural-based problem gaming risk assessment model in the industry and is the result of extensive research and testing by a third party specialist research organization.



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Using casino loyalty data to designate problem slot machine gamblers for possible interventions is a progressive initiative, which, if put into practice, will make Saskatchewan an international leader in providing a state-of-the-art responsible gambling program. Players' actual gambling behavior is the purest form of data possible and therefore a significant advancement over a player having to recollect his/her gambling experiences. The behavioral indicators of problem gambling used in the model will allow gambling studies researchers to approximate the level of data used in alcohol and drug research (i.e., actual dosages to determine safe use, dangerous use, etc.).

The model is a valuable tool purely on compassionate grounds, in that those in the throes of a gambling addiction are being targeted and presumably helped to modify their gambling behaviors. Employing the model to intervene with problem gamblers is a bold move by the SGC because slot machine revenue will undoubtedly decline; nevertheless, the SGC is showing it has a social conscience by putting the welfare of its citizens ahead of revenues. While of secondary importance, this exercise has public relations value; by assertively responding to its duty of care mandate, the SGC will be recognized as a good corporate citizen.

The Focal Research Consultant group was a worthy choice to develop the model, given the company's work on the efficacy of EGM harm reduction features, its in-depth knowledge of the Canadian gambling industry and its percipient understanding of the research process.

The attention to detail shown in various facets of the study is impressive; in particular, (1) involvement of the SGC in steering the research, (2) appropriate safety precautions taken with data handling and storage, (3) demanding ethical considerations applied, (4) detailed data collection procedures, (5) comprehensive staff training and (6) referrals provided to troubled gamblers.

Although scientifically rigorous, the report is clearly written and generally free of scholarly jargon, which should make it comprehensible to stakeholder groups, academics and lay audiences.



In my view the research design was theoretically sound and scientifically valid. The questions asked were feasible, a “gold standard” level of data was collected and the data analysis employed was suitable for answering the research questions with a reasonable degree of precision. The new (combined) variables generated to identify problem gamblers represent an important advancement in the field of gambling studies.

Dr. Smith has been a professor in the Faculty of Physical Education and Recreation at the University of Alberta for the past 25 years. He is now with the Department of Government Studies where he works with the Alberta Gaming Research Institute. Dr. Smith has been researching gambling public policy issues for 20 years, his scholarly contributions include; numerous articles in academic journals, book chapters, and presentations at national and international conferences. Dr. Smith was co-author of several studies that examined the gambling patterns and behaviors of adult and adolescent Albertans and was the principal investigator on studies dealing with gambling-related crime and the impacts of video lottery terminal gambling. Dr. Smith has appeared frequently in the national media commenting on gambling issues, most notably on CBC’s “The National”, “Newsday” and the “The Fifth Estate” and on “Score” and TSN documentaries dealing with sports betting.



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This is ground-breaking, interesting and potentially useful research. Loyalty data has been used by the industry in client tracking, promotion and marketing. It has not to date, been put to use in terms of identifying risk/interventions for problem gamblers or those at risk of problems encountered when playing electronic gaming machines.

The conclusions flow well from the research evidence: casino data is a rich source for development of an intervention model; this method is an improvement on reliance on subjective staff observations; the model can be applied relatively easily provided the appropriate player data is collected over sufficient amount of time; specific player segments can be targeted. The conclusions point to the benefits of progressing to Phase 2 of the research to further develop/test and refine the model.

The overall three phase design of the research is sound. The researchers have drawn on appropriate problem gambling research in their focus on regular gamblers and binge patterns of gambling in the data. The study has been conducted within a rigorous ethical framework, with appropriate safeguards for respondent confidentiality and anonymity. Data collection has been undertaken with high standards of training and supervision of interviewers and appropriate arrangements for support, information and referral for respondents encountering problems during the research. Differentiation of machine session data and daily player summary data raises appropriate issues for the type of data routinely collected by Player Loyalty Clubs or other player data tracking systems, that would be a precondition for the usefulness of the model for gaming operators to proactively undertake on-site prevention and intervention activities.

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- 2005-06 ISA (International Sociological Association)*
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While I am aware of casinos in Europe that use player card data to track play, identify problems and calibrate operator based interventions, this data is typically based on mandatory registration “No card, No play policies”. The use of casino loyalty data in Canada for purposes of “social intervention research” is arguably the equivalent of these European casino experiences. However, there are no precise public precedents in either contexts to inform research design or product development. To overcome these twin problems, FRCL has proposed an exploratory three phase “iterative approach”: model construction, interventionist action and model calibration. The assumptions are that player card data can be collected over a significant time period and that card data can be managed so as to allow for predictive models to be formulated. The long-term feasibility of these assumptions, it turns out, may require obtaining new information going forward that must be added to existing databases if the model is to achieve its full potential. Nevertheless, currently recorded and stored loyalty data was deemed sufficient to develop a “preliminary model.” The Focal Loyalty Data Problem Gambling Index (FLDPGI) was then constructed in order to model gambling conduct, generate hypotheses and guide the long-term design of the research. This approach developed between FRCL and SGC is, in my opinion, sound, and analytically responsible. The research design involving variable creation, data augmentation and organization, predictive capacity, behavioural outcomes and interventions, and model generality is creative and flexible for exploratory analysis and testing.

The rationales provided for the research strategy are logical, the techniques – regression, correlation, and association analyses -- are appropriate to the tasks of risk identification and prediction and most importantly the overall plan is open to reflexive modification, including managing unintended outcomes, setting variable limits of identification and refuting preferred hypotheses when they cannot be proven. The research design evinces sound scholarship and good practical reasoning.

In my opinion, the research ethics in regard to all the data collection have been responsible and honest and is in line with government and professional codes of conduct regulating the researching of human subjects in Canada.



Since there is a heavy skew of revenues and risk for problem gamblers toward regular slot machine gamblers, it is important to have a model and a product that can assess potential for preventative activity (capable of intervening at a number of points: some risk, moderate risk, high risk) and certainty that those identified and approached for interventions are the right people in need of the appropriate remedial measures. If I read this data correctly, a large number of regular slot players will be approached for remedial action.

The prototype models are valid and potentially much more reliable, and the mode of interpretation of the data seems rigorous and accurate, notwithstanding the customization issue. But the iterative research process and product development may take longer than originally anticipated, especially if more refined data collection, data analysis and hypothesis testing go ahead. In my opinion, the promise merits the delay especially since FRCL has shown itself to be an excellent research company capable of both identifying the problems and meeting the challenges associated with this important venture of using loyalty data to produce viable products to enhance responsible gambling in Saskatchewan and perhaps elsewhere.

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John McMullan is professor of Sociology and Criminology and a former Department Chairperson and Criminology Graduate Studies Coordinator at Saint Mary's University. Professor McMullan has held previous positions at the University of British Columbia and at Vanier College. He is the author of seven books, five government reports and over fifty academic articles on business crime, historical criminology, criminal organization, criminological theory, law enforcement, social regulation, media, crime and justice, and gambling and social policy. Dr. McMullan is a multiple research award holder and he has served on many university, academic, professional, and government commissions, councils and boards. At present Dr. McMullan is researching the role of public inquiries and corporate disasters and the socio-legal context of new forms of permitted gambling.