

Patron Survey Alternatives: Technical Report



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SEIGMA  SOCIAL AND ECONOMIC IMPACTS
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Authorship and Acknowledgements

Authorship

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Patron Survey Alternatives

The original SEIGMA research plan called for Patron Surveys to be conducted at all Massachusetts casinos shortly after opening and repeated at regular intervals. To that end, the first Patron Survey was conducted at Plainridge Park Casino in Plainville in 2016 (Salame et al., 2017; $n = 479$; 22.4% response rate), the second at MGM Springfield in Springfield in 2019 (Salame et al., 2020; $n = 878$; 21.2% response rate) and the third at Encore Boston Harbor in Everett in 2022 (Salame et al., 2023; $n = 440$, 15.4% response rate). A total of four time periods were sampled over a two-week period at each casino.

Patron Surveys accomplish several goals related to both the social and economic impacts of casino introduction, particularly the economic impacts. More specifically, Patron Surveys help establish:

1. The geographic and demographic characteristics of casino patrons

- The geographic origin of patrons helps identify whether the impacts of the facility are localized, statewide, or multistate. Of particular importance is the extent of patronage from out-of-state residents, as this represents **new revenue/spending** to the state, which has important economic value.
- The age, gender, race/ethnicity, and income of patrons helps establish whether casinos disproportionately attract and impact certain subgroups of the population more than others.

2. Casino spending patterns of patrons

- Patronage does not necessarily directly translate into expenditure, so assessing the self-reported spending patterns of patrons as a function of geography and demography is also important.

3. Off-site expenditure

- The magnitude of off-site revenue from people who patronized neighboring businesses as part of their visit to the casino is another important economic benefit that needs to be assessed.

4. Casino recapture and outflow

- In addition to new spending from out-of-state patrons, another significant economic benefit is the **recaptured spending** of Massachusetts residents who indicate they would have spent their money at out-of-state casinos if the new casino did not exist.
- The extent to which Massachusetts residents are still patronizing out-of-state casinos is also important to assess.

5. The amount of reallocated spending

- Some casino-related spending is cannibalized from other sectors of the economy. The magnitude of this **reallocated spending** can be estimated from the self-report of casino patrons about what things they are spending less money on due to their casino gambling.

6. Awareness and impact of responsible gambling measures (e.g., GameSense, Play-My-Way)

- This information is not central to the socioeconomic impacts of casinos but has useful ancillary value.

While Patron Surveys successfully capture all of the above information, they do have some limitations:

- The high refusal rate requires a complicated weighting adjustment.
- They are unlikely to sample 'high rollers.'
- The sample is significantly biased toward frequent patrons who are more likely to be present during the sampling periods.¹ However, the sample is fairly representative of people who contribute the most to casino revenue, which is arguably more important.
- The relatively small sample sizes collected precludes reliable estimates of MA county origin.
- They cost ~\$70,000 to conduct for a single casino and are very resource intensive.
- They utilize unreliable self-report for casino spending, off-site expenditure, monetary recapture and outflow, reallocated spending, and awareness and impact of responsible gambling measures.

Now that surveys have been conducted at all three venues, it is time to 'take stock' of their value relative to other methodologies prior to implementing any new surveys of these venues. That is the purpose of the present document: to evaluate alternative methods of capturing the six types of information listed above to inform our ongoing research into the social and economic impacts of gambling in Massachusetts.

License Plate Counts

License Plate Counts were done concurrently with the Patron Surveys at each of the three MA casinos ($n = 4,800$ at PPC; 10,194 at MGM; and 4,628 at EBH) so to evaluate their utility relative to the Patron Surveys and to provide some indication of the accuracy of prior estimates of out-of-state casino expenditure reported by the Northeastern Gaming Research Project (NEGRP) conducted by the Center for Policy Analysis at the University of Massachusetts at Dartmouth. NEGRP carried out license plate surveys at New England casinos every two years between 1995 and 2015.² These surveys formed the basis for assumptions about the amount of Massachusetts gambling revenue being lost to other states that could be potentially recaptured with the creation of Massachusetts casinos.

The main advantages of license plate surveys are as follows:

- They do a good job of identifying the percentage of MA versus non-MA residents as well as the reported spending of MA versus non-MA patrons. Their match to these figures in the Patron Surveys varied from 0.95 to 1.07.

The main disadvantages of license plate surveys are as follows:

- They do not capture the small percentage of people who did not drive to the venue.
- Demographic profile of patrons is not assessed.
- The sample is significantly biased toward frequent patrons who are more likely to be present during the sampling periods. However, the sample is fairly representative of people who contribute the most to casino revenue, which is arguably more important.
- They do not assess off-site expenditure.
- They do not assess monetary recapture and outflow.
- They do not assess reallocated spending.
- They do not assess awareness and impact of responsible gambling measures.

¹ For example, if patronage consists of 3 people who attend every day and 7 people who attend once a week, then the majority of a sample collected on any given day will consist of the daily attenders, even though they only comprise 30% of the patronage.

² https://www.researchgate.net/publication/237654770_NEW_ENGLAND_CASINO_GAMING_UPDATE_2005
https://www.academia.edu/20173656/Northeastern_Casino_Gaming_Update_2015
<https://archives.lib.state.ma.us/bitstream/handle/2452/38860/ocn319062297.pdf>

Online Panel Surveys

Online panels are commonly used in market research and increasingly in academic studies (Callegaro et al., 2014; Göritz et al., 2007). The advantages of online panel surveys are that (a) the validity of answers to ‘sensitive questions’ (e.g., gambling) tends to be higher in self-administered formats (Tourangeau & Smith, 1996; van der Heijden, van Gils, Bouts, & Hox, 2000); (b) everyone has agreed and expects to be contacted (unlike telephone surveys); (c) the results can be obtained in a much shorter period of time; and (d) they are much less expensive than probability sampling surveys (Olson et al., 2021).

The SEIGMA team has conducted online panel surveys concurrently with general population surveys both in 2013/2014 (Baseline General Population Survey (BGPS) and Baseline Online Panel Survey (BOPS))³ and again in 2022 (Follow-Up General Population Survey (FGPS) and Follow-Up Online Panel Survey (FOPS)).⁴ The SEIGMA team has also collected online panel data for 2023 (Online Panel Survey 2023 (OPS23)) primarily for the purposes of identifying population level changes in gambling attitudes, participation and harm since the 2022 FOPS. However, as approximately 1,000 casino patrons are typically captured in our sample of 3,000+, it is also the case that we routinely collect relevant demographic and spending patterns for a sizable sample of MA casino patrons. To potentially further increase the utility of the Online Panel Surveys for the purposes of addressing some of the goals of the casino patron survey, we have added several questions pertaining to recapture and reallocation of spending (that have historically been utilized in the casino patron surveys).

The main advantages of Online Panel Surveys as a potential alternative to Patron Surveys are as follows:

- Low cost, as they are being collected in any case.
- Provide a more representative sample of the entire population of MA casino gamblers.
- Can be utilized for other purposes, such as sports betting patronage and spending.

The main disadvantages of Online Panel Surveys are as follows:

- They do not capture non-MA residents (and it would be too costly to additionally conduct online panel surveys in each of the neighbouring states).
- While online panels are usually stratified to be demographically representative of the population, behavioral differences typically exist (including higher rates of gambling and problem gambling) that cannot be fully corrected for by demographic or other types of weighting (e.g., Pickering & Blaszczyński, 2021; Williams, Lee & Back, 2013; Williams, Zorn, Volberg & Evans, 2023). (Note: assuming these biases are constant, they can still be used to assess changes from year to year).
- They rely on self-report for assessment of casino spending, off-site expenditure, monetary capture and outflow, reallocated spending, and awareness and impact of responsible gambling measures.

Smartphone Location Data

In 2021 approximately 85%+ of U.S. adults reported having a smartphone (Pew Research Center, 2021).⁵ Importantly, smartphones typically contain several apps that track their location (e.g., Google Maps) with very few people turning off their cell phones and/or disabling all the tracking apps. This fact has led to the collection of smartphone location data to tabulate such things as recreational area visitation estimates, wildfire evacuation tracking, and pandemic intervention monitoring. Scientists at the U.S. Environmental Protection Agency

³ BGPS: https://www.umass.edu/seigma/sites/default/files/Updated%20BGPS%20Report_Final.pdf

BOPS: https://www.umass.edu/seigma/sites/default/files/Baseline%20Online%20Panel%20Report_2017-01-10.pdf

⁴ Reports forthcoming in 2023.

⁵ Pew Research Center 2021 <https://www.pewresearch.org/internet/fact-sheet/mobile/>

validated the correspondence of smartphone location data against recorded observational counts at various areas (Merrill et al., 2020).

AirSage⁶ is a telecommunications company based in Atlanta that began collating location data in 2016 and now has more than 5 billion location signals from more than 200 million mobile devices. They collect, curate, and analyze large volumes of location data to sell to businesses and universities for commercial or research purposes. These curated datasets do not track the movement of individuals but rather the aggregated movement of groups of people in a given place and time. These datasets do not contain any personally identifiable information and cannot be traced back to an individual device thereby adhering to the data privacy laws that are in place in the United States. Members of the SEIGMA team recently utilized AirSage data to tabulate the geographic origin of patrons at nine casinos in CT, MA, RI and NY for 14 consecutive days in January 2023.

The main advantages of Smartphone Location Data as a potential alternative to Patron Surveys are as follows:

- Enormous sample size of hundreds of thousands of smartphones.
- Comprehensive and simultaneous identification of the state and county origins of casino patrons in multiple casinos.
- Outflow of casino spending to out-of-state casinos reliably assessed and recapture can be assessed by yearly changes in this outflow.

The main disadvantages of Smartphone Location Data are as follows:

- It does not identify the demographic characteristics of patrons.
- The sample is significantly biased toward frequent patrons who are more likely to be present during the sampling periods. However, the sample is fairly representative of people who contribute the most to casino revenue, which is arguably more important.
- Some difficulty involved in distinguishing employees from patrons.
- It does not assess off-site expenditure (although it would be possible to create additional sampling areas in non-casino venues). (Note that the cell phones detected in casinos are not ‘followed’).
- It does not assess reallocated spending.
- It does not assess awareness and impact of responsible gambling measures.

MA Player Card Data

Casino player cards, also known as reward or loyalty cards, record the types of games played, how much was wagered, how much was won/lost, and how much time was spent playing each type of game. These data can provide a wealth of information about behavioral patterns that could be used to statistically identify patterns related to subsequent problems (e.g., escalation of play; effect of reward benefits; self-exclusion). Player card data for the three Massachusetts casinos will be available to researchers sometime in the near future.

The main advantages of MA Player Card Data as an alternative to Patron Surveys are as follows:

- The data would be free to use.
- It is an enormous dataset that provides the most detailed and accurate accounting of casino spending by MA casino patrons.

The main disadvantages of MA Player Card Data are as follows:

- It captures very few non-MA patrons.

⁶ <https://www.airsage.com>

- Only 75% of MA patrons have a Player Card.
- The data is usually de-identified, precluding identification of the demographic profile and MA county origin of members.
- It does not assess off-site expenditure.
- It does not assess monetary recapture and outflow.
- It does not assess reallocated spending.
- It does not assess awareness and impact of responsible gambling measures (although PlayMyWay data might be available).

Surveys of MA Player Card Members

A variation of the direct utilization of Player Card Data is conducting surveys of Player Card Members, which has been successfully undertaken by Dr. Michael Wohl.

The main advantages of Surveys of MA Player Card Members as an alternative to Patron Surveys are as follows:

- They would be relatively inexpensive (~\$10K for a sample of 1,000).
- Similar to Patron Surveys and Online Panel Surveys, they can provide self-report data on casino spending, off-site expenditure, casino recapture and outflow, reallocated spending, and awareness and impact of responsible gambling measures.

The main disadvantages of Surveys of MA Player Card Members are as follows:

- They would capture very few non-MA patrons.
- The representativeness of the obtained MA sample is unclear, but is probably biased in some way.
- They rely on self-report for assessment of casino spending, off-site expenditure, monetary capture and outflow, reallocated spending, and awareness and impact of responsible gambling measures.

SUMMARY AND CONCLUSION

Table 1 provides a summary of the strengths and weaknesses of each method, with green shading indicate a strength, yellow indicating some weakness, and red indicating a serious weakness. As can be seen, each data source has a different profile of strengths and weaknesses and all data sources have one or more serious weaknesses. *However, it is our view that going forward, the two data sources that would be most (a) cost efficient and (b) capture all the desired information would be Online Panel Surveys combined with Smartphone Location Data. Thus, it is the intention of the SEIGMA team to test the viability and utility of this approach as a potential replacement to the Patron Surveys.*

	Patron Surveys	License Plate Counts	MA Online Panel Surveys	Smartphone Location Data	MA Player Card Data	Surveys of MA Player Card Members
Size and Representativeness of Sample	Oversamples regular patrons	Oversamples regular patrons	Doesn't capture non-MA patrons	Oversamples regular patrons	Doesn't capture non-MA patrons	Doesn't capture non-MA patrons; unknown MA representativeness
Cost	\$70K per casino	\$5K per casino	Already being collected; no additional cost	\$35K for all MA, CT, RI, and some NY casinos (n = 9 in total)	free	\$10K for 1,000?
1. Geographic & Demographic Characteristics		Captures geographic origin but not demographics	Doesn't capture non-MA patrons	Captures geographic origin but not demographics	Doesn't capture non-MA patrons	Doesn't capture non-MA patrons
2. Casino Spending	Self-report	Have to assume equal spending per person	Self-report	Have to assume equal spending per person		Self-report
3. Off-Site Expenditure	Self-report		Self-report			Self-report
4. Casino Recapture & Outflow	Self-report	Could be assessed by yearly changes	Self-report	Outflow assessed; recapture assessed by yearly changes		Self-report
5. Reallocated Spending	Self-report		Self-report			Self-report
6. Awareness & Impact of RG Measures	Self-report		Self-report			Self-report

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