



Are EGM Policy Changes for Consumer Protection or Generating Greater Tax Revenue for the Government in the Northern Territory, Australia?

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1 Background

Electronic gambling machines (EGMs) are ubiquitous in hotels (also known as pubs or bars) and clubs (like pubs or bars but usually affiliated with a sporting club or code and usually not for profit) in Australia, except one jurisdiction, Western Australia. EGMs are also available in thirteen casinos, located in every jurisdiction. Across Australia in 2017/18, less than seven per cent of approximately 194,000 EGMs were housed in casinos, however, this varies considerably across jurisdictions. In 2017/18, the majority of EGMs in Australia were in New South Wales (93,600; 48%), Queensland (46,220; 24%), Victoria (29,000; 15%), and South Australia (12,970; 7%). In 2017/18, 71% of all gambling losses were to EGMs, with over 60% of gambling losses coming from EGMs in hotels and clubs. Part of the reason for such a high contribution to gambling losses by EGMs is the ease of accessibility users have, as hotels and clubs in which they are housed are in suburban areas in all large cities, and in smaller towns, where a hotel or club is often the main meeting place. It is this accessibility that contributes to differential EGM losses across venues and jurisdictions in Australia (Marshall et al., 2004; Thomas et al., 2011).

EGMs have long been known to be the riskiest form of gambling in Australia, first determined by the 1999 Productivity Commission Report into Gambling and again in the follow-up report ten years later (Productivity Commission, 1999; Productivity Commission, 2010). Empirical research has further confirmed

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that EGMs have the strongest association with problem gambling in Australia (Markham et al., 2017; Delfabbro et al., 2020). So, as EGMs losses continue to rise around Australia, and armed with the knowledge that EGM gambling is most associated with harm, the question needs to be asked, are state and territory governments doing enough to reduce harms and problem gambling risk associated with EGM gambling? Before answering this question, it is useful to briefly review the National Standards that EGMs must conform to in Australia and New Zealand.

2 EGM characteristics and the National standard

EGMs were originally a mechanical-based machine with spinning reels inside of them, each with several different symbols. The machines had a metal arm located on the side that could be pulled, causing the reels to turn and when symbols lined up, the gambler would win. However, since the 1980s, EGMs have become more sophisticated and now run from internal computers, with colourful video terminals which give the impression of reels turning. However, the actual mechanisms, going on behind the colourful display, operate independently to what users see on the display (Livingstone, 2017). EGMs also include a range of sounds that occur in general play, when a user loses, wins, or comes out even.

In Australia (and New Zealand), EGMs must conform to the Australia/New Zealand Gaming Machine National Standard, which determines what is allowable (Queensland Government, 2016, on standards, see also Casey, this volume). It covers various parameter settings including return to user (player) ratio (RTP), maximum bet per spin, near misses, losses disguised as wins (LDWs), jackpots, and how much money can be loaded into the EGM (the ‘load-up limit’) and in what denomination of notes or coins (Queensland Government, 2016; Livingstone, 2017). However, in addition to the National Standards, each state and territory apply their own guidelines, which creates a complicated patchwork of rules and regulations across Australia. A similar patchwork of regulation and legislation applies to all gambling products across Australia, as gambling taxes, under the Australian constitution, are a state and territory tax.

Section 1.7 of the national EGM Standard outlines the intent of the document, and states that the ‘fundamental goal of the Standard is to ensure that gaming machines, games and related equipment are designed to: a) be fair, b) be secure, c) be auditable, and d) minimise any potential for harm to players’ (Queensland Government, 2016, p. 5). As per Sect. 1.11 of the Standards, they are revised

and maintained by a working party of ‘regulators and gaming machine manufacturers’, while Sect. 1.12 provides a mechanism for the working party to ‘consult with gaming machine testers and other relevant stakeholders’. When revisions of the Standards occur, who these other relevant stakeholders are and whether they are consulted is not clear. For example, does it include users of EGMs, particularly those experiencing harm from their gambling? Does it include academics who specialise in understanding the risks and harms associated with different forms of gambling? Over nearly two decades working in gambling research in the NT, I am unaware of any government consultations with community and relevant stakeholders regarding changes in EGM policy (or from other gambling researchers around Australia). For a gambling product with a Standard of having a goal of minimising harm to users, it is somewhat contradictory that EGMs are the riskiest form of gambling in terms of harms and problem gambling risk across all commercially available gambling types in Australia, and this has long been known and confirmed with recent research (Productivity Commission, 2010; Delfabbro et al., 2020).

The structural characteristics of EGMs for which the National Standard applies can influence how a user of EGMs gambles, and consequently how much they lose (or win). For example, LDWs have been shown to increase the chances that an EGM gambler will continue to gamble after a loss (Leino et al., 2016), as have near misses (Barton, Yazdani et al., 2017). Interesting that disguising EGM losses by playing a winning sound is considered ‘fair’ and will ‘minimise harm to players’, and similarly, rigging the reels to show that someone just missed out on lining up symbols (near misses), when in reality, the machine was designed to do this, precisely to mislead the user. It is by no accident that EGMs have a range of structural characteristics that manufacturers have developed over time which have been specifically developed to ‘maximise spending’ and ‘time on device’ per user (Livingstone, 2017; Schüll, 2012). The review by Livingstone (2017) on structural characteristics of EGMs in Australia provides an excellent summary for readers wishing to better understand how these factors affect a user’s experience gambling on EGMs.

3 Aims and objectives

In the following, I present a case study of EGM policy change in the NT, Australia, and present empirical data from the 2015 and 2018 NT Gambling Prevalence and Wellbeing Surveys and EGM user loss data obtained from the

NT Government (NTG). I wish to answer the question, is the NTG enacting policy to improve consumer protection, and reduce harms and problem gambling risk associated with EGM gambling, or is the policy change designed to increase losses and therefore increase government tax revenues and reliance on EGMs? First, I outline EGM policy changes over the last several years. Second, I present EGM user loss data to provide evidence to test whether policy changes were associated with reduced/increased harm and a decrease/increase in EGM user losses. Third, month on month (compared with previous year) EGM user losses are examined to determine the effect of venue shutdowns and subsequent reopening due to COVID-19 in 2020. Fourth, I use empirical data from two surveys asking EGM gamblers how the policy changes affected their gambling. Lastly, I use attitudes to gambling questions to support the idea that government could reduce EGM numbers and accessibility without public backlash.

4 A case study of EGM policy change: The Northern Territory, Australia

4.1 Study site

The Northern Territory (NT) is Australia's smallest federal jurisdiction by population, with a population of around 250,000 in 2021, but it has many demographic and socioeconomic differences compared with other jurisdictions (Australian Bureau of Statistics, 2017b). Australia's Aboriginal and Torres Strait Islander (respectfully Indigenous from hereon) population make up approximately three per cent of Australia's total population, but in the NT, make up around 30% of total population and 25% of all adults (Australian Bureau of Statistics, 2017a, b). Indigenous people in the NT speak over 30 different languages and experience significant socioeconomic and health disadvantage compared with other Australians (Australian Institute of Health & Welfare, 2015). About 70% of the 60,000 Indigenous population live in over 100 discrete Indigenous communities with populations ranging from 100 to 2000 spread all over the NT, though most of these communities' range in population from 200 to 500 people (Australian Bureau of Statistics, 2007). Previous research has found that Indigenous gamblers in the NT have a preference for EGM gambling, and that as a group, experience significantly higher levels of problem gambling and harm from gambling than other Australians (Young et al., 2007; Stevens & Bailie, 2012; Stevens et al., 2017; Stevens et al., 2020). The NT also has a large population of offsite mining workers that have large disposable incomes and time due to the fly-in fly-out

nature of their work, and this group has also been found to be more susceptible to gambling problems (Doran & Young, 2010; Joyce et al., 2013; Lifeline WA, 2013). In summary, the NT has a younger population than other Australian jurisdictions, and specific socio-demographics that are risk factors for gambling harm.

4.2 Data collection and analysis

The 2015 and 2018 NT Gambling Prevalence and Wellbeing Surveys were carried out from October to November using random dialling from a dual frame (mobile and landline) samples with sample sizes of 4,945 and 5,000 respectively. Both surveys were weighted to the estimated resident population by age, sex, and region, for the midpoint of the year, as generated by the Australian Bureau of Statistics. Both surveys included a sub-sample, where respondents answered several other questions related to health risk factors. The 2018 sample had a larger mobile phone sample (71%) compared with the 2015 survey (24%). Full survey methodology can be found in the main survey reports (Stevens et al., 2017, 2020). EGM data on player losses in the NT is collated by a private company before being provided to the NTG, who supplied these data after a data request was made. See Stevens and Livingstone (2019) for more details on EGM data. All analyses of survey data were on population weighted data, with standard errors adjusted for the survey design.

4.3 EGM policy changes in the NT

Over the last decade there have been several EGM-related policy changes, though not all changes were directly aimed at gambling on EGMs. They can be summarised as follows:

- 1 January 2010: Smoking bans in hotels, clubs, and casinos (indoor venues).
- 28 May 2013: Legislation passed allowing for ‘note acceptors’ to be installed on EGMs, allowing gamblers to insert up to 640 EUR (\$1000) in any denomination notes in a single ‘load-up’. Previously users of EGMs had to insert \$1 coins, with a maximum insertion of 160 EUR (\$250).
- July 2015: Previous cap on the number of EGMs in hotels lifted from 10 to 20, and 45 to 55 in clubs.

- June 2018: Ticket-in Ticket-out (TITO) machines and reader on EGMs. The TITO system allows users to load up money through a terminal (separate to the EGM), which then provides a readable ticket (barcode) with the amount inscribed. This ticket can then be scanned at an individual EGM, with the inscribed amount available to gamble with. Winnings can also be obtained from an EGM the same way, with an inscribed ticket printed from the EGM, which can then be taken to another machine and scanned for more gambling or taken to a terminal and cashed out. Tickets expire after one month.
- 23 March 2020 to 5 June 2020: COVID-19 venue shutdown and reopening. There were several factors associated with the shutdown and reopening that may affect EGM user losses. EGM gamblers not spending money gambling during the shutdown, then insert that money into EGMs, leading to increased losses compared with previous year. Additional government benefits to offset economic effects of COVID-19 (for unemployed and to support workers in jobs) may have been spent gambling.

As with previous EGM policy changes in the NT, there was no consultation on TITO machines and information on when the policy change occurred and what exactly the TITO concept is, was only provided after repeated requests (and several months wait) to the government.

5 Results

5.1 EGM user losses

Figure 12.1. shows annual Consumer Price Index (CPI) adjusted (real) EGM user losses from 2003 to 2020, along with information on dates for policy changes. A more nuanced analysis of these data can be found in Stevens and Livingstone (2019), which presents EGM losses broken down by venue size (and also includes user losses from two casinos), though it only includes EGM data to 2017. The effect of the smoking ban is clearly visible on EGM user losses, with an immediate 21% drop in 2010, and continued decreases till 2013, at which time there had been a 30% drop in real user losses compared to 2009. The effect of smoking bans indoors in other jurisdictions also led to a decline in EGM user losses. In New South Wales, there was a 13% drop in the first year of the indoor smoking ban, in Victoria 11%, Queensland 8%, South Australia 7%, while in Tasmania it was 15% (Queensland Government Statistician's Office - Queensland Treasury, 2019). A possible reason for the differences across jurisdictions is that smoking

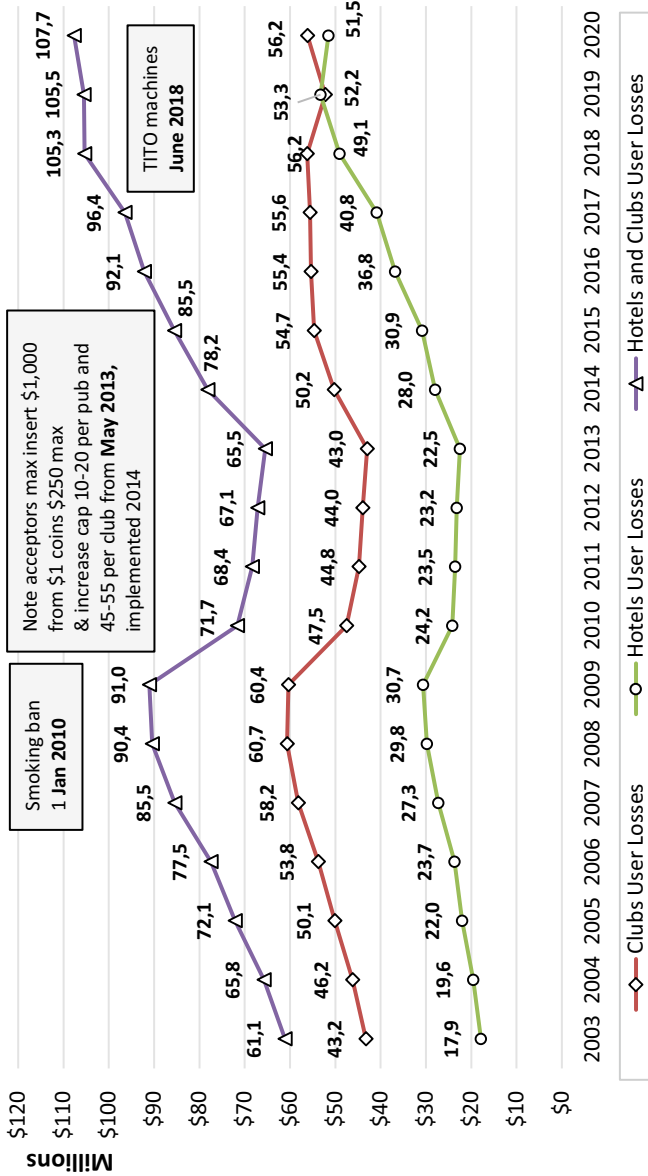


Fig. 12.1 Northern Territory CPI adjusted EGM user losses in hotels and clubs, 2003–2020

rates in the NT and Tasmania were higher than in other jurisdictions (Australian Institute of Health & Welfare, 2011).

The effect of the installation of note acceptors is also clearly visible, with a 19% increase in user losses from 2013 to 2014 and continued increases at around eight per cent per annum up until 2018, before slowing in 2019 and 2020. While EGM numbers on not presented, throughout this period, the number of EGMs increased rapidly, particularly in 2016 and 2017 (see Fig. 2 in Stevens and Livingstone (2019)), where EGM numbers increased in hotels and clubs from 1,173 to 1,550). Being a small jurisdiction, the NT has a relatively low change in number of venues from year to year, so it is likely that the levelling out in EGM user losses in 2019 and 2020 is a result of either (i) EGM users becoming used to the note acceptors, and controlling their spending better after initially losing more when note acceptors were first installed, and/or (ii) reflect that most hotels and clubs in the NT had increased their EGM numbers to the maximum according to the new cap (10 to 20 for hotels and 45 to 55 for clubs) or close to it. Supporting this, Stevens and Livingstone (2019) found that by 2017, 85% of EGMs located in clubs had installed note acceptors, with this being greater than 90% in clubs with 45 or more EGMs, and 78% of EGMs in hotels.

Little comment can be made on the effect of TITO machines on EGMs in the NT, as at the time of writing there is no information on how many venues and machines had installed the capability. It is likely that larger venues were able to install these machines faster than smaller venues, similar to what was found with note acceptors, and that this likely occurred in the COVID-19 shut down on venues.

Figure 12.2. shows month-on-month real EGM user losses for 2019 and 2020 (up to October, as this was the most recent available data at the time of writing), which shows the effect of COVID-19 related shutdowns of EGM venues on EGM user losses. For the months of January and February in 2020, user losses were around five per cent higher than in 2019, while the effect of the 23 March shutdown is obvious, with EGM user losses falling from 5.5 million EUR (\$8.5 million) in March 2019 to 3.6 million EUR (\$5.7 million) in March 2020, a 32% decrease due to venue closures. On reopening, there was a 23% increase in user losses in June 2020 [7 million EUR (\$11.0 million)], compared with June 2019 [5.7 million EUR (\$8.9 million)], while for the months of July, August, September, and October EGM user losses were 69%, 42%, 53% and 51% higher than the previous year's equivalent months. These increases saw an extra 14 million EUR (\$22 million) lost to EGMs in the months of June to October, compared with the previous year, equating to an additional 94 EUR (\$146,650) extra per day lost. Several possible factors could be behind this large increase. First, the Australian

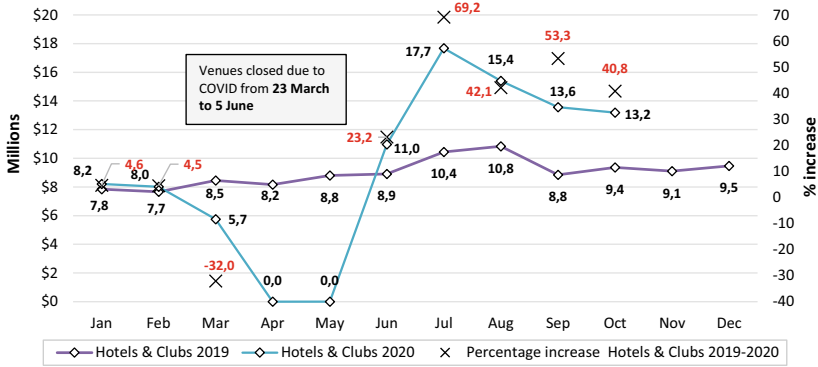


Fig. 12.2 Northern Territory CPI adjusted EGM user losses in hotels and clubs, month on month 2019–2020

Government provided all unemployed people on government benefits an additional 480 EUR (\$750) per fortnight, essentially doubling the usual amount this group receives, and some of this additional money may have been gambled. Second, EGM gamblers saved the money over the period of COVID-19 closedown and spent this upon venue reopening. Third, the combination of policy changes, including the change to cashless TITO options which began in June 2018 may have been fully implemented and installed throughout 2020, possibly while the venues were closed. More recent data is needed to assess this. If user losses levelled back out or declined after December 2020 (when extra government benefits stopped), then it is quite reasonable to assume that the extra unemployment benefits, or at least some, was being lost to EGMs. Future surveys in the NT will probe EGM gamblers on their spending once venues reopened after COVID-19.

5.2 Impact of policy changes on EGM gamblers

Stevens and Livingstone (2019) analysed EGM user loss data and gambling prevalence survey data from 2005 and 2015 to estimate the effect of the installation of note acceptors on EGMs and the increased cap had on user losses among EGM gamblers in the NT. They estimated that in real dollars, EGM gamblers experiencing problem gambling increased their annual losses from between 20,000 EUR (\$30,915) and 25,000 EUR (\$39,748) in 2005, to between 26,000 EUR (\$41,054) and 34,000 EUR (\$53,362) in 2015. This study concluded that

the increased load-up was most likely the cause behind a spike in EGM user losses in the three years after the note acceptors were installed. Given continued increasing trend in EGM user losses seen in Fig. 12.1., it is likely that EGM at-risk gamblers are losing more since the introduction of note acceptors, increased EGM numbers, and possibly with the introduction of TITO, allowing cashless gambling, but with no money tracking system for gamblers.

The 2018 NT Gambling Prevalence and Wellbeing Survey provides further evidence that the installation of the note acceptors is linked to increases in EGM user losses, gambling-related harms, and problem gambling risk (Stevens et al., 2020). Monthly EGM gamblers were asked 'did the installation of note acceptors change how much you spent on EGMs' (increase, no change, decrease, new EGM user), followed by 'what the largest amount of money you have ever loaded into an EGM in the last year', and lastly, 'whether you experienced negative consequences as a result of this load-up'. Of 9,340 monthly EGM gamblers, 31% increased their spending because of the increased load-up available associated with note acceptors. For EGM gamblers less than 30 years, and those 30 to 49 years, 49% and 41% respectively said note acceptors led to an increase their spending. Self-reported spending for EGM gamblers who indicated note acceptors led to an increase in spending was 6,000 EUR (\$9,469) per annum, compared with 2,800 EUR (\$4,447) for those who indicated note acceptors made no change to their spending. EGM gamblers who inserted 190 EUR (\$301) or more in a load up had an average self-reported spend of 10,000 EUR (\$15,622) per annum, compared to less than 2,500 EUR (\$4,000) for those inserting 65 EUR (\$100) or less. Of note, the 31% of monthly EGM gamblers that said note acceptors led to an increase in spending made up 49% of self-reported expenditure on EGMs (Stevens et al., 2020).

When monthly EGM gamblers in the 2018 NT survey were asked about their largest load-up, 77% indicated that it was less than 65 EUR (\$100), with only 10% indicating that it was greater than 190 EUR (\$301). However, this varied significantly by problem gambling risk as measured using the Problem Gambling Severity Index (PGSI), with 90% of no risk gamblers inserting less than 190 EUR (\$100), compared with 55% of gamblers experiencing problem gambling, 73% moderate risk gambling and 77% low risk gambling. The distribution of problem gambling risk by the maximum EGM load-up limit is also instructive to ascertain what level of harm is acceptable. Approximately six per cent of all monthly or more EGM gamblers were classified as experiencing problem gambling, compared with four per cent of EGM gamblers who had a maximum load-up of less than 65 EUR (\$100), 23% for those inserting 65 EUR (\$101) to less than 190 EUR (\$301), and 42% of those with a maximum load-up of 190

EUR (\$301) or more. In addition to the classification of problem gambling, 53% of EGM gamblers inserting 190 EUR (\$301) or more indicated that they had experienced a negative consequence as a result of this large load-up, dropping to 22% for those inserting 65 EUR to 190 EUR (\$101 to \$300) and reducing again to 13% for those inserting less than ~65 EUR (\$100) (Stevens et al., 2020).

Of monthly EGM gamblers classified as experiencing problem gambling, 68% indicated that note acceptors led to an increase in their spending, compared with nine per cent of no risk monthly EGM gamblers. In 2015, 2.7%, 7.8% and 18.6% of EGM gamblers were classified as experiencing problem, moderate risk, and low risk of problem gambling, respectively, while in 2018 it increased in all categories to 6.2%, 11.3% and 23.1% respectively; a doubling of EGM gamblers experiencing problem gambling. For comparison, in 2018, 0.3%, 2.6% and 9.3% of non-EGM gamblers were classified as problem, moderate risk, and low risk of problem gambling respectively. Lastly, 40% of EGM gamblers in 2018 were classified as at-risk (PGSI one or more) of problem gambling, compared with just over 12% of non-EGM gamblers (Stevens, Gupta et al., 2020).

If the goal is to minimise harms associated with EGM gambling, then based on the above evidence, a maximum load up limit of less than 65 EUR (\$100) would reduce the risk of gambling-related harms, particularly for EGM users classified as experiencing problem or moderate risk of problem gambling. So, what would be a suitable maximum amount to load into an EGM? An independent federal commission in Australia, the Productivity Commission, came up with a maximum load-up limit of 13 EUR (\$20), which they say ‘would make changes to note acceptors redundant’ (Productivity Commission, 2010, 11.1). Currently in Australia, the maximum load up limit varies by jurisdiction, with New South Wales, the largest EGM market allowing up to 4,800 EUR (\$7,500) load-up, while Queensland (third largest market) allows up to 65 EUR (\$100) load-up, which is currently the lowest load-up limit across all Australian jurisdictions. The 640 EUR (\$1,000) load-up in the NT is the same in South Australia and Victoria.

More evidence supporting the case that increased user losses were a result of policy changes can be seen in median annual spend for EGM gamblers who nominated EGMs as their highest spend activity. Table 12.1. shows median annual spend for gamblers with a highest spend on EGMs was 160 EUR (\$250) in 2015, increasing to 420 EUR (\$650) in 2018, and that the 25th, 75th and 90th percentiles more than doubled, indicating a much higher percentage of EGMs gamblers are spending more.

The final piece of empirical evidence supporting the notion that the change in EGM policy increasing load-up through note acceptors, increasing EGM numbers

Table. 12.1 Median annual spend, 25th, 75th and 90th percentiles for gamblers nominating EGMs as their highest spend activity, 2018 highest spend EGM gamblers (subset)

| | Median | 25th percentile | 75th percentile | 90th percentile |
|------|--------|-----------------|-----------------|-----------------|
| 2018 | \$600 | \$150 | \$2,600 | \$7,200 |
| 2015 | \$250 | \$100 | \$1,040 | \$2,400 |

per venue, and TITO machines has led to greater EGM spending and consequent harm is seen when looking at the at-risk gamblers population (one or more on PGSI). All at-risk gamblers were asked from a list of 16 harms across the domains of financial, emotional/psychological, criminal, family/relationships, and work/study, how often their gambling caused the harm (note that in 2015 respondents were not asked how often the harm occurred, just whether they experienced the harm in the last year). Figure 12.3. shows estimates of the number of harms from own gambling by EGM gambler status for 2015 and 2018. First, there was a significant increase in harms from own gambling for EGM at-risk gamblers from 2015 to 2018 (30% up to 54%), but not among non-EGM at-risk gamblers (19% up to 31%). Second, EGM at-risk gamblers (54%) in 2018 were significantly more likely than non-EGM at-risk gamblers (31%) to be harmed from their own gambling, while in 2015 the difference did not reach significance, though a greater percentage of EGM at-risk gamblers (30%) were harmed from their own gambling compared with non-EGM at-risk gamblers (19%) (Stevens et al., 2020).



** p<0.01 Significant difference between EGM gambler and non-EGM gambler; ns = not significant

Fig. 12.3 Estimate (standard error) of number of harms from own gambling by EGM status and survey year, 2015 and 2018 at-risk (PGSI 1 or more) gamblers

5.3 Community attitudes towards gambling

So, is it politically unpopular to reduce EGM numbers, make them safer, and reduce associated harms, or are policy changes associated with raising more revenue for the government from gambling taxes among an indifferent population? The NT gambling surveys asked (i) whether to change (increase, decrease, no change) the number of EGMs in hotels and clubs (separately), (ii) whether there is too much gambling in NT hotels and clubs (separately), and (iii) whether EGM gamblers should have to set mandatory limits on time and money.

Between 2015 and 2018 there was a significant increase in the percentage of adults stating that they would like to see a decrease in EGM numbers in hotels (50% to 56%). This change was also observed in men, with 51% indicating they would like to see a decrease in EGM numbers in hotels, significantly up from 45% (Stevens et al., 2020). There was an increase in the percentage of adults that indicated they would like to see a decrease in EGM numbers in clubs (53% to 55%), though this increase was not statistically significant. Among survey respondents that had experienced harm from someone else's gambling, 76% and 73% would like to see a decrease in EGM numbers in clubs and hotels respectively. This is not surprising and is consistent with the finding that of the eight per cent (14,500) of the NT adult population that had been harmed by someone else's gambling in the last year, 70% named EGMs as the type of gambling the person who harmed them was doing (Stevens et al., 2020).

Most people agreed or strongly agreed that 'there is too much gambling in hotels' (61%) and 'there is too much gambling clubs' (61%), and a further 16% were neutral (for clubs and hotels). Women were significantly more likely to agree or strongly agree with the statement than men for hotels (68% *cf.* 55%) and clubs (67% *cf.* 56%). It was again clear that those who had been harmed by someone else's gambling were significantly more likely to have a negative attitude towards gambling as between 70 and 75% of those harmed by someone else's gambling agreed or strongly agreed that there was too much gambling in NT hotels and clubs (Stevens et al., 2020).

Something that could be implemented to reduce EGM gambling harm and has been suggested numerous times in Australia and across multiple jurisdictions is having a card that allows EGM gamblers to set limits on time and money spent (on a daily, weekly and/or monthly basis). A recent inquiry into the suitability of Crown Resorts (a large multinational company specialising in casino gambling and entertainment) to obtain a new licence to operate a casino in Sydney, New South Wales recommended a 'gambling card' due to both harms from EGM gambling and because of the ease with which illegally obtained money

could be laundered through EGMs (Bergin, 2021a, b). The 2018 NT gambling survey asked, ‘whether people in the NT should have to set limits on time and money spent playing the pokies [EGMs]?’. Sixty-seven percent of adults agreed or strongly agreed that EGM gamblers should have to set limits on time and money to gamble on EGMs, and this was significantly higher among women, with 74% agreeing or strongly agreeing, compared with 62% of men (Stevens et al., 2020). So, in the total population there is strong support for limit setting when gambling on EGMs, but what do EGM gamblers think? Forty-two percent of weekly EGM gamblers agreed or strongly agreed about limit setting, 47% of monthly EGM gamblers, and 60% of less than monthly EGM gamblers, compared with 70% of non-EGM gamblers and 76% of non-gamblers. So, while not totally palatable to all EGM gamblers, it would be unlikely to bother the 73% of EGM gamblers who gamble less than monthly, and it would allow EGM gamblers to better monitor and control their time and money gambling (Stevens et al., 2020).

6 Conclusions

This chapter reported on EGM policy change in a small jurisdiction in Australia and how it affected user losses, problem gambling risk and gambling-related harms. Strong evidence suggests that increasing the amount of money gamblers can load into an EGM and increasing EGM numbers was associated with 1) large increases in users losses; 2) significant increases in problem, moderate and low risk problem gambling; 3) significant increase in harm from own gambling for EGM gamblers; and 4) significant increases in self-reported expenditure and harms associated with increased load-up. The effect of the TITO machines was not clear, though removing cash and an ability to track loss amounts is clearly not in the interests of the gamblers, but is serving the interests of industry and government, if their goal is to increase losses. A simple change that would have virtually no cost to implement would be to reduce the load-up amount to the 13 EUR (\$20), as recommended by Australia’s Productivity Commission (Productivity Commission, 2010). Other structural characteristics that could be changed to reduce gambling harms are slower bet speed, not allowing near misses or losses disguised as wins, reduced opening hours of EGM venues, reduced the maximum bet per spin to 0,60–1,30 EUR (\$1 or \$2) [currently between 3,20–6,40 EUR (\$5 and \$10)], and lastly, limiting linked jackpots. Research has recommended a range of structural reforms that would reduce harms associated with

EGM gambling, though clearly these would impact of losses and subsequent government revenues (Livingstone & Adams, 2011; Livingstone, Rintoul et al., 2019; Stevens & Livingstone, 2019).

Australia has the highest per capita gambling losses in the world at 830 EUR (\$1,292) per person in 2017/18. Of that sum, 420 EUR (\$650) is lost to EGMs in hotels and clubs and a further 170 EUR (\$265) lost to EGMs in casinos, combined to account for over 70% of gambling losses in Australia (Queensland Government Statistician's Office - Queensland Treasury, 2019). EGMs are in nearly all suburban hotels and clubs in every jurisdiction in Australia except Western Australia, making them a highly accessible gambling product. Current legislation and policy to regulate the EGM market is clearly not working, with losses continuing to increase, even though EGM participation is declining, thereby increasing the burden on an ever-diminishing group of EGM gamblers. Much research in Australia has lamented the current efforts by state and territory governments to adequately regulate the EGM market, with the prime emphasis of current approaches focussing on the individual to 'gamble responsibly'. The 'gamble responsible' mantra espoused by industry and agreed to by governments has been shown to contribute to stigma and norms which lead to personal blame and shame, and contribute to negative stereotypes of people with gambling problems (Hing, Russell et al., 2015; Thomas et al., 2016; Miller & Thomas, 2018, see also Besendjak-Valič & Macur, this volume). The focus on individual responsibility has shifted the gaze away from the structural characteristics of EGMs, accessibility, and the environment in which they are played - areas where significant policy change could be made that would reduce harms.

State and territory governments in Australia draw significant revenues from gambling taxes (between eight per cent and 15% of annual budget), but governments also have a duty of care to ensure that legal products are safe for consumers. Currently, we do not have any recent estimates of the social costs of gambling in the NT; however, the NTG has funded two projects which are currently being completed which will give an estimate of costs of gambling-related harms in the NT (due 2021). EGMs have consistently been found to be the riskiest form of gambling in terms of losses, harms, and problem gambling risk, yet no new regulation has focussed on limiting any of these risks. In fact, it appears that all EGM policy enacted over the last decade in the NT has been about increasing government tax revenues through increased EGM user losses. Other legal consumer products that have been found to be dangerous and negatively affect a large proportion of people using them (e.g., tobacco) have significant policy regulation around access, taxation, safety messaging and product visibility, but EGMs are largely exempt from these measures, and it is hard not to view this

cynically that governments are dependent on the tax revenues, at the expense of those gambling on EGMs (and affected others).

While the popularity of EGMs is in decline, their place at the top as the riskiest form of gambling may be coming to an end, with the advent of online gambling and its 24-h, 365-days-a-week availability and continuous betting, whether on online EGMs (or slots) or on the myriad of sports, horse, and dog races. Into the future, gambler beware, as it would appear governments are addicted to gambling taxes.

Declaration of conflicts of interest None to declare. Matt has never received industry funding for research. Matt has in the past and currently receives funding through the NT Government Community Benefit Fund to carry out surveys and research on gambling in the NT. The Community Benefit Fund receives money through a 10% hypothecated tax on EGMs located in the two casinos and hotels, and they fund three streams of grants: gambling research, gambling harm amelioration, and community grants. In the past Matt has received funding from National Health and Medical Research Council Early Career Fellowship (2013–2017), the NT Government Department of Business, Gambling Research Australia, and the New South Wales (NSW) Office of Liquor and Gaming (with this funding coming from hypothecated gambling taxes on EGMs in NSW).

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References

- Australian Bureau of Statistics. (2007). Housing and Infrastructure in Aboriginal and Torres Strait Communities, Australia, 2006. Cat. no. 4710.0. Canberra, Commonwealth of Australia.
- Australian Bureau of Statistics. (2017a). 2016 Census of Population and Housing Aboriginal and Torres Strait Islander Peoples Profile: Northern Territory. Cat No. 2002.0. Canberra, Commonwealth of Australia.

- Australian Bureau of Statistics. (2017b). 2016 Census of Population and Housing General Community Profile: Northern Territory. Cat No. 2001.0. Canberra, Commonwealth of Australia.
- Australian Institute of Health and Welfare. (2011). 2010 National Drug Strategy Household Survey Report. Drug statistics no. 25. Canberra, AIHW.
- Australian Institute of Health and Welfare. (2015). The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015. Cat. no. IHW 147. Canberra, AIHW.
- Barton, K. R., Yazdani, Y., Ayer, N., Kalvapalle, S., Brown, S., Stapleton, J., Brown, D.G., & Harrigan, K.A. (2017). The Effect of Losses Disguised as Wins and Near Misses in Electronic Gaming Machines: A Systematic Review. *Journal of Gambling Studies*, 33, 1241-1260.
- Bergin, P. A. (2021a). *Report of the Inquiry under section 143 of the Casino Control Act 1992 (NSW)*: (Vol. 1). State of NSW.
- Bergin, P. A. (2021b). *Report of the Inquiry under section 143 of the Casino Control Act 1992 (NSW)*: (Vol. 2). State of NSW.
- Delfabbro, P., King, D. L., Browne, M., & Dowling, N.A. (2020). Do EGMs have a stronger association with problem gambling than racing and casino table games? Evidence from a decade of Australian prevalence studies". *Journal of Gambling Studies*, 36, 499-511.
- Doran, B., & Young, M. (2010). 'Mobile mindsets': EGM venue usage, gambling participation, and problem gambling among three itinerant groups on the Sunshine Coast of Australia. *International Gambling Studies*, 10(3), 269–288.
- Hing, N., Russell, A., Gainsbury S., & Nuske, E. (2015). The public stigma of problem gambling: its nature and relative intensity compared to other health conditions. *Journal of Gambling Studies*, 32, 847-864.
- Joyce, S. J., Tomlin, S. M., Somerford, P. J., & Weeramanthri, T. S. (2013). Health behaviours and outcomes associated with fly-in fly-out and shift workers in Western Australia. *International Medicine Journal*, 43(4), 440–444.
- Leino, T., Torsheim, T., Pallesen, S., Blaszczyński, A., Sagoe, D., & Molde, H. (2016). An empirical real world study of losses disguised as wins in electronic gaming machines. *International Gambling Studies*, 16(3), 470–480.
- Lifeline W.A. (2013). FIFO/DIDO Mental Health Research Report, 2013. Perth, RAW Hire, Australian Institute of Management, The Sellenger Centre for Research in Law, Edith Cowan University.
- Livingstone, C. (2017). How electronic gambling machines work: EGM structural characteristics. AGRC Discussion Paper 8. Melbourne, Australian Gambling Research Centre.
- Livingstone, C., & Adams, P. (2011). Observations on the symbiosis between government and private industries for the development of highly accessible gambling markets. *Addiction*, 106(1), 13–14.
- Livingstone, C., Rintoul, A., de Lacy-Vawdon, C., Borland, R., Dietze, P., Jenkinson, R., Room, R., Smith, B., Stooze, M., Winter, R., & Hill, P. (2019). *Identifying effective policy interventions to prevent gambling-related harm*. Victorian Responsible Gambling Foundation.
- Markham, F., Young, M., Doran, B., & Sugden, M. (2017). A meta-regression analysis of 41 Australian problem gambling prevalence estimates and their relationship to total spending on electronic gaming machines. *BMC Public Health*, 17(1), 495.

- Marshall, D. C., McMillen, J., Niemeyer, S., & Doran, B. (2004). *Gaming Machine Accessibility and Use in Suburban Canberra: A Detailed Analysis of the Tuggeranong Valley*. The Centre for Gambling Research, Australian National University.
- Miller, H. E., & Thomas, S. L. (2018). The problem with ‘responsible gambling’: impact of government and industry discourses on feelings of felt and enacted stigma in people who experience problems with gambling. *Addiction Research & Theory*, 26(2), 85–94.
- Productivity Commission. (1999). *Australia’s Gambling Industries: Inquiry Report No.10*. Melbourne, Productivity Commission.
- Productivity Commission. (2010). *Gambling: Productivity Commission Inquiry, Volume 1, Report No. 50*. Canberra, Australian Government.
- Queensland Government. (2016). “Australia/New Zealand Gaming Machine National Standard, 2016”.
- Queensland Government Statistician’s Office - Queensland Treasury. (2019). *Australian Gambling Statistics 35th edition Product Tables 2017-18*. Queensland, Queensland Government Statistician’s Office - Queensland Treasury.
- Schüll, N. D. (2012). *Addiction by Design: Machine Gambling in Las Vegas*. Princeton University Press.
- Stevens, M., & Bailie, R. (2012). Gambling, housing conditions, community contexts and child health in remote Indigenous communities in Australia. *BMC Public Health*, 12, 377.
- Stevens, M., Gupta, H., & Flack, M. (2020). *Northern Territory Gambling Prevalence and Wellbeing Survey Report, 2018*. Darwin, Menzies School of Health Research & the Northern Territory Government.
- Stevens, M., & Livingstone, C. (2019). Evaluating changes in electronic gambling machine policy on user losses in an Australian jurisdiction. *BMC Public Health*, 19(1), 517.
- Stevens, M., Thoss, M., & Barnes, T. (2017). *2015 Northern Territory Gambling Prevalence and Wellbeing Survey Report*. Darwin, Menzies School of Health Research & the Northern Territory Government.
- Thomas, A. C., Allen, F. L., Phillips, J., & Karantzas, G. (2011). Gaming Machine Addiction: The Role of Avoidance, Accessibility and Social Support. *Psychology of Addictive Behaviors*, 25(4), 738–744.
- Thomas, S., Bestman, A., Pitt, H., & David, J. (2016). *Lessons for the development of initiatives to tackle the stigma associated with problem gambling*. Victoria, Australia, Victorian Responsible Gambling Foundation.
- Young, M., Barnes, T., Stevens, M., Paterson, M., & Morris, M. (2007). The changing landscape of Indigenous gambling in Northern Australia: Current knowledge and future directions. *International Gambling Studies*, 7(3), 327–347.



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