**Reviewer’s report**

**Title:** The density of electronic gambling machines and area-level socioeconomic status in Finland: a country with a legal monopoly on gambling and a decentralised system of EGMs

**Version:** 0  **Date:** 23 Apr 2019

**Reviewer:** Charles Livingstone

**Reviewer’s report:**

This is an interesting contribution to the literature in this area. For whatever reason, it is clear that in jurisdictions where EGMs are located in the community (in bars, social clubs, betting shops, supermarkets etc) people living under difficult circumstances are exposed to EGMs more than those enjoying greater comparative advantage, and spend more on these devices, per capita. Why this is so is not entirely clear, although Yucel et al (2018) point to a neuro-socio-environmental model. EGMs can provide relief from stress and other consequences of disadvantage, and the neuro-chemical responses of the striatal dopamine system (for example) provide a plausible pathway for addiction, which will produce greater profits for the operators of EGMs. The authors may wish to reflect on this model. As for reducing accessibility - accessibility is a key risk factor for gambling harm and addiction, and differing forms of gambling produce different levels of risk. For example, lotteries are relatively low risk; EGMs are at the opposite end of the spectrum, along with wagering on racing or sports, and casino table games. However, casino table games are not generally available in community settings and most people never engage with them. Most people still don't engage with EGMs, either, but a sufficiently large proportion of the population do (about 24% of the Finnish population, it would appear, based on the article's introductory comments). Of this group, relatively few would be weekly gamblers, amongst whom the article informs us 21% experience significant harm to be labelled 'problem gamblers'. These statistics are similar to those in many other jurisdictions where EGMs are readily available. The point is, why does this matter? And what is to be done?

There are many ways in which EGMs can be modified to render them less harmful, and certainly the Norwegian experience demonstrates this. It is also possible to reduce the density of EGMs in specific areas, and this has also been attempted to varying degrees in a number of jurisdictions. I would take issue with the proposal that reducing the harmful characteristics of EGMs is less likely to reduce harm than reducing accessibility. Both approaches may produce preventive effects in the population, and they are not mutually exclusive. Note however that industry is reluctant to reduce revenue, for obvious reasons. Even government monopolies have revenue targets to meet, and are expected to produce a surplus that (rather ironically, given the data set out in the article) is, as I understand the Finnish situation, required to fund social services and other charitable purposes, many intended to assist the disadvantaged. The dilemma of course is that relatively advantaged populations are less likely to be socio-economically stressed and discriminated against, and therefore unlikely to use EGMs.

In any event, reducing accessibility in areas of comparative disadvantage is a fine idea. However, this may take some time and encounter resistance from the operator, the government agencies
dependent on the revenue, and the various civil society organisations and charities that derive benefit from the revenue. However, there is also a great deal that can be done to reduce the harmful effects of EGMs. A public health response to the problem of EGM harms would adopt an iterative and systematised approach - as with, for example, tobacco control or motor vehicle injury reduction. In such an approach, reducing the harmful characteristics of EGMs is as important as managing accessibility appropriately. For this reason, the UK government recently reduced the maximum stake on FOBTs from 100 pounds to 2 pounds, and in Australia, most jurisdictions have reduced the maximum stake from $10 to $5, and reduced other design parameters such as the load up limit, and prohibited reinforcements associated with losses disguised as wins. I would suggest that the objection to addressing machine characteristics is unfounded, and reliant upon old and tangential literature.

I strongly suggest that the authors consider further studies utilising GIS techniques and expenditure data. Investigating possible relationships between area socio-economic characteristics, expenditure and density would provide much better data for policy makers and would likely resonate far more strongly with concerned populations. I also note that the maximum and minimum density of EGMs spans a significant range. This may be an artefact of the level of analysis, but some discussion of this would be helpful. What are the characteristics of those areas with EGM density above 18 per 1000, for example, and of those with densities below 5 (say). This would assist in 'filling out' the background to the analysis.

References I suggest the authors may care to consider:


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