

ISSUES TO CONSIDER IN IMPLEMENTING THE “SOCIO-ECONOMIC IMPACT OF GAMBLING (SEIG) FRAMEWORK” *

Prepared for the Canadian Gaming Association
by

Douglas M. Walker, Ph.D.**

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Executive Summary

In February 2008, “The Socio-Economic Impact of Gambling (SEIG) Framework, An Assessment Framework for Canada: In Search of the Gold Standard” was released. The purpose of the report is to introduce an alternative approach to identifying and measuring the socio-economic impacts of gambling.

The SEIG framework provides an important contribution to a critical area of gambling research. However, like other methodologies that attempt to address the socio-economic impacts of gambling, the SEIG framework has its own potential limitations. Policymakers, researchers, and research/government funding agencies should consider some of these issues as they contemplate research undertaken in the context of the SEIG framework.

This paper discusses eight issues to consider in evaluating the SEIG framework:

- 1 A flexibility–comparability tradeoff.** One of the primary benefits of the SEIG framework, according to its authors, is flexibility. But there is a price. The more flexibility researchers have in identifying and measuring socio-economic effects, the less comparable are different studies from different jurisdictions and/or time periods. Flexibility also makes it more difficult to detect researcher biases.
- 2 Reliance on the Genuine Progress Index (GPI).** The SEIG report is justifiably critical of methodologies that rely on Gross Domestic Product (GDP), and suggests use of the GPI as an alternative. Yet, the GPI also has limitations. For example, it ignores consumer’s surplus, treats inequality as a cost, and includes wealth transfers in its computation. As a result, studies using the GPI may be biased against gambling.

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** Associate professor of economics, College of Charleston, Charleston, South Carolina, USA. Email: WalkerD@cofc.edu. Web: <http://walkerd.people.cofc.edu>. The views and opinions expressed in this paper are those of the author and do not necessarily represent those of the Canadian Gaming Association or the College of Charleston.

- 3 **A potential bias against the benefits of gambling.** The SEIG explicitly ignores “consumer’s surplus,” which is arguably one of the most important benefits of gambling. Thus, the SEIG framework may have a bias toward underestimating the benefits of gambling.
- 4 **Measurement problems.** The SEIG authors are upfront about the measurement problems inherent in socio-economic estimates. However, the SEIG methodology is not exempt from these problems, as many of the effects of gambling are simply un-measurable.
- 5 **Attribution of costs to gambling.** Estimating the socio-economic costs of gambling is particularly problematic, as the SEIG authors acknowledge the inability for researchers to attribute social costs in shares corresponding to causality. A related problem is that a majority of pathological gamblers have comorbid disorders. An inability to attribute costs among disorders is a critical limitation of all social cost estimates, not only the SEIG framework.
- 6 **A means to an end?** The SEIG framework is promoted as an initial step towards addressing the questions, “Where should investment be made to avoid preventable negative impact [of legalized gambling]?” and “How well are these investments achieving their objectives over time?” However, it is unclear whether monetary measurements of gambling’s impacts are necessary to address the important question of harm reduction.
- 7 **SEIG framework advantages over competing methodologies?** The authors suggest that the SEIG is a road toward a uniform methodology. To the contrary, the SEIG framework may create an entire new set of issues to be debated. As a result, it is unclear that this new methodology is superior to its predecessors.
- 8 **Funded research may avoid peer-review.** A critical aspect of quality academic research is the peer-review process. Canadian research funding is plentiful, yet it is not clear that there is a rigorous peer-review process in place for such funded studies. Peer-review should be considered as a condition for future funding of socio-economic impact studies. This will help to ensure some minimal level of quality control.

Attention to these issues may aid researchers who rely on the SEIG framework in their studies. However, some of the problems with socio-economic research are so significant – particularly the measurement and cost attribution problems – that it is doubtful that the SEIG or any other methodology will overcome them. Researchers should proceed with an awareness of these issues. Policymakers and other users of socio-economic impact of gambling research should be very aware of its limitations.

Finally, it is worth considering whether the impacts of gambling warrant so much attention and resources from researchers, relative to other service or entertainment industries. It is unclear whether the type of research promoted by the SEIG framework can pass a cost-benefit test, as many of the effects of problem gambling behavior are simply un-measurable.

Introduction

“The Socio-Economic Impact of Gambling (SEIG) Framework, An Assessment Framework for Canada: In Search of the Gold Standard” was released in February 2008. The report was funded by ten Canadian organizations associated with gambling research. The purpose of the SEIG report is to offer an improved methodology for identifying and measuring the socio-economic impacts of gambling.

“The socio-economic effect of gambling” is one of the critically important areas in gambling research, and it is perhaps the most influential type of research with policymakers and voters. This is because policymakers and voters like cost-benefit ratios and other data – especially in monetary terms – that allow them to easily compare the potential pros and cons of policy proposals. Politicians, in particular, typically require some type of empirical data to justify their voting on particular acts or policy changes. Even research funding agencies, such as those that funded the SEIG report, can use empirical estimates of the socio-economic effects of gambling as a means to prioritize research funding.

The SEIG framework provides an important contribution to the critical area of socio-economic research. The report summarizes much of the past research, identifies many of the shortcomings in the existing literature, and suggests a methodology that may offer improvements over competing methodologies. As the framework was produced through a joint-funding effort from numerous organizations, one can expect subsequent funded research to utilize the SEIG framework.

The stated purpose of the SEIG framework is to provide a foundation on which to build a consensus among researchers in the development of a methodology to assess the impacts of gambling (SEIG, p. 12).¹ In particular, the SEIG report focuses on the first two of the following four research questions:

- What is the positive and negative impact of legalized gambling?
- What are the preventable forms of negative impact?
- Where should investments be made to avoid preventable negative impact?
- How well are these investments achieving their objectives over time?

Most gambling researchers would probably agree that these are very important questions. The SEIG framework can be helpful to researchers addressing these issues.

The purpose of this paper is to highlight some of the issues which may complicate the application of the SEIG framework to future research. The intent is not to be critical, but rather to raise issues that researchers may wish to address in their research using the SEIG framework. A discussion of these issues can be useful to researchers, funding agencies, and policymakers, as they contemplate research on the socio-economic effects of gambling in Canada and elsewhere. Eight separate issues are discussed.

¹ It should be noted that the SEIG report is organized so that a particular topic may be discussed in several parts of the report. Citations in this paper do not necessarily refer to all of the SEIG discussions of any particular topic.

1 Flexibility – Comparability Tradeoff

Legalized gambling industries vary across the Canadian provinces and, of course, across different countries. The existing literature includes several different perspectives for addressing the socio-economic impacts of legalized gambling, as cited in the SEIG study (pp. 23-24):

- a) Genuine Progress Indicator (GPI) Atlantic’s framework
- b) *Community Impacts of Electronic Gaming Machine Gambling*²
- c) *International Guidelines for Estimating the Cost of Substance Abuse* (Single et al., 2001)³
- d) Public health model (Korn, Gibbins, and Azmier, 2003)
- e) Conventional cost-benefit analysis (e.g., Grinols 2004 and Walker 2006).

To accommodate such different research perspectives across regions and nations, the SEIG framework emphasizes its flexibility. For example,

While the SEIG Framework does contain some “cook-book” tips for estimating the various impacts of gambling, there are several areas that will require new research and development, while others will see ongoing refinement and improvement. This can only happen through the application of the SEIG Framework, especially on the community scale of analysis. For the evolution to take place, users of the framework are encouraged to share their experiences, information and impact estimates in the spirit of continuous improvement of this analytical framework (SEIG, p. 22).

There is no doubt that the spirit of the SEIG study is to encourage cooperation in developing a useful tool of analysis: “The SEIG Framework is thus general, comprehensive and flexible enough so that it can be customized according to each jurisdictional or end-user need” (SEIG, p. 24).

This amount of flexibility may have drawbacks, however. We discuss two potential problems. First, with such flexibility, the comparability across studies may be very limited. Flexibility of a socio-economic measurement framework is critical because the framework must be applicable to a variety of researchers and jurisdictions, just as the SEIG report suggests. Unfortunately, this area of research has been very slow in development in part because of the wide range in interpretations of “cost” and “benefit” that have been utilized by researchers. With so many different “indicators” it will be a difficult and slow process for the framework to be refined into a workable methodology for socio-economic measurement.

Table 1 of the SEIG report, pp. 25-46, lists six different impact types: health and well being, financial/economic, employment/education, recreation and tourism, legal/justice, and culture. Each “impact” category contains a variety of indicators classified as either a cost or benefit, which may be measured under the SEIG framework. Altogether there are at least *sixty* different indicators listed in the SEIG framework. In some cases suggested data sources are listed; in others, primary research must be undertaken.

² This source is cited in the text as an Australian study, but it is not listed in the SEIG bibliography.

³ The second edition of the *Guidelines* was published in 2003. The newer edition is listed in the bibliography of this paper.

Given “the SEIG framework is general, comprehensive, and flexible enough so that it can be customized according to each jurisdictional or end-user need” (p. 24), it would seem unlikely that all components of the SEIG would develop equally. Indeed, the SEIG report specifically states, “not all of these indicators can be nor should necessarily be measured, depending on the needs of each community, jurisdiction, or province using the framework” (SEIG, p. 59). If studies using the SEIG framework focus on different impacts or indicators, then there may be very limited comparability across studies, jurisdictions, and time periods. A lack of comparability will hamper researchers’ ability to evaluate the methods used in previous studies.

The second potential problem with the enormous flexibility of the SEIG framework is that it may foster biased studies. The SEIG report discusses the controversy among economists about how to measure the impacts of gambling: “While conventional cost-benefit analysis tools may be beneficial, there is still considerable disagreement among economists as to the right taxonomy of cost and benefit for gambling and how to measure this impact” (SEIG, p. 10). This point is critical, as the disagreement among economists is due, in part, to researchers’ personal or professional biases:

There is also a lack of consensus and a misuse of economic theory on how conventional cost-benefit analysis should be used in assessing welfare effects of public policy. The key issue of political and theoretical debate is what to count in a cost-benefit analysis, which is often influenced by what the researcher wants to study (SEIG, p. 11).

The SEIG report suggests, “because the process of indicator selection is inherently subjective, *the impact indicators chosen should reflect stakeholder values, preferences, and the desired outcome* or purpose of the indicators for decision making” (p. 59; emphasis added). At the same time, the report explains,

Because gambling raises important moral and ethical issues, research is often coloured by these biases, either for or against gambling. Thus, it is difficult to imagine a truly objective and unbiased analysis. However, the SEIG framework is designed to come closest to the desired neutrality that is required to obtain straightforward and unblemished measurement (SEIG, p. 106).

To the contrary, the SEIG framework lists so many effects of gambling and is so flexible that it may be very difficult to detect researcher biases which could encourage more biased studies to be produced under the guise of the SEIG framework. Indeed, as quoted above, the SEIG framework suggests that indicators can be chosen to accommodate “desired outcomes.” This is very convenient for researchers who have pro- or anti-gambling biases, and for funding agencies who wish to show politicians that serious problems exist that deserve increased research funding. This is a critical issue, especially considering how researcher biases have been clearly exhibited in the gambling literature.⁴

Social cost estimation strategies have been the subject of much academic debate, and were the focus of the Whistler Symposium (2000)⁵ and the Alberta Gaming Research Institute’s (AGRI) conference in Banff (2006). One particular area of controversy, for example, is how to treat wealth transfers in social cost studies. Studies such as Thompson, Gazel, and Rickman (1997,

⁴ The SEIG report addresses the potential of researcher bias (Appendix 9, pp. 161-163).

⁵ The Whistler Symposium was sponsored by the Canadian Centre on Substance Abuse.

1999), Thompson and Schwer (2005), and many of the other studies utilized by Grinols (2004), routinely count transfers as social costs. Walker and Barnett (1999), on the other hand, have argued that wealth transfers should not be considered to be social costs. As the SEIG report notes, economists are still debating which indicators should be included in cost-benefit analyses. Despite the controversy, one advantage of the studies mentioned above is that their scope is quite limited. The authors examine a relatively short list of negative effects of problem gambling. This makes these studies somewhat comparable across jurisdictions because they include the same components. It may be many, many years before studies based on the SEIG framework can develop to this point of refinement and comparability. Therefore, the SEIG may, in reality, be far from a “gold standard” for research in this area because it really does not set a standard by which different studies can be compared to each other.

2 Reliance on the GPI (Genuine Progress Index)

Among the different choices that researchers have for designing a research project on the effects of gambling, the SEIG report (p. 69) lists several methodological options:

- Genuine Progress Indicator (GPI) full cost-benefit accounting
- Cost-benefit analysis (CBA)
- Government budgetary impact analysis
- Net financial benefit analysis
- Net social benefit analysis
- Cost-effectiveness analysis
- Cost of illness approach used in health economics

However, the SEIG report exhibits a strong preference for using the GPI method, especially over GDP-based methodologies (SEIG, pp. 46, 69-70), calling the GPI the “preferred method” (p. 69) and offering a tailored GPI outline to use with the SEIG framework (pp. 71-72).

The reason for suggesting an alternative to traditional cost-benefit analysis based on GDP is well explained in the SEIG report (see pp. 69-71). Consider a simple example of an economy that produces only three goods/services: cars, gasoline, and car repairs. The total value of production in this economy would be calculated as

$$GDP = (P_{cars} * Q_{cars}) + (P_{gas} * Q_{gas}) + (P_{repairs} * Q_{repairs}),$$

where P is price and Q is the quantity produced. When economists refer to economic growth, they are referring to increases in GDP, holding prices constant (this is called “real GDP”). This is done so that price increases alone are not interpreted as economic growth.

One can argue that even real GDP growth does not necessarily imply an increase in well being. This is because it ignores non-market labor, product quality, environmental quality, and many other quality of life issues. Another problem with GDP, as the SEIG report rightly notes, is that even expenditures that do not contribute to well being are included in the GDP measure. In our example above, a higher quantity of car repairs would contribute to a higher GDP. But car repairs are associated with car accidents or breakdowns. So while car repairs may be rational and a worthwhile service to purchase for those who wreck their cars, it would be a stretch to suggest that an increase in car repairs (accidents) is indicative of increased well being in society. One

advantage of the GPI framework over GDP is that the GPI attempts to differentiate between welfare enhancing economic activity and that which constitutes a loss in well being (SEIG, pp. 70, 123-124).

While most economists would agree with the criticisms of GDP discussed above, they still see GDP as the best available measure of *productivity* in the economy, even with its flaws. But productivity is not the same as quality of life, which is more the focus of the GPI. Still, few economists are ready to abandon use of GDP.

One major problem with the GPI as described in the SEIG report and applied to gambling, is its treatment of consumer's surplus. This issue is discussed in depth in the next section. There are several other aspects of the GPI (as outlined in the SEIG report) that may be problematic. For example, changes in income and wealth inequality are treated as explicit social costs in the SEIG's GPI accounting framework (pp. 71 and 78-79). There are a number of problems with the suggestion that the Gini coefficient⁶ is a valid measure of how gambling might affect the distribution of wealth and therefore social welfare. The specific adjustment suggested in the SEIG report is curiously vague: "an increasing Gini coefficient means that personal consumption expenditures are adjusted downwards or discounted" (p. 78). This perspective seems to presume that perfect equality is the ideal situation. Few mainstream economists would subscribe to such an extreme position, although extreme inequality can be a cause for concern.⁷ Even ignoring the conceptual concerns, though, the practical application of this idea to measuring GPI is difficult at best. How exactly is a researcher to attribute the change in the Gini coefficient to the presence of one particular industry such as casinos? And how much of a change in the Gini coefficient would be sufficient to qualify as a "cost" of gambling?⁸

A more general problem with the GPI method of accounting is that it utilizes estimates of various social costs even though these costs are still being hotly debated in the literature. Some of the cited studies are fairly exhaustive and provide useful guides for researchers (e.g., Australian Productivity Commission 1999), while others are based on questionable methodologies (e.g., Grinols' 2004 averaging of previous social cost estimates). Walker and Barnett (1999) examined many of the earlier social cost studies, and concluded that they overestimated social costs, in part because they included transfers as social costs. While the SEIG report (e.g., p. 97) acknowledges that transfers may not qualify as social costs, it does not appear to offer a comprehensive prescription to handle transfers (in general) in the GPI accounting framework.

⁶ A Gini coefficient measures the distribution of wealth, and ranges from 0, representing perfect equality, to 1, the opposite extreme in which case one person owns all the wealth in society.

⁷ The SEIG report (p. 179) explains, "This approach is based on the theory that an increase in inequality (a growing gap between rich and poor) ultimately erodes the social cohesion and overall well-being of society and can lead to real socio-economic class conflicts, loss of trust, and associated costs. Classical economists might challenge this premise calling for evidence of real costs associated with changes in income inequality." Indeed, economists such as Thomas Sowell (2007) have argued that many publicized inequality statistics are flawed. Referring to the individuals in the different income quintiles, Sowell writes, "Most Americans in the top fifth, the bottom fifth, or any of the fifths in between, do not stay there for a whole decade, much less for life..." His point is that statements about differences in income between the top and bottom income earners may be misleading since there is quite a bit of mobility among the different income brackets. A similar argument would apply to wealth inequality.

⁸ Another discussion of the inequality issue is found in the SEIG report at p. 73. What the authors appear to be referring to is actually the fact that a non-trivial proportion of casino revenues may be won from problem gamblers. If this is the catalyst for the Gini coefficient discussion, then it is not clear that use of the Gini coefficient would add anything to the analysis.

One danger lies in perpetuating flawed methodologies for estimating socio-economic effects. Again here, flexibility in the SEIG framework raises potential problems by allowing researchers flexibility to treat potential “indicators” as they please, rather than according to some generally accepted methodology or principle. This reduces the likelihood that the SEIG framework can be adopted as a gold standard for socio-economic research.

3 Potential Bias Against the Benefits of Gambling

The previous section discusses some of the potential problems with utilizing GPI accounting under the SEIG framework. In some cases, these problems are likely to bias the socio-economic analysis against gambling (i.e., overestimate the net costs of gambling). In particular, the GPI does not consider consumer’s surplus or producer’s surplus (SEIG, p. 70). Yet, these are two of the fundamental measures developed by economists to measure the benefits of voluntary market transactions. Consumer’s surplus has been acknowledged in numerous gambling studies, including Eadington (1996), Australian Productivity Commission (1999; see Appendix C), Walker and Barnett (1999), and Collins (2003).⁹ Failure to account for this significant benefit from gambling will bias SEIG-based studies against gambling.

Even though researchers adopting the SEIG framework need not necessarily rely on GPI accounting, there is an obvious preference in the SEIG report for that approach, which ignores the importance of consumer’s surplus. This is evident in statements such as, “for the most part, personal expenditures on games of chance, in theory, would account for the maximum amount of potential utility benefit (e.g., entertainment value) derived from playing games of chance for the adult gaming population” (SEIG, p. 72).¹⁰ This is an extremely important point, since it seems to imply that consumer spending is equivalent to value. This perspective on value violates basic consumer theory.¹¹

To see why equating expenditures to maximum potential benefit will typically *underestimate* the benefit from consumer spending, consider any standard market transaction. For example, consider the purchase of a meal at a restaurant. For such a transaction to occur at a particular price, say \$20, both parties (the buyer and the seller) must expect to benefit. In this example, the restaurant prefers the money to the food and simultaneously, the consumer prefers the food to the \$20.

We all understand that the producer’s benefit, typically called “profit” (or producer’s surplus), is the difference between the selling price (\$20) and the cost of producing the meal (represented by the supply curve). But the buyer also gains something analogous to the seller’s profit. The consumer receives a “profit,” which is the difference between the value of the meal to the consumer (or the maximum amount he or she would be willing to pay, represented by the demand curve) and the actual menu price that is paid for the meal (\$20). This difference, or excess benefit, is called “consumer’s surplus” by economists.

⁹ Other researchers explicitly ignore consumer’s surplus (e.g., Grinols 2004, p. 107). Consumer’s surplus is discussed in moderate in the SEIG report (pp. 138-141).

¹⁰ In the SEIG’s calculation, problem gambling is exempted from this: “In the case of problem gamblers, their expenditures and their gambling losses in excess of the amount voluntarily expended and lost by the average recreational gambler may be viewed as a societal cost and deducted from the GDP” (SEIG, p. 73).

¹¹ The SEIG authors have a questionable understanding of consumer’s surplus. For example, they suggest that consumer’s surplus assumes “a perfectly competitive and ‘free’ gambling market” (p. 141). This is not the case. Consumer’s surplus may indeed be larger under competitive market conditions, but it still exists even when casinos are government monopolies, as long as they do not engage in first-degree price discrimination.

In Figure 1, below, we illustrate the producer's surplus (profit, b) and consumer's surplus (a) for a restaurant that sells q_e meals during a week. Both consumers and producers expect to benefit from the transactions. As some consumers will value the meal more highly than others (this implies a negative sloped demand curve), the consumer's surplus will vary across consumers. The important point here is to recognize that typically, in market transactions the benefits to the consumers exceed the prices they pay for the products. There is no reason to assume that this is any different when the product is a lottery ticket or a ticket to a professional baseball game.¹² When gambling is offered as an entertainment choice, the consumer's surplus is perhaps the greatest economic benefit, as consumers are now allowed to consume a service they were not able to previously. The benefit (consumer's surplus) is a reflection of the fact that they enjoy gambling.

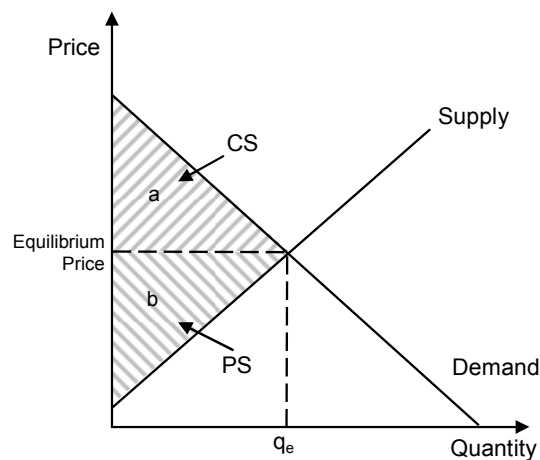


Figure 1. Consumer's and producer's surpluses
 Consumer's surplus is indicated as area (a).
 Producer's surplus is shown as area (b).

There are (at least) two other specific types of benefits from legalized gambling that can accrue to the consumers. These result from increased competition when a new business opens in a region. Normally, consumers benefit when increased competition in markets leads to lower prices. This is a source of consumer's surplus, illustrated in two examples for casino games. First, casinos sometimes advertise particular games and offer better odds than competing casinos. If the effective price of playing the casino games falls, then consumer's surplus rises.¹³ Second, casinos are often bundled with other products like hotels and restaurants. To the extent casino competition increases competition in the local restaurant, hotel, and entertainment markets – whether through price decreases or quality increases – the casinos provide more benefits to

¹² An exception could be made for pathological gambling behaviors.

¹³ This type of benefit may not exist if all casinos are government owned and there is no price competition among casinos.

consumers in the form of consumer's surplus through the increased competition in those markets.¹⁴

By advocating the GPI approach to measuring economic activity, the SEIG framework effectively advocates ignoring any consumer's surplus that may result from legalized gambling (p. 70). Since these benefits may be some of the most significant to result from gambling industries, it would be very misleading for a socio-economic impact study to ignore consumer's surplus.¹⁵

Another consumer benefit that has been ignored by most researchers, and is discounted by the SEIG framework (p. 139), relates to product variety. When gambling is first introduced in a province or city, it has the effect of increasing the product choices for consumers, whether we consider residents or tourists. This "variety benefit" could be significant, but it is difficult to measure. It probably pales in importance relative to traditional consumer's surplus, since gambling is widely available and easily accessible to a consumer willing to travel a modest distance.

Clearly, the SEIG framework does seek to be comprehensive in the list of benefits and costs considered (Table 1, pp. 25-46). However, from the perspective of mainstream economics, the largest benefit from legal gambling may be consumer's surplus – and this is explicitly omitted under the SEIG framework that uses GPI accounting. As a result, the studies using the SEIG may have a strong built-in bias against gambling.¹⁶

4 Measurement Problems

The inability to measure the socio-economic effects of gambling has long been a major problem in gambling research. Aside from actually identifying the different effects of gambling, monetary measurement is a fundamental problem. These problems continue, despite the efforts of the research community. Indeed, both the Whistler Symposium in 2000 and the AGRI conference in Banff (2006) addressed social cost measurement issues. Still, no widely accepted methodology for cost and benefit measurement has emerged, although this is what the SEIG report attempts to provide.

The SEIG report is upfront about many of the measurement issues that have perplexed researchers: "The key challenge in using the SEIG framework – for its express purpose of measuring the positive and negative impact of gambling – is the availability of the proper statistical and qualitative data to populate the recommended indicators" (p. 58). The report further notes, "for virtually every statistical indicator in the SEIG framework there is an associated economic benefit or cost expressed in monetary terms, with some indicators more difficult to monetize than others" (p. 68). The SEIG report lists the absence of data as the "first and most important key challenge" to implementation of the SEIG framework (p. 10). Unfortunately, many of the indicators may simply defy measurement (pp. 128-129). Furthermore, what indicators to measure and how to measure them are left up to the whims of

¹⁴ The analysis is actually a bit more complicated than this discussion suggests. The Australian Productivity Commission (1999, Appendix C) provides a complete discussion, and demonstrates that the measurement of consumer's surplus is somewhat complicated.

¹⁵ For a discussion of consumer's surplus in the SEIG report, see pp. 138-141.

¹⁶ It is interesting to compare Table 2, the SEIG framework utilizing GPI (pp. 71-72), with Table 1 (pp. 25-46). Using the GPI framework, the number of relevant benefits from gambling appears to shrink dramatically. Granted, Table 2 is not intended to be complete (p. 71), but even these two tables illustrate how subjective socio-economic analysis can be, depending on the analytical methodology chosen.

individual researchers. As discussed earlier, this may be problematic as it may help to foster researcher biases and/or perpetuate flawed empirical methodologies, rather than help develop a valid methodology.

The literature on the socio-economic effects of gambling has highlighted many of the specific measurement problems. Researchers have not come to an agreement as to how these problems should be handled, and their differences in opinion are often significant.¹⁷ Some studies derive their empirical estimates of “costs” based on small samples of Gamblers Anonymous surveys (e.g., Thompson, Gazel, and Rickman 1997, 1999). This may be problematic, however, because it is not clear that such a sample is representative of the general population, or even the population of problem gamblers. Indeed, the Gamblers Anonymous members may represent extreme cases of problem gambling. Even if the sample is believed to be representative, it is not clear that problem gamblers can successfully provide accurate responses to some survey questions. For example, it is unclear whether survey respondents understand how to calculate their gambling losses. Blaszczynski, Ladouceur, Goulet, and Savard (2006) report that “without specific instructions regarding how gambling expenditures are to be calculated, participants use different strategies” (p. 127). Then survey-based estimates of how much money was lost by problem gamblers may be very unreliable.

In fact, most monetary estimates of the socio-economic effects of gambling are arbitrary to some extent. Granted, this same charge may to some degree be levied against any empirical estimate. But this problem is particularly serious in the young gambling research field. The National Research Council, writing in the U.S. in 1999, explained,

In most of the impact analyses of gambling and of pathological and problem gambling, the methods used are so inadequate as to invalidate the conclusions. Researchers in this area have struggled with the absence of systematic data that could inform their analysis and consequently have substituted assumptions for missing data. (*Pathological Gambling* 1999, p. 185)

The SEIG framework seems to do little to improve on this aspect of the literature, as it leaves so much of the socio-economic estimates up to the judgment of the researchers. The problem is similar to that explained by Walker and Barnett (1999): when researchers do not start with a clear idea of what they are trying to measure they often utilize *ad hoc* methodologies that may result in meaningless empirical estimates.¹⁸ In fact, the “third key challenge” identified in the SEIG report (p. 10) is monetizing costs and benefits. Previously I have gone so far as to suggest that we may be better off without monetary estimates altogether, at least for indicators that defy straightforward measurement (Walker 2007, p. 136):

Given the variety of social costs related to legalized gambling, with some easily measurable and others a mystery, perhaps we should adopt general rules for social cost estimates. Let us develop estimates for the costs (police, court, incarceration and therapy costs) that are susceptible to measurement. But for others such as psychic costs that

¹⁷ For a discussion of different perspectives on social costs and the various measurement issues, see Walker (2007, chapters 6-8).

¹⁸ An example of this is “abused dollars,” which was first introduced by Politzer, Morrow, and Leavey (1981). Grinols (2004) has attempted to resurrect this term, even though it has questionable merit as an economic or social cost.

cannot be reasonably measured, or for negative effects that are not social costs such as pecuniary externalities, let us identify them without providing spurious empirical estimates. Offering methodologically flawed cost estimates does not improve our understanding nor does it promote sound policy.¹⁹

Valid monetary measurement estimates of some effects are simply not possible. Very questionable socio-economic monetary estimates are often used in policy debates. Using bad data may result in bad policy. Perhaps *no* data would be better than the flawed data that are often produced.

The purpose of the SEIG report is to offer a comprehensive framework for evaluating the socio-economic effects of gambling. If enough researchers agree to the spirit of the SEIG framework, then the SEIG may make some advances in socio-economic measurement. But this process is likely to be extremely slow and very expensive, as this area of research is still relatively primitive and there are substantial barriers. If researchers continue research focusing on monetary measurement, they should carefully and completely acknowledge the potential problems with the estimates they produce.

5 Attribution of Costs to Gambling

Aside from the measurement issues addressed above, perhaps the single most serious problem in estimating monetary estimates of the socio-economic effects of gambling – particularly the costs – is determining the extent to which problem gambling is the cause of the particular indicator being measured. As an illustration, consider the example of a divorce. In any particular divorce case, there may be any number of contributing factors, including problem gambling, substance or alcohol abuse, adultery, spousal abuse, etc. How are researchers to apportion “cause” among the different contributing factors? As the SEIG report (p. 65) acknowledges,

One of the greatest challenges in measuring the impact of gambling on individual and societal well-being is determining the relative causality or attribution fraction that problem gambling has on a given impact variable and indicator; particularly for assessing the causality of various health outcomes, including morbidity (mental and physical), disease, stress and, ultimately, death. How much of an attempted or successful suicide, for example, can be attributed to the effects of problem gambling in an individual’s life? Making such determinations is complex and controversial.

This concern does not simply apply to one or two of the SEIG indicators. In fact, “virtually every indicator in the SEIG framework in Table 1 has an attribution analysis challenge; though the health/well-being impact indicators are particularly sensitive to attribution analysis” (SEIG, p. 65). Although the SEIG report does highlight some of the promising studies in this area (SEIG, pp. 180-186), it notes,

...even with relatively robust empirical analysis and epidemiological studies, many researchers believe that there will be enough significant methodological challenges that

¹⁹ This view appears to be consistent with some other researchers’ views voiced at Banff (2006); see SEIG, p. 196. Eric Single also voiced some agreement to this perspective at the Banff conference.

may never reveal robust enough causality statistics. This should not, however, thwart efforts to move incrementally closer to statistically valid fractions for assessing gambling impact (p. 186).

This issue is of such importance that the report lists it as the “second key challenge” to SEIG implementation (p. 10). Of course, the problem is that most, if not all, empirical estimates of the socio-economic impact of gambling are potentially flawed, since there is no good way to determine the extent to which problem gambling is responsible for the measured impact. The SEIG report further acknowledges, “The development of attribution fractions associated with problem gambling is critical to the utility of the SEIG framework” (p. 79). This would seem to imply that researchers should focus on this critical issue prior to engaging in admittedly flawed empirical estimations.

If this was not enough of a problem itself, the cost attribution problem is compounded by comorbidity (SEIG, pp. 65, 87-89), also called “coexisting disorders.” This issue has long been recognized as an issue of critical importance in the social cost literature.²⁰ Several recent studies provide hard evidence. Petry, Stinson, and Grant (2005) estimate that 73% of U.S. pathological gamblers have an alcohol use disorder. The lifetime prevalence rate for drug use disorders among pathological gamblers is 38% percent, and for nicotine dependence it is 49%. Other comorbid conditions of pathological gamblers include mood disorders (50%), anxiety disorders (41%), and obsessive-compulsive personality disorder (28%). In a more recent study, Westphal and Johnson (2007) found that 77% of their study’s subjects with a gambling problem had co-occurring behavioral problems, and 56% had *multiple* problems other than problem gambling. These studies suggest that more often than not, problem gamblers have other problems.

How should we handle a problem gambler who is also a drug addict, for example, and causes \$5,000 worth of social costs. (Assume for this example that the cost estimate is valid.) What proportion of the cost should be attributed to problem gambling, and what proportion to drug use? Most studies in the gambling literature simply attribute the entire cost to problem gambling, certainly overstating the social costs of gambling. One can imagine solutions to this, from simple to complicated. A starting point, for example, would be for psychologists to compare pathological gamblers with coexisting disorders to those without other disorders. The net contribution of gambling to socially costly behavior could be roughly estimated. For example, suppose pathological gamblers with identical coexisting disorders cause \$5,000 worth of social costs, while pathological gamblers without the coexisting disorders cause \$2,500 worth of social costs. Then for the pathological gamblers with coexisting disorders, researchers could attribute 50% of the social costs to pathological gambling, while 50% would be attributable to other disorders (Walker 2008, p. 4; also see discussions in SEIG, pp. 65, 81-84, 87-88, and elsewhere). Of course, like many proposed solutions, this one is easier said than done.

To complicate matters further, a new study by Kessler et al. (2008) finds that in a sample of over 9,200 U.S. adults, over 96% of “lifetime problem gamblers” had another lifetime disorder, and 64% had three or more disorders.²¹ Interestingly, for 74% of individuals with comorbid disorders, another disorder *preceded* the problem gambling. Table 1 summarizes the findings from the study. This “timing of onset” issue has just begun to receive research attention. It further complicates the cost attribution problem.

²⁰ For example, see Thompson et al. (1997, pp. 87-88) who provide early anecdotal evidence of comorbidity in a social cost study. See Walker (2007, pp. 115-117) for a detailed discussion.

²¹ The discussion here is based on the review of Kessler et al. (2008) from *The Wager* (2008).

Table 1. Lifetime psychiatric comorbidity among study participants with lifetime problem gambling (PG)

Disorder	Prevalence of disorder among those w/ PG	Temporal Sequence (for those with PG and other disorder)		
		PG first	Other disorder first	Onset at same time
Any mood disorder	56%	23%	65%	12%
Any anxiety disorder	60%	13%	82%	5%
Any impulse control disorder	42%	0%	100%	0%
Any substance use disorder	42%	36%	57%	6%

Source: *The Wager* (2008). Percentages may not sum to 100% because of rounding.

As yet, no one has introduced a satisfactory methodology for dealing with cost attribution, comorbidity and temporal sequence of comorbid disorders, with respect to socio-economic impact estimates. For this reason, such estimates must be scrutinized carefully. Studies that do not account for these complications should be taken with a grain of salt. To its credit, the SEIG report acknowledges these important problems, and it may spur researchers to focus on them in order to further advance socio-economic research.

6 A Means to an End?

In the concluding section of the SEIG executive summary (p. 12) it explains that the SEIG framework is focused on answering the first two of these four important questions:

- What is the positive and negative impact of legalized gambling?
- What are the preventable forms of negative impact?
- Where should investments be made to avoid preventable negative impact?
- How well are these investments achieving their objectives over time?

A full reading of the SEIG report makes clear that the primary focus is on the first question. Much of the report addresses the issue of how to derive monetary estimates for the socio-economic impacts of gambling.²² But the report may have skipped an important step in developing its foundation. Although there is much emphasis on how researchers could develop *monetary estimates* of the socio-economic impacts of gambling, it is not obvious that monetary estimates are a necessary prerequisite for answering any of the questions posed above.

For example, let us suppose that problem gamblers have a significantly higher divorce rate than non-problem gamblers. What would constitute a useful course of study for the interested scientist? Consider the following questions:

- Is there (and if so, why) a causal relationship between problem gambling and divorce?
- To what extent are problem gamblers more likely than others to get a divorce?
- Are family problems associated with problem gambling manifest in ways different from other causes of family problems?

²² The SEIG report also emphasizes the importance of “statistical (quantitative)” and “perceptual (qualitative)” indicators. See p. 56 for a discussion.

- Are children of problem gamblers affected by divorce differently than children of parents without gambling problems?
- Does treatment significantly decrease the likelihood of divorce for problem gamblers?
- What is the estimated social cost of divorce attributable to problem gambling?

The last question posed is the least interesting; what benefit would having a monetary estimate provide? Given that the estimate is probably going to be based on a series of arbitrary, questionable assumptions, such a monetary estimate is of dubious importance vis-à-vis the four questions quoted at the beginning of this section. Whether the estimated cost of divorce is \$60 or \$1,000, it is not clear that such a monetary figure is useful information.

As discussed elsewhere in this paper, there are a number of issues which raise questions about the validity of such monetary estimates. These issues include researcher biases, attribution of costs to problem gambling, and comorbidity. Even if researchers decide to pursue monetary estimates, first the questions of cost attribution and comorbidity must be addressed. In short, it is not clear that monetary estimates are all that useful in terms of finding ways to minimize the harms associated with problem gambling.

Normally, as the SEIG report notes (p. 56), monetary estimates can be useful because they are based on a common unit of measurement. But if the estimates are highly arbitrary, then it is not clear that monetization is a useful research endeavor. Perhaps research effort should focus instead on understanding the qualitative effects (positive and negative) of gambling. For divorce, the other questions listed above (and others not listed) may be much more important than a monetary estimate. Perhaps monetary estimation is simply not a necessary step toward the ends of avoiding the preventable negative impacts of problem gambling and evaluating the effectiveness of such measures.²³

Some scholars have even questioned these research “ends” and the usefulness of so much research on problem gambling. Collins (2008, p. 3) voices “a protest against all the effort we expend in gambling studies on trying (most unsuccessfully) to make what, in the greater scheme of things, is a comparatively small problem even smaller (viz the problem of people who gamble too much).” Perhaps it is time for researchers to re-evaluate where research effort should be spent.

7 SEIG Advantages over Other Methodologies

It should be clear from the previous discussion that, while the SEIG has many positive aspects to it, there are also very serious limitations. Few of these limitations – particularly the measurement issues – can be overcome, even if enormous attention is focused on developing the SEIG framework further.

The SEIG report discusses the variety of approaches to estimating the socio-economic impacts of legalized gambling. It lists several of the other analytical frameworks, indicating that the SEIG is designed to draw upon the best attributes of these other approaches. (See these approaches listed on p. 4 of this paper.) A detailed discussion of different approaches can be

²³ To be clear, I am not suggesting that the socio-economic costs of problem gambling are zero, or are trivial. The point is that the research methods simply do not exist to be able to produce a valid estimate for the cost of divorce, for example. Rather than producing questionable monetary estimates, acting as if they are valid, and using them to help inform policymakers, research funding priorities, and so on, perhaps another research focus would be more worthwhile.

found in the SEIG appendices (1, 4, 6, 7, and especially Appendix 9, pp. 155-197). The SEIG framework appears to rely on several comprehensive literature reviews, although they are somewhat dated.²⁴ Overall, the SEIG report demonstrates a competent understanding of the controversies in the literature. However, it seems to downplay the magnitude of the measurement problems. Furthermore, the SEIG report makes no serious attempt to provide a valid measurement methodology that represents a real improvement on currently available methodologies. Although cost-benefit analysis and cost of illness methodologies have well-known flaws, these areas of analysis are relatively well developed. The SEIG framework may take many years before it can become as refined as these other methodologies.

Consider some of the problems discussed earlier in this paper. In particular, the difficulties in monetizing the different indicators and the problem of cost attribution to problem gambling both apply to all the available frameworks for analyzing the socio-economic impact of gambling. The SEIG report does not demonstrate how it will escape these problems and set itself apart from competing methodologies. As the SEIG notes,

Many obstacles exist for constructing a pragmatic framework for impact analysis of gaming, including data limitations, methodological challenges, lack of attribution fractions, and, perhaps most importantly, a lack of consensus within the small research community on the most effective methodologies and indicators to use (SEIG, pp. 118-119).

The SEIG report can help to inspire further research, discussion and debate by outlining many of the effects of gambling. But it is not clear that it is offering solutions to some of the roadblocks that have arisen in other research perspectives as well as in the SEIG. In short, it would be helpful for researchers if the SEIG framework gave a concise and clear explanation for how it solves some of the problems inherent in other socio-economic impact research methodologies.

8 Funded Research May Avoid Peer-Review

The peer-review process in academic publishing is important for maintaining quality standards of journals. Of course, journal referees may lack the particular expertise to judge a paper that is outside their fields, but journal editors are generally expected to send papers to referees presumed to be experts in the general area of the paper topic. Referees and editors are supposed to ensure that accepted journal articles are new contributions to the literature, that they are methodologically sound, and that they are free of serious errors. Therefore, peer-reviewed journal articles are the primary target for much of the academic research that takes place.²⁵

As a relatively new field of academic research, the socio-economic effects of gambling have been analyzed by relatively few authors. Many of the early studies in the U.S., for example during the mid 1990s, were independently produced reports, or reports prepared by state

²⁴ The literature review appears to end in 2004, except for a discussion of the Banff presentations in 2006.

²⁵ Readers should be aware of whether or not a paper has undergone a peer-review. The peer-review process for academic journals is distinct, for example, from the publication process in law. Law reviews are often edited by students, and there is often no rigorous review process. Policy reports, which are generally written to inform policymakers, are generally not peer-reviewed. The SEIG report could be classified as a “policy report.” Neither the SEIG report nor this paper has undergone a rigorous peer-review..

governments. Many Canadian studies have been funded by provincial gambling research organizations, and many of these studies rely on *ad hoc* methodologies.

In its chapter on the social costs of gambling, *Pathological Gambling* (1999) is quite critical of the literature in the U.S. that had been produced up to that point in time. For example, the Council writes,

Few of the studies on the economic impact of gambling to date have appeared in peer-reviewed publications. Most have appeared as reports, chapters in books, or proceedings at conferences, and those few that have been subject to peer-review have, for the most part, been descriptive pieces. (*Pathological Gambling* 1999, p. 186)

Pathological Gambling (1999) explains the general concerns with research quality in this area:

Not surprisingly, most reported economic analysis in the literature is methodologically weak. In their most rudimentary form, such studies are little more than a crude accounting, bringing together readily available numbers from a variety of disparate sources. Among studies of the overall effects of gambling, such rough-and-ready analyses are common. In the area of gambling, pathological gambling, and problem gambling, systematic data are rarely to be found, despite considerable pressure for information. The consequence has been a plethora of studies with implicit but untested assumptions underlying the analysis that often are either unacknowledged by those performing the analysis, or likely to be misunderstood by those relying on the results. Not surprisingly, the findings of rudimentary economic impact analyses can be misused by those who are not aware of their limitations. (*Pathological Gambling* 1999, p. 162)

These criticisms could be applied to the SEIG report and to studies that use it in estimating the socio-economic effects of gambling. Yet, in many ways, the SEIG report reiterates some of the concerns described in *Pathological Gambling*. Unfortunately, it is not clear that the SEIG methodology will do anything to improve the quality of research in this area.

Research quality has admittedly improved in recent years. One reason for this may be that there have been a number of journals dedicated to gambling research. The *Journal of Gambling Behavior* (now *Journal of Gambling Studies*) was the first dedicated journal, beginning in 1985. Now we also have *International Gambling Studies* and the new *Journal of Gambling Business and Economics*. All of these are peer-reviewed journals, which should help to ensure the quality of gambling research meets minimum scientific standards.²⁶

One potentially significant long-term problem with the SEIG framework, as it is currently written, is that it does not appear to include a recommendation that research that relies on the SEIG framework should be put to the peer-review test. The plentiful research funding in Canada

²⁶ Still, in 2001 the editors of *Journal of Gambling Studies* saw problems associated with gambling research and published the following plea to researchers regarding public statements on gambling research:

On occasion, opinion has been passed on as scientific evidence. Unpublished evidence that has not been subject to peer-review has been presented as definitive. Preliminary evidence has been summarized in public testimony or press releases without the necessary documentation, including methodological details that must be available for scrutiny. In each instance, this public behavior violates professional standards of conduct and tarnishes the work of legitimate scientists. (Shaffer et al., 2001, pp. 3-4)

is certainly a blessing for the gambling research community. However, if funding enables researchers to produce studies – but then not worry about producing a publishable product (i.e., if funded studies are not subjected to peer-review) – the value of the research contributions is limited.²⁷

In many cases the research *proposals* submitted for funding are reviewed for their merit. This is useful, of course, because it can help funding agencies to prioritize projects. However, a proposal review cannot replace a rigorous journal peer-review of the final research product. As a way to address this potential problem, and in order to encourage higher quality and more careful analyses, perhaps funding (or a portion of it) that is granted for SEIG projects should be granted contingent upon publication in a peer-reviewed journal. If Canadian funding is dedicated for studies to utilize the SEIG framework, but without some expectation that such research can pass the publication test, then the quality of research may fall below what it might otherwise be.

Conclusion

The SEIG framework report raises many important issues and represents a thought-provoking contribution to the literature on the socio-economic effects of gambling. Unfortunately, the SEIG framework contributes little to helping researchers solve the measurement problems that have persisted in socio-economic impact research. Many of the effects of gambling defy accurate measurement.

Given these measurement problems, one may question whether socio-economic impact research can pass a cost-benefit test. As the SEIG report notes, an enormous amount of resources would be required to even begin to address the many unanswered research questions. But even if researchers could provide answers and monetary estimates for different effects of gambling, what is the benefit? Should policymakers rely exclusively on this type of research to inform their policies? Should such studies play *any* part in advising policy? Commenting on a study of the economic cost of alcohol and drug abuse in the U.S. (published in the journal *Addiction*), Kleiman writes, “[the study], although an enormously helpful compendium of a wide range of estimates of various components of something that might be called cost, is an unsatisfactory answer to a question of dubious importance” (1999, p. 638; quoted in Walker 2007, p. 171). It is unclear whether socio-economic impact studies are very helpful either.

Have consumer sovereignty, freedom of choice, and free markets become irrelevant considerations? As Collins (2003) has explained, good policy on the legal status and regulation of gambling should be based more on these types of philosophical questions. Reliance on quasi-fictional cost and benefit estimates is not a recipe for good government policy.

Why is there so much attention being paid by researchers, policymakers, and voters to legalized gambling. Collins (2008, p. 7) suggests one answer:

Too much gambling policy (and therefore too much funded research) is really determined by residual convictions that gambling is a *vice* (i.e., something that people ought to eschew even if they are not harming anyone else or indeed themselves). But conceptions of vice may be anachronistic and/or irrational.

²⁷ Such a peer-review requirement should encourage reviews to be done by experts outside the funding agency. Otherwise, an agency may act in order to maximize its research budget, without much concern for the quality of the research being funded.

Do pathological gambling behaviors make gambling a unique industry? Certainly the products of other industries can sometimes be over-used or otherwise create negative social or economic impacts. But are other industries subject to the same level of scrutiny by researchers?

Collins (2008) suggests that there is an “unhealthy over-emphasis in gambling research on problem gambling” (p. 2). Collins may have a point, as a majority of gambling research focuses on problem gambling. This is reflected at conferences, too, which dedicate most of their time to examining problem gambling behaviors and not potential psychological and economic *benefits* of gambling, for example. As Collins notes, “the fact that such issues are seldom discussed and conferences suggests to me that our research agenda may be skewed by puritanical moral assumptions we have inherited and not examined critically” (2008, p. 17).

The SEIG framework demonstrates a perspective which focuses largely on the costs, while ignoring some of the most significant benefits of legal gambling. More than anything, however, the SEIG report may demonstrate how futile attempts to monetize the socio-economic effects of gambling may be. The report lists a huge number of effects of gambling and occasionally offers advice for how to measure the effects or what data may be used. Clearly, there are some insurmountable barriers to effectively measuring many of the effects of gambling. More importantly, it is unclear whether such measurements would be valuable even if they could be produced reliably.

The point of this paper is not to argue that one or another methodology is superior. Nor is it to argue that the socio-economic impacts of gambling are irrelevant or trivial. Rather, the point is to highlight some of the potential concerns with the SEIG framework that deserve researchers’ and policymakers’ attention. With a careful consideration of the seriousness of the barriers in this area of research, one may question the value of using socio-economic impact estimates for informing policy toward gambling. This should be helpful, even for proponents of the SEIG and other methodologies, as they seek to refine the framework or otherwise continue research on the socio-economic impacts of gambling.

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