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The silver linings of lottery play: motivation and subjective well-being of British lottery participants

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ABSTRACT

Although certain researchers have attributed widespread lottery play to irrational beliefs that people hold regarding the chances of winning the lottery, another explanation for the popularity of lottery gambling is that lottery players may experience positive emotions before the draw. Therefore, in this study, we examine the relationship between lottery participation and happiness. Using data from the British Gambling Prevalence Survey 2010 and utilizing propensity score matching methods, we find a small positive effect of lottery participation on happiness for individuals who engage in lottery play for recreational purposes.

KEYWORDS

Gambling; lottery play; subjective well-being; happiness

JEL CLASSIFICATION

I31; L83

I. Introduction

Currently, lottery play is by far the most popular form of gambling in the Northern hemisphere. Recent nationwide surveys have shown that annual participation rates typically range between 50% and 70% (Garvía 2007; Beckert and Lutter 2013).¹ For many people, winning the lottery is one of the happiest experiences they can dream of. The idea of suddenly having sufficient money to make a round-the-world-trip, to buy a yacht or a sports car, or to not worry about money for the rest of one's life may be a very seductive prospect. However, from an economic perspective, lotteries are considered far from a rational investment given their negative marginal expected returns. The average return for each euro spent on lottery tickets is typically slightly over 50%, which is also very low compared with other forms of gambling such as horseracing, slot machines and blackjack (Clotfelter and Cook 1990).

Certain researchers have attributed widespread lottery play to irrational beliefs that people uphold regarding their chances of winning the lottery (Ariyabuddhipongs 2011; De Paola and Scoppa

2014). Another explanation for the popularity of lottery gambling is that lottery players may experience positive anticipatory emotions before the draw. These positive emotions may result from one's hope for a happy life, from the fun and excitement during the build-up to the draw, or from social bonding activities (Kocher, Krawczyk, and van Winden 2014). Whereas some people can enjoy the lottery by savouring the dream of winning millions before the draw, others enjoy the fun of the game or view it as an opportunity for social interaction (e.g. through syndicate lottery play). Along these lines, part of the value of the lottery ticket may be consumed before the draw.

If lottery play indeed induces positive anticipatory emotions and the emotions experienced after the draw (in case the participant has won nothing) are non-negative, one would expect a positive relationship between lottery play and overall happiness. This expectation is based on the widespread belief that the degree to which an individual judges the overall quality of his life-as-a-whole favourably is largely dependent on the pleasantness of the emotions and moods that he or she experiences (Veenhoven 2009).

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¹At the same time, it should be noted that lottery sales and participation rates have been relatively stable in recent years in Europe (The European Lotteries 2012) and the United States (Welte et al. 2015).

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Although several studies have examined the relationship between lottery *winning* and life satisfaction (e.g. Brickman, Coates, and Janoff-Bulman 1978; Gardner and Oswald 2007; Kuhn et al. 2011; Apouey and Clark 2015), relatively little is known regarding how lottery *participation* affects overall subjective well-being or happiness levels.

To our knowledge, this study is the first to investigate the relationship between lottery play and overall happiness. Here, we not only focus on the average effect of lottery play on overall happiness but also examine how one's motivation to participate in the lottery influences the relationship between lottery play and overall happiness. We distinguish between people who play the lottery for money, for fun and for social reasons. Here, it can be expected that different motivations to play the lottery are related to different emotions experienced around the draw.

II. Data and main variables

To investigate the relationship between lottery play and overall happiness, we utilize the British Gambling Prevalence Survey (Wardle et al. 2011), which is a large-scale, nationally representative survey that focuses on participation in gambling and the prevalence of problem gambling in Great Britain. In total, our sample consists of nearly 7700 observations for 2010.

Overall happiness is measured by the following question: 'Taking all things together on a scale of 1–10, how happy would you say you are these days? Here, 1 means very unhappy and 10 means very happy'. On average, the participants in the survey provided their life a score of 7.86, which is comparable to the average happiness obtained in Great Britain from other British surveys (Veenhoven 2015).

Lottery play is assessed based on whether the individual has purchased tickets for the national lottery or another lottery draw in the past 12 months. In our sample, 64% of the respondents indicated that they purchased a ticket in the past 12 months, whereas 57% of the lottery players indicated being very regular lottery players (playing at least once per week based on the past 12 months).

With regard to motivation, we distinguished between three main motivations to gamble in general and to participate in the lottery in particular (also refer to Wardle et al. 2011): to earn money, to play a fun game (i.e. for recreation), and to engage in a social activity. In this regard, people were asked whether they participate in gamble activities (1) ... for the chance of winning big money?, (2) ... to make money?, (3) ...because it's fun?, (4) ...as a hobby or a pastime?, (5) ...to be sociable? or (6) ...because it's something that I do with my friends or family?² Possible answer categories included: Always, Often, Sometimes and Never. Lottery players were considered to have a money-induced motivation if they answered 'Always' or 'Often' on question (1) or (2), whereas the answers 'Always' or 'Often' on question (3) or (4) were interpreted as a recreation-induced motivation and on question (5) or (6) were interpreted as a social-induced motivation. Of all individuals who participated in the lottery in the past 12 months, 62% indicated they gambled to earn money, whereas 46% and 22% of the lottery players perceived gambling as a recreational activity or a social activity, respectively; 27% of the lottery players had more than one motivation, whereas, for 24% of the lottery players, none of the above-mentioned reasons were noted.

III. Methodology

A potential disadvantage of using standard generalized linear models to study the correlates of overall happiness is that the observed effect of lottery participation on overall happiness can be the result of the self-selection of (un)happy individuals in lottery games. The differences in happiness between lottery players and nonlottery players may be dependent on personal characteristics that affect whether people participate in the lottery. For example, a bad mood has been found to increase lottery participation because the efforts for mood regulation of negative emotions deplete self-control and therefore, make people more susceptible to the 'seduction' of buying lottery tickets (Bruyneel et al. 2006).

Selection bias can be severely reduced when using propensity score matching methods (Rosenbaum and Rubin 1983), in which lottery players would be

²Please note that given the nature of lottery playing, we do not focus here on reasons related to achievement or coping.

compared with nonlottery players who are as similar as possible in all other respects (Becker and Ichino 2002). In this fashion, propensity score matching can best be compared to a randomized control trial in which two groups of individuals are randomly assigned to the treatment under study or to a control group. In our study, the treatment would be lottery participation, and the control group would be the nonlottery participants. The effect of lottery play can accordingly be considered to be the average treatment effect on the treated (ATT) and can be defined as the difference in the expected happiness scores between players and nonplayers.

Because finding exact matches in the process of matching numerous variables is difficult (Shadish, Cook, and Campbell 2002), in propensity score matching, variables are often combined into a multivariate composite that is used to match untreated individuals (nonplayers) with treated individuals (players). In our study, we use the Gaussian kernel method³ to match the individuals. The British Gambling Prevalence Survey allows us to use a large set of variables for the matching procedure. Specifically, individuals are matched using a binary probit model that includes the following matching variables: attitude towards gambling, gender, age, ethnicity, education, marital status, number of children in the household, occupational status, income, financial situation, health, smoking behaviour, drinking behaviour and region of residence (refer to Appendix). ATTs are estimated for the complete sample and for the three different motivations.⁴

IV. Empirical results

The main results of the propensity score matching are presented in Table 1, in which we compare lottery players and nonplayers. Regarding the results for the total sample in Table 1, we find that lottery players are not significantly happier than nonlottery players. However, when we focus on the different

motivations, we find that lottery players who play for recreational purposes ('fun motivation') are significantly happier than nonlottery players. Respondents for whom one of the motivations to participate in the lottery is for fun or for a hobby report, on average, a 0.142 higher happiness score than similar nonlottery players.

In addition, socially motivated lottery players appear to be slightly happier than nonplayers; however, there is excessive uncertainty regarding the true value of these estimates, particularly given the limited number of lottery players in our sample who perceive the lottery to be a social activity (ATT = 0.107, bootstrapped SE = 0.076, p -value = 0.159). When we examine all individuals with a social motivation and/or a for-fun motivation (i.e. nonmoney motivation), we find that these individuals are generally happier than nonplayers (ATT = 0.187, bootstrapped SE = 0.078, p -value < 0.05). In this regard, the

Table 1. Average treatment effect on the treated by motivation – played in the past 12 months.

Motivation	Average OH lottery players	Average OH lottery nonplayers	ATT	<i>N</i> lottery players
All	7.916	7.860	0.056 (0.042)	5024
Money motivation	7.897	7.856	0.041 (0.056)	3166
Fun motivation	8.011	7.868	0.142** (0.062)	2351
Social motivation	7.979	7.872	0.107 (0.076)	1083
Only money motivation	7.754	7.859	-0.105 (0.075)	1206
Only fun motivation	8.064	7.883	0.181* (0.098)	361
Only money and fun motivations	8.000	7.864	0.136* (0.083)	1194
Not for money motivations	8.044	7.857	0.187** (0.078)	678
All three motivations	7.995	7.889	0.105 (0.101)	590
Other/no specific motivation	7.897	7.882	0.015 (0.056)	1180

** $p < 0.05$, * $p < 0.10$. Total sample consists of 7670 respondents, of which 2646 are nonlottery players. Average treatment effects on the treated (ATTs) given, with bootstrapped SEs in parentheses. OH = overall happiness. 'Only Social Motivation', 'Only Money and Social Motivation' and 'Only Fun and Social Motivation' treatments could not be assessed separately because of too few observations and failure to meet common support conditions.

³Results do not change when using 5-nearest neighbour methods. These results are available upon request from the authors.

⁴It should be noted that propensity score matching relies on the following two main assumptions: the unconfoundedness of control variables and the common support. The first assumption implies that the control variables used to match the observations in our sample capture all the differences between those who participate in the lottery and those who do not; thus, any observed differences in happiness levels are attributable to lottery play. The latter assumption, which is testable, assumes that individuals (observations) with the same characteristics have equal probabilities of belonging to the lottery participants group and the nonlottery participants group. Post-estimation tests showed that this latter assumption was most often not violated because the bias of each single variable in all estimations slightly exceeded the 10% threshold in a few cases (D'Agostino 1998). These test statistics are available upon request.

frequency of playing the lottery also appears to matter: Respondents who indicated that they play very regularly (at least once per week) reported being happier than the not-for-money players who play less regularly; however, this difference was not statistically significant (ATT = 0.111, bootstrapped SE = 0.128, p -value = 0.386).

At the same time, money-motivated lottery players are, on average, not happier than nonlottery players. This finding is particularly evidenced by the insignificant ATT for the group that participates in lottery draws only for money. Most notably, if we separately compare the only-for-fun lottery players with like-minded only-for-money lottery players, we find that the first group is significantly happier than the latter (ATT = 0.242, bootstrapped SE = 0.110, p -value < 0.05). Similarly, the not-for-money players are significantly happier than the only-for-money players (ATT = 0.218, bootstrapped SE = 0.124, p -value < 0.10).⁵

V. Concluding remarks

This study adds to the expanding literature that focuses on what makes people happy (MacKerron 2012). We focus on the relationship between happiness and consumption, in which consumption is related to lottery ticket purchases. Although we do not find a general effect of lottery participation on overall happiness, we find that individuals who gamble for fun or perceive gambling as a hobby or pastime are significantly happier than similar nonlottery players. In addition, non-money-motivated players, in general, and for-fun lottery players, in particular, are significantly happier than comparable individuals who simply gamble with the hope to make (big) money. An explanation for the happiness premium for those who play for fun is that experiential purchases have been associated with happiness increases, whereas materialistic aspirations have been related to decreases in happiness (Van Boven 2005; Gilovich, Kumar, and Jampol 2014). In this regard, it can be expected that disappointment after the draw is also higher among lottery participants who play for the money.

The increased happiness levels stemming from the appreciation of the process that leads to the lottery

draw may explain why certain people engage in lotteries despite the relatively low expected returns. How personality characteristics and emotional experiences explain the relationship between gambling and subjective well-being should be further explored in future research.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

- Apouey, B., and A. E. Clark. 2015. "Winning Big but Feeling No Better? the Effect of Lottery Prizes on Physical and Mental Health." *Health Economics* 24 (5): 516–538. doi:10.1002/hec.v24.5.
- Ariyabuddhiphongs, V. 2011. "Lottery Gambling: A Review." *Journal of Gambling Studies* 27 (1): 15–33. doi:10.1007/s10899-010-9194-0.
- Becker, S. O., and A. Ichino. 2002. "Estimation of Average Treatment Effects Based on Propensity Scores." *The Stata Journal* 2 (4): 358–377.
- Beckert, J., and M. Lutter. 2013. "Why the Poor Play the Lottery: Sociological Approaches to Explaining Class-Based Lottery Play." *Sociology* 47 (6): 1152–1170. doi:10.1177/0038038512457854.
- Brickman, P., D. Coates, and R. Janoff-Bulman. 1978. "Lottery Winners and Accident Victims: Is Happiness Relative?" *Journal of Personality and Social Psychology* 36 (8): 917–927. doi:10.1037/0022-3514.36.8.917.
- Bruyneel, S., S. Dewitte, P. H. Franses, and M. G. Dekimpe. 2006. "Why Consumers Buy Lottery Tickets When the Sun Goes down on Them. the Depleting Nature of Weather-Induced Bad Moods." *Advances in Consumer Research* 33 (1): 46–47.
- Clotfelter, C. T., and P. J. Cook. 1990. "On the Economics of State Lotteries." *The Journal of Economic Perspectives* 4 (4): 105–119. doi:10.1257/jep.4.4.105.
- D'Agostino, R. B. 1998. "Tutorial in Biostatistics: Propensity Score Methods for Bias Reduction in the Comparison of a Treatment to a Non-Randomized Control Group." *Statistics in Medicine* 17 (19): 2265–2281. doi:10.1002/(ISSN)1097-0258.
- De Paola, M., and V. Scoppa. 2014. "Media Exposure and Individual Choices: Evidence from Lottery Players." *Economic Modelling* 38 (1): 385–391. doi:10.1016/j.econmod.2014.01.006.
- Gardner, J., and A. J. Oswald. 2007. "Money and Mental Wellbeing: A Longitudinal Study of Medium-Sized Lottery Wins." *Journal of Health Economics* 26 (1): 49–60. doi:10.1016/j.jhealeco.2006.08.004.

⁵Largely similar conclusions are drawn when focusing on only (1) regular lottery players (at least once per month) versus nonlottery players and (2) lottery players who played the previous week and nonlottery players. These results are available upon request.

- Garvía, R. 2007. "Syndication, Institutionalization, and Lottery Play." *American Journal of Sociology* 113 (3): 603–652. doi:10.1086/521847.
- Gilovich, T., A. Kumar, and L. Jampol. 2014. "A Wonderful Life: Experiential Consumption and the Pursuit of Happiness." *Journal of Consumer Psychology* 25 (1): 138–151.
- Kocher, M. G., M. Krawczyk, and F. van Winden. 2014. "Let Me Dream On! Anticipatory Emotions and Preference for Timing in Lotteries." *Journal of Economic Behavior & Organization* 98 (1): 29–40. doi:10.1016/j.jebo.2013.12.006.
- Kuhn, P., P. Kooreman, A. Soetevent, and A. Kapteyn. 2011. "The Effects of Lottery Prizes on Winners and Their Neighbors: Evidence from the Dutch Postcode Lottery." *The American Economic Review* 101 (5): 2226–2247. doi:10.1257/aer.101.5.2226.
- MacKerron, G. 2012. "Happiness Economics from 35 000 Feet." *Journal of Economic Surveys* 26 (4): 705–735. doi:10.1111/joes.2012.26.issue-4.
- Rosenbaum, P. R., and D. B. Rubin. 1983. "The Central Role of the Propensity Score in Observational Studies for Causal Effects." *Biometrika* 70 (1): 41–55. doi:10.1093/biomet/70.1.41.
- Shadish, W. R., T. D. Cook, and D. T. Campbell. 2002. *Experimental and Quasi-Experimental Design for Generalized Causal Inference*. Boston, MA: Houghton-Mifflin.
- The European Lotteries. 2012. *European Lotteries' Report on Lotteries in the EU and in Europe in 2011*. Lausanne: European State Lotteries and Toto Association.
- Van Boven, L. 2005. "Experientialism, Materialism, and the Pursuit of Happiness." *Review of General Psychology* 9 (2): 132–142. doi:10.1037/1089-2680.9.2.132.
- Veenhoven, R. 2009. "How Do We Assess How Happy We Are? Tenets, Implications and Tenability of Three Theories." In *Happiness, Economics and Politics: Towards a Multi-Disciplinary Approach*, edited by A. K. Dutt, and B. Radcliff, 45–69. Cheltenham, UK: Edward Elgar Publishers.
- Veenhoven, R. 2015. "Happiness in United Kingdom (GB)." World Database of Happiness, Erasmus University Rotterdam, The Netherlands. Accessed 8 November 2015. <http://worlddatabaseofhappiness.eur.nl>
- Wardle, H., A. Moody, S. Spence, J. Orford, R. Volberg, and D. Jotangia. 2011. *British Gambling Prevalence Survey 2010*. Norwich: National Centre for Social Research.
- Welte, J. W., G. M. Barnes, M. C. O. Tidwell, J. H. Hoffman, and W. F. Wiczorek. 2015. "Gambling and Problem Gambling in the United States: Changes between 1999 and 2013." *Journal of Gambling Studies* 31 (3): 695–715. doi:10.1007/s10899-014-9471-4.

Appendix. Matching variables used in propensity score matching

Variable	Type	Note
Attitude towards gambling	Continuous	Attitudes towards gambling scale (ATGS-8) ^a
Gender	Categorical	Female–male
Age	Continuous	
Ethnicity	Categorical	White–other
Education	Categorical	Low-level education (ISCED 1–2), medium-level education (ISCED 3–4), high-level education (ISCED 5–6).
Marital status	Categorical	Married–otherwise
Number of children in the household	Categorical	None, 1 child, 2 children, 3 or more children
Occupational status	Categorical	Employed, unemployed, retired, student, other
Household income (band)	Continuous	
Financial problems	Categorical	No problems at all, slight problems only, definite problem, very severe problems
Self-assessed health status	Categorical	Very good/good, fair, bad/very bad
Long-standing health illness	Categorical	Yes–no
Smoking behaviour	Categorical	Current smoker, not current smoker
Drinking behaviour	Categorical	No drinker, not heavy drinker (max. 1–4 units on heaviest drinking day), heavy drinker (>4 units on heaviest drinking day).
Region of residence	Categorical	1 of the 12 government office (NUTS-1) regions in Great Britain.

^aBased on questions: (1) people should have the right to gamble whenever they want; (2) there are too many opportunities for gambling nowadays; (3) gambling should be discouraged; (4) most people who gamble do so sensibly; (5) gambling is dangerous for family life; (6) on balance gambling is good for society; (7) gambling livens up life; and (8) it would be better if gambling was banned altogether.