Desirability Bias and its Impact on Lottery Ticket Sales
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Abstract
Since Kahneman and Tversky (1979) has suggested the decision weight as opposed to the stated probability, numerous research has confirmed the s-shaped weighting function that illustrates the discrepancy between objective and subjective probability (Kahneman and Tversky 1979; Prelec 1998; Tversky and Kahneman 1992; Wu and Gonzales 1996). We investigate how the individuals’ subjective probability about their winning gamble is amplified as the draw timing gets closer. In doing so, we used the daily basis lottery sales data for one year from 1590 stores. We assumed that the changing pattern of sales data from Sunday to Saturday can be a good proxy measure of the changing pattern of subjective probability at any given periods. In addition, we examine the impact of external factors such as lucky store, temperature, and income on the lottery sales from Sunday to Saturday.

Different from the previous experiment based research by using the lowest probability of event as 0.01, our research provides insight based on the analysis of a real case lottery data having an extremely low probability (i.e., 0.00000027) to win the first prize. In general the sales on Saturday (draw day) seems to be amplified by 14 times compared to that of Sunday (a day after draw). Lucky stores boosted sales asymmetrically by 14% (Guryan et al. 2008) with more sales on Friday and Saturday. Individuals in high income district tend to purchase more lottery tickets (108%) but tend to enjoy delayed consumption with lower ratio of Saturday to Sunday (2.33) compared to those in low income district (7.38).

Dr Janghyuk Lee is an associate professor of marketing at Korea University, Business School, and received Ph.D. from ESSEC in 2000. Before joining Korea University, he had a tenure track position at University of Reading and HEC Paris as well as a visiting one at KAIST, Tsing Hua University SEM, and Tsukuba University. His research covers target marketing and customer engagement by using digital media. He has published in Marketing Science, Strategic Organization, Communications for Association of Information System, Database, Journal of Services Marketing, etc. In industry, he worked for Samsung Electronics and co-founded mOculus specialized in targeting algorithm.

All interested are welcome.