

DO YOU CALL THAT A WIN?

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I was sitting behind the mirror wall in a focus group session recently when I heard something that set me off on a mission. I am reporting back from that mission now, with news about how people behave when they win prizes in instant games.

In a focus group, those of us who sit behind the mirror wall are meant to quietly watch and listen while those around a table in the adjoining room talk about something that has some relevance to all of them (the “focus”). Moving the talk along and keeping the focus is the role of a skilled practitioner who also sits at the table. This evening, the focus was on scratch-off games, and the thing that particularly got my attention happened while they were talking about the prizes they won.

Now, focus groups are meant to provide qualitative information – not “how much, how often,” but “how did that make you feel.” A benefit of focus groups is that you sometimes hear a phrase that vividly captures a way of looking at things, and takes on the weight of a great insight. A hazard of focus groups is that you don’t know whether this is really an insight, or just a vivid phrase.

The gem of the evening was spoken by a player I will call Baseball Hat (my notes don’t include names). He had been very active in the discussion, along with a couple of women I will call Hoop Earrings and Skin Art. Baseball Hat, was, by his own account, a player of big-dollar tickets and a man with uncommonly good luck. Hoop Earrings enjoyed crossword games and felt like they cost her very little to play. Skin Art was in it for the big prize.

“A break-even prize is an insult to me. It’s not even worth

my trouble to cash it.”

This was literally the last word on prizes. I wrote down Baseball Hat’s phrase and later, when the groups were done, I took the instant product manager aside and asked her about it.

“That’s true!” she said. “You can’t have a lot of break-even prizes, or you’ll upset the core players!”

I took the account lead from the ad agency aside and asked her about it.

“That cowboy!” she said. “He was just trying to impress the woman with the tattoos!”

As I pondered what I had written down, I realized that Baseball Hat had made a statement about feelings (“insult”) and a statement about behavior (“not cash it”). I took it as my mission to evaluate the behavior part. Do people really neglect to cash a prize because it is just a break-even? Is the value of a prize simply the value of the money, or alternatively, does the value of a prize depend on what the player spent to win it?

I am reporting on a study that is based on the records we build in the normal course of lottery business.

The analysis that follows shows: whether a prize is claimed depends on its absolute value, not whether it was a “break-even” prize or not.

The Details

This analysis compares the number of prizes that were actually claimed or validated, to the number that were sold.

We know exactly the number claimed: that is part of our accounting. We can make a very precise estimate of the number sold. My question is about the difference – the unclaimed prizes. What can we learn about these?

Instant games are printed according to a precise specification of prizes: a certain number of prize tiers, with a certain number of winners in each, distributed across tickets in a way that is not too predictable. The printed games are handled with great care during their whole life cycle: packs of tickets generally do not “go missing” in shipment, or during storage in a warehouse. This is important for an analysis that deals with “missing prizes.”

Once a pack of tickets is activated by a retailer, each ticket has the potential to be worth nothing (usually) or some amount of money (potentially a lot). The actual value is revealed when the ticket is validated.

We know how many tickets of a game were activated by retailers. Retailers generally handle activated tickets like cash, so tickets that are not purchased by players (or stolen, or played by the retailer) are generally returned to the lottery for credit. The lottery keeps a good account of tickets returned for credit. Ultimately, once a game closes, the lottery shreds returned tickets (and also tickets that were never distributed). Thus the number of tickets that were activated and not returned for credit (“net activated”) is a large and precisely known number.

How many of the net activated tickets were winners? While we cannot know this number exactly, we can estimate it precisely. For instance, if we know that the whole game contained 3,220,400 tickets and that exactly 986,236 of these would have validated as prizes, we expect that the proportion $986,236/3,220,400$ (or 30.625 percent) would describe the percentage of net activated tickets that were winners. We can apply this sort of estimation with great confidence for the total number of prizes, and for the lower prize tiers where the print contained lots of winners. Our confidence in the estimate must decrease* for the higher prize tiers, where the whole game may contain only a few such prizes.

Of course, there are multiple reasons that a prize in an instant game may go unclaimed:

- It is possible that no player “plays” the ticket by uncovering its symbols.
- A player may uncover symbols indicating a win, and fail to recognize this.
- A player may uncover and recognize a win, but fail to present the ticket for validation within the time period provided.

Failing to validate a recognized winning ticket probably depends on the perceived value of the win. A small win may not motivate a player to go through the procedure for getting paid – after all, there is a time cost involved. For bigger wins, we may assume that there is motivation enough. If a bigger win goes unclaimed, this probably represents a case where the win was simply not recognized.

Studying the rate of unclaimed prizes by prize tier within one game thus potentially tells us about two things:

How hard was it for players to recognize any win?

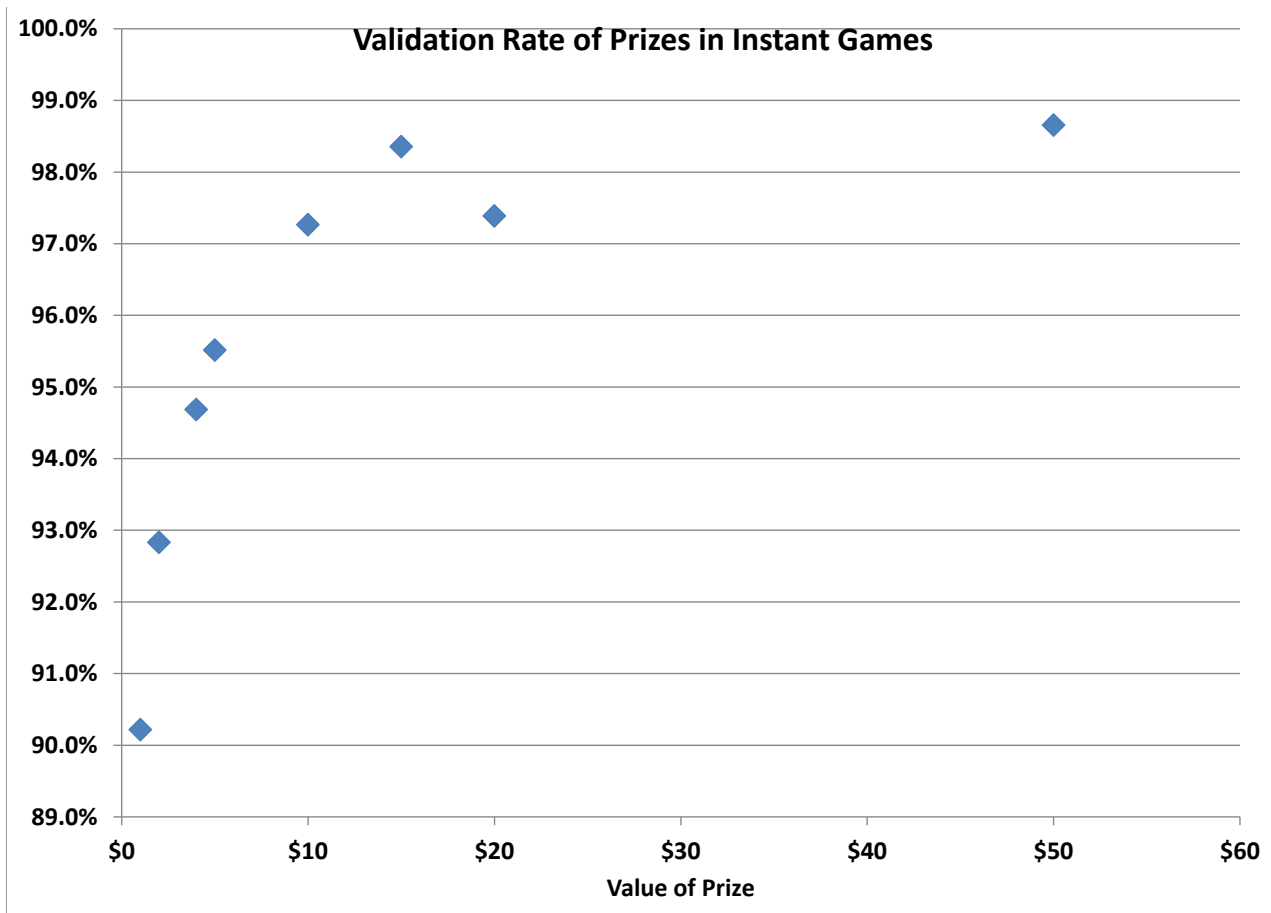
If we can identify a prize tier where the prizes are both abundant enough for us to make a good estimate of how many were actually sold, and valuable enough that we don’t question the motivating power of the prize, then we can get an estimate of the players’ ability to uncover and recognize wins. We can express this as a percentage (say, 98 percent).

How motivating was the win at a particular prize tier?

If we identify prize tiers with that have a validation rate significantly less than the players’ proven ability, then we can estimate how much less motivation these prizes created. Suppose that in a particular game the players were shown able to recognize wins 98 percent of the time, but that at the lowest prize tier the validation rate was only 90 percent. Then we could say that the lowest prize tier provided only $(90/98) = 92$ percent of the motivation of the bigger prize.

Finally, by comparing games we can test how much the motivating power of a prize depends on whether it is a break-even win. For instance, we pay prizes of \$5 in games that sell for \$5 (break-even), and also in games that sell for \$1. Is the \$5 prize less

* Saying “My confidence in the estimate of top prizes among the net activated tickets is not high” is much like saying “I am not sure that an unclaimed top prize ticket was not shredded.”



motivating in the \$5 game than it is in the \$1 game? If so, then the rate of validating \$5 prizes should be lower in the \$5 game than in the \$1 game.

The Results

I studied the records of dozens of games sold in Washington, to compare the validation rates of millions of prizes of different value. None of these games was of the “extended play” type. Players were able to recognize about 98 percent of all the winning tickets that were sold. The evidence for this comes from prizes worth more than \$20. Prizes worth more than \$20 were not consistently validated at a rate higher than 98 percent.

In fact, prizes worth \$10 or \$20 were also validated about 98 percent of the time.

Directly to my test of the behavior described by Baseball Hat: Between 95 and 96 percent of the \$5 prizes that were sold got validated, regardless of whether they were sold in games costing \$5, \$2, or \$1. I did not find any evidence that players validate prizes differently, depending upon what they paid for them.

The lowest-valued prizes had the lowest rate of validation, with about 10 percent of the one dollar prizes going unclaimed.

Since the price paid for the ticket does not seem to influence the rate of validation, it is useful to combine the validation rate data as shown in the chart below. This shows that the rate of validating winning tickets rises smoothly and quickly as the value of the ticket rises from \$1 to somewhere around \$10 or \$20, where it is already 98 to 99 percent (i.e. about as high as we might ever expect, given some limits on the ability of the players to recognize winners). In other words, in Washington in 2013 and 2014, players found it worth their while to cash all the prizes they could find that were worth \$10 or more.

What could this mean?

Thinking of the time and effort required to redeem a single lottery ticket, I was a little surprised that more than 90 percent of prizes worth only \$1 nevertheless got claimed.

Could this suggest that players typically make the transaction worthwhile by presenting several tickets together? Or does a piece of paper worth one dollar acquire more subjective value, just because it was a prize of some sort?

The rate of redemption of low-value prizes is important for design of prize structures mostly because of the impact on “churn” – that is, the tendency of players to “reinvest” winnings of a certain size in further lottery play. One insight from the results here is that about 10 percent of \$1 prizes are neither paid nor reinvested. They do not cost the lottery anything, and they do not directly support churn. They may possibly support a “win” perception that is better than a “loss” perception. This is evidently not because they are “break-even” prizes, but because they are simply not worth much money.

On the other hand, only 5 percent of prizes worth \$4 go unpaid – about the same as for prizes worth \$5. Are \$4 and \$5 prizes equally likely to be re-invested?

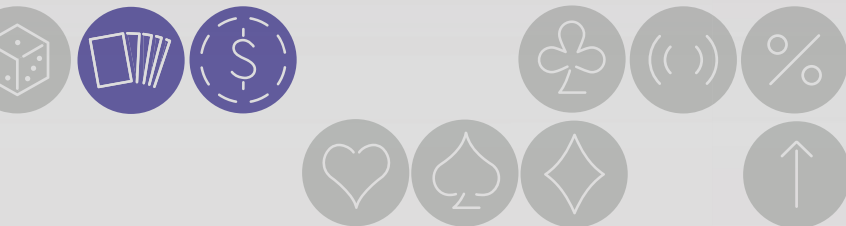
Many would say that the \$5 prize has a greater likelihood of being converted into a \$5 bill and folded into someone’s wallet, while the \$4 win has a greater likelihood of being immediately spent on something- maybe another lottery ticket. The data shown here suggest that a \$4 win is about as likely as a \$5 win to get redeemed- the first step toward supporting churn. If the \$4 prize is actually more likely to be re-invested, then it may be a better choice for an instant prize structure than the \$5 prize.

So, going back to what we hear in focus groups- it may well be that the player who says it is “not worth my time to cash those break-even prizes” is thinking of the lower-priced games, where a break-even win also is not worth much money. We have shown that those low-value prizes do more often go unclaimed. However this seems to be because of their low objective value, rather than any tarnish they acquire as a result of being break-even prizes. ■

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