Probability-Based Loyalty Programs Increase Engagement

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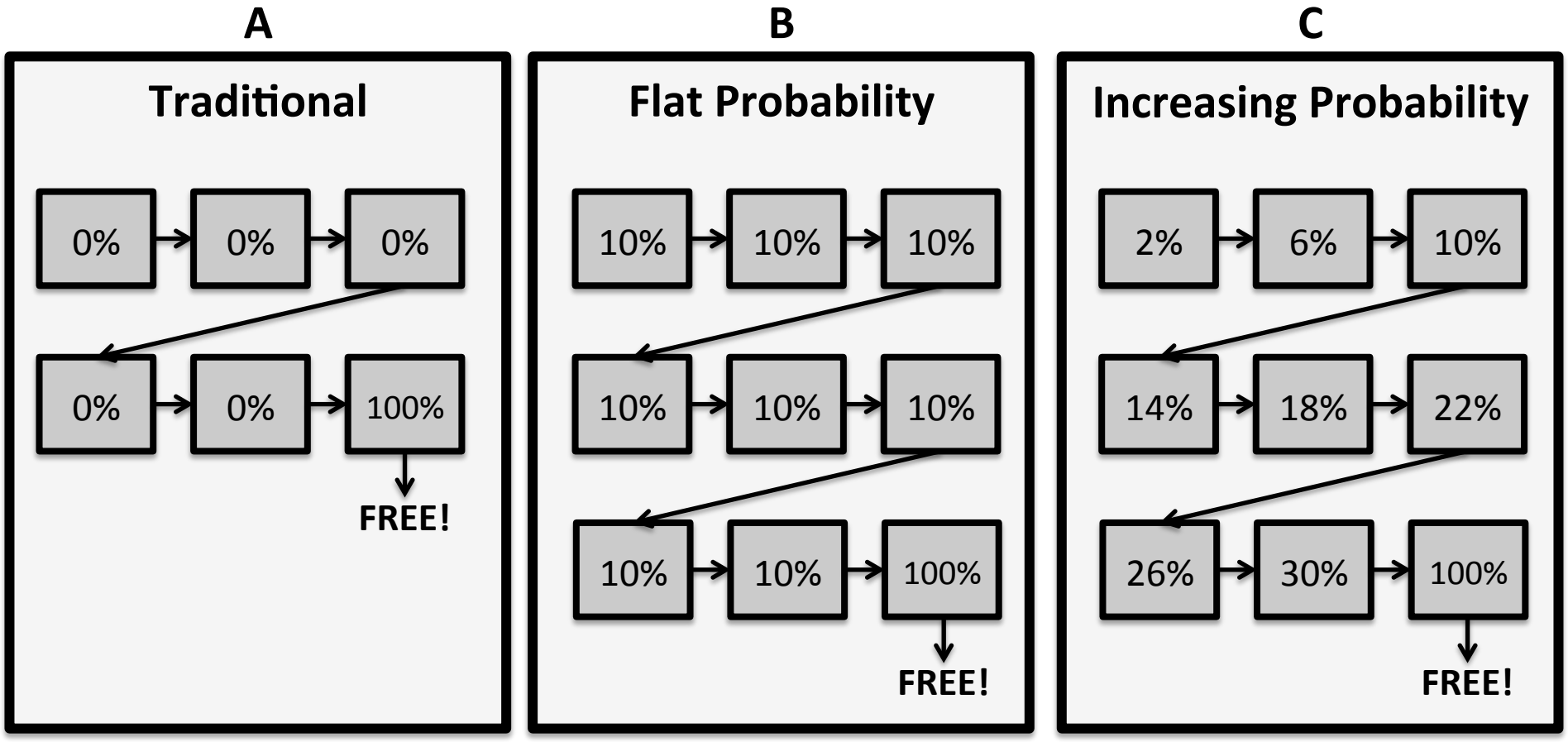
Purchase Number: *1* *2* *3* *4* *5* *6*

Chance of obtaining the free reward: 0% → 0% → 0% → 0% → 0% → 100%

FREE!


A
Traditional
0%
0%
0%
0%
0%
100%
FREE!
B
Flat Probability
10%
10%
10%
10%
10%
10%
10%
10%
100%
FREE!
C
Increasing Probability
2%
6%
10%
14%
18%
22%
26%
30%
100%
FREE!

The Programs Are Equivalent

After product purchase number	The liklihood of free product is	The number of product give-aways ON this occasion	The number of product give-aways BY this occasion	The number of product sales ON this occasion	The number of product sales BY this occasion
1	0.00	0.0	0.0	100.0	200.0
2	0.00	0.0	0.0	100.0	300.0
3	0.00	0.0	0.0	100.0	400.0
4	0.00	0.0	0.0	100.0	500.0
5	0.00	0.0	0.0	100.0	600.0
6	1.00	100.0	100.0	0.0	**600.0**
1	0.10	10.0	10.0	90.0	190.0
2	0.10	9.0	19.0	81.0	271.0
3	0.10	8.1	27.1	72.9	343.9
4	0.10	7.3	34.4	65.6	409.5
5	0.10	6.6	41.0	59.0	468.6
6	0.10	5.9	46.9	53.1	521.7
7	0.10	5.3	52.2	47.8	569.5
8	0.10	4.8	57.0	43.0	612.6
9	1.00	43.0	100.0	0.0	**612.6**
1	0.02	2.0	2.0	98.0	198.0
2	0.06	5.9	7.9	92.1	290.1
3	0.10	9.2	17.1	82.9	373.0
4	0.14	11.6	28.7	71.3	444.3
5	0.18	12.8	41.5	58.5	502.8
6	0.22	12.9	54.4	45.6	548.4
7	0.26	11.9	66.3	33.7	582.1
8	0.30	10.1	76.4	23.6	605.8
9	1.00	23.6	100.0	0.0	**605.8**

Study 1 - Introduction

- We conducted a lab study to compare the traditional and probability-based loyalty programs.
- The goal was to obtain a bonus payment, which could be achieved by accumulating stamps through writing reviews.

Study 1 - Methods

- Participants were 425 undergraduate students (242 females; M_{age} = 20.7) from a large public university located in China.
- Study was completed in a lab space with 30 available computers.
- Asked to leave restaurant reviews of at least 200 words on a website in exchange for a stamp.
  - Entire study lasted at most 30 minutes.
  - Participants received RMB 10 (approximately $1.5) showing up fee, plus an additional RMB 10 if the program was completed.

Study 1 - Methods

- Participants were randomly allocated to one of the following reward programs:
  - Traditional program (1 stamp per review).
    - N = 69.
  - Traditional program (2 stamps per review).
    - N = 72.
  - Flat probability-based reward program.
    - N = 113.
  - Increasing probability-based reward prc
    - N = 171.

Study 1 - Methods

每成功分享一个餐馆的就餐经历，并被后台审核为合格，
就会为你累积1枚“勋章”。

成功累积满9个勋章后，可以在调查结束后兑换10元现金奖励。

另外，每获得一枚勋章之后，就可以马上参与一次抽奖（中奖率10%）。
如果中奖，将算作你积满了9个勋章，可以直接结束调查并兑换10元奖励。
如果不中奖，继续累积满9个勋章后仍然可以兑换10元奖励。

获得抽奖机会 中奖率10% 中奖则直接 兑换10元奖励

获得抽奖机会 中奖率10% 中奖则直接 兑换10元奖励

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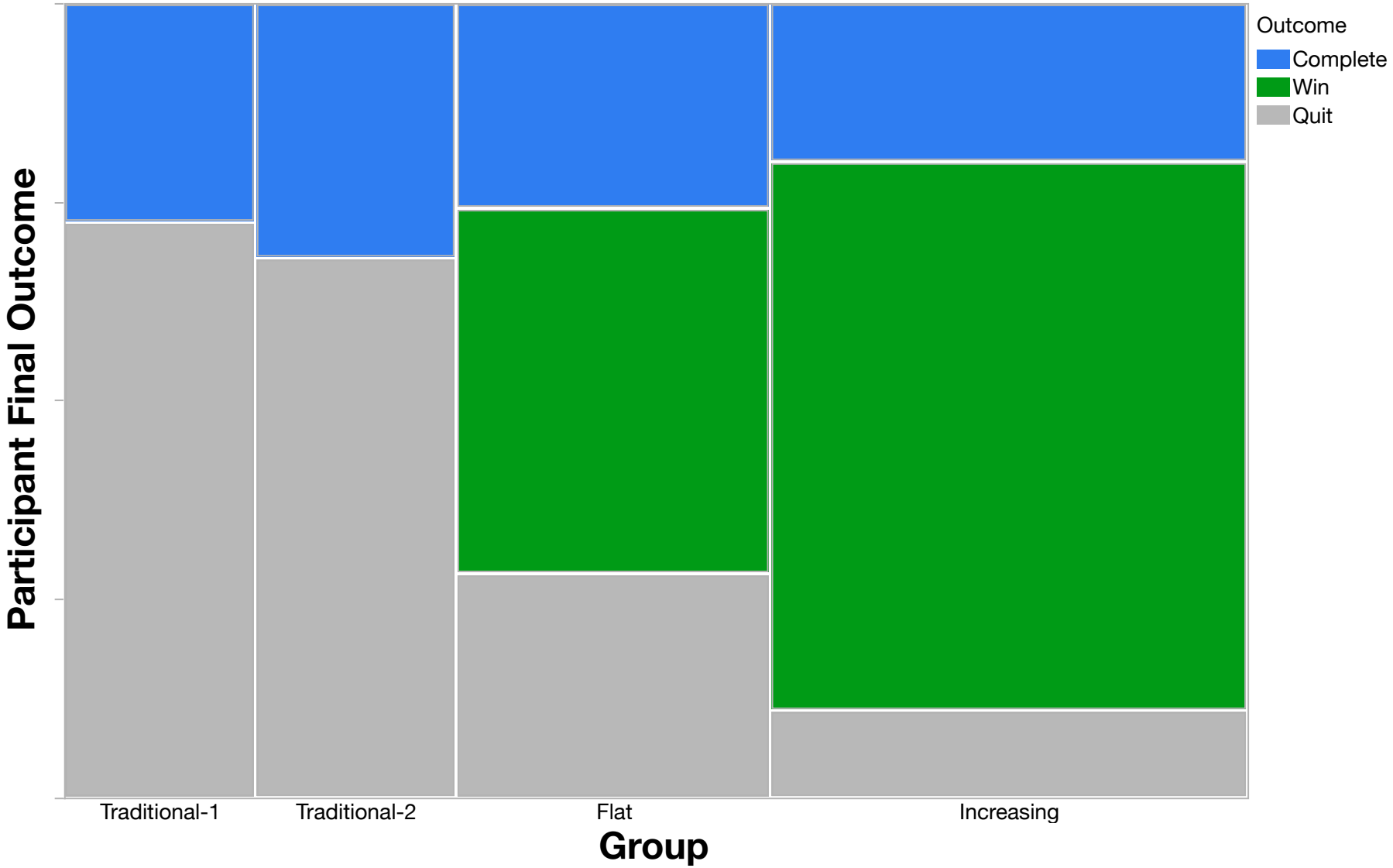
获得抽奖机会 中奖率10% 中奖则直接 兑换10元奖励

获得抽奖机会 中奖率10% 中奖则直接 兑换10元奖励

获得抽奖机会 中奖率10% 中奖则直接 兑换10元奖励

= 兑换10元现金奖励

Study 1 - Results



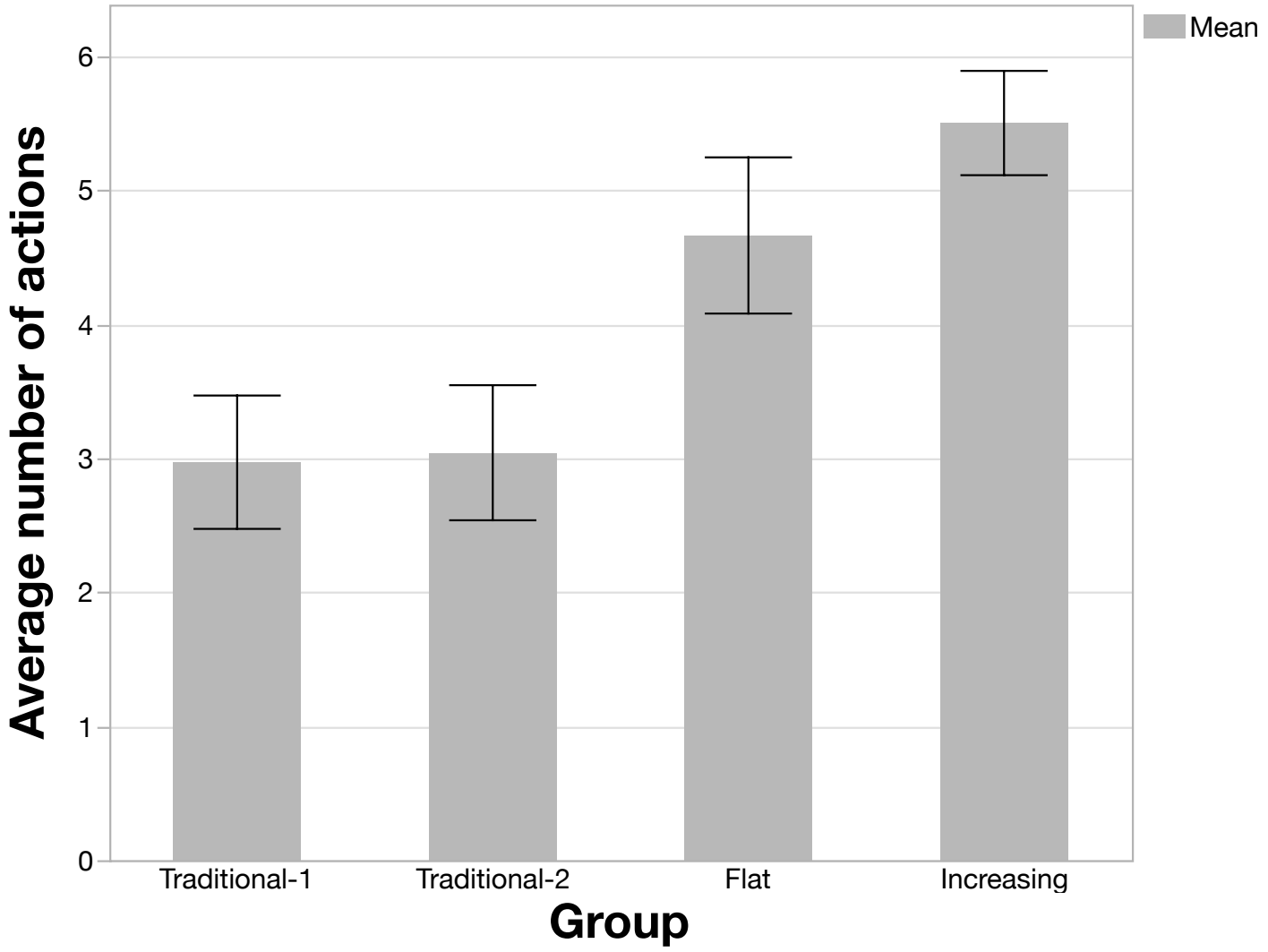
Study 1 - Results

	Traditional loyalty program-1		**Flat probability-based loyalty program**		
	# people who signed up = 69		# people who signed up = 113		
	# people who got this many stamps	# people who dropped out after this many stamps (%)	# people who got this many stamps	# people who won lottery (%)	# people who dropped out after this many stamps (%)
Stamp 1	69	26 (37.7%)	113	12 (10.6%)	11 (9.7%)
Stamp 2	43	11 (25.6%)	90	9 (10.0%)	8 (8.9%)
Stamp 3	32	10 (31.3%)	73	8 (11.0%)	6 (8.2%)
Stamp 4	22	2 (9.1%)	59	6 (10.2%)	3 (5.1%)
Stamp 5	20	1 (5.0%)	50	5 (10.0%)	2 (4.0%)
Stamp 6	19		43	4 (9.3%)	2 (4.7%)
Stamp 7	-	-	37	4 (10.8%)	0 (0.0%)
Stamp 8	-	-	33	4 (12.1%)	0 (0.0%)
Stamp 9	-	-	29	-	-
Completion	**19**		**29**		

Study 1 - Results

	Traditional loyalty program-2		**Increasing probability-based loyalty program**		
	# people who signed up = 72		# people who signed up = 171		
	# people who got this many stamps	# people who dropped out after this many stamps (%)	# people who got this many stamps	# people who won lottery (%)	# people who dropped out after this many stamps (%)
Stamp 1	72	25 (34.7%)	171	4 (2.3%)	7 (4.1%)
Stamp 2	47	18 (38.3%)	160	10 (6.3%)	5 (3.1%)
Stamp 3	29	4 (13.8%)	145	15 (10.3%)	4 (2.8%)
Stamp 4	25	2 (8.0%)	126	19 (15.1%)	2 (1.6%)
Stamp 5	23	0 (0.0%)	105	19 (18.1%)	1 (1.0%)
Stamp 6	23		85	19 (22.4%)	0 (0.0%)
Stamp 7	-	-	66	17 (25.8%)	0 (0.0%)
Stamp 8	-	-	49	15 (30.6%)	0 (0.0%)
Stamp 9	-	-	34	-	-
Completion	**23**		**34**		

Study 1 - Results



Study 1 - Discussion

- The probability-based programs produced greater overall engagement (i.e., lower drop-out rate; more overall actions taken).
- The increasing probability-based program produced greater overall engagement than the flat probability-based program.

Study 2 - Introduction

- We conducted a field study with an actual loyalty program in cooperation with a yogurt shop to replicate our basic finding in a more ecological context.
- The goal was to obtain a free yogurt voucher, which could be achieved by accumulating stamps through yogurt purchases.

Study 2 - Methods

- The participants were 400 customers of a yogurt shop located in China who were invited to sign up to a loyalty program.
  - Participant won a voucher for a free yogurt if the loyalty program was completed.
- Participants had a 30 days to complete the loyalty reward program by purchasing beverages and obtaining stamps.
  - Study ran May 9-June 7, 2016 (30 days).

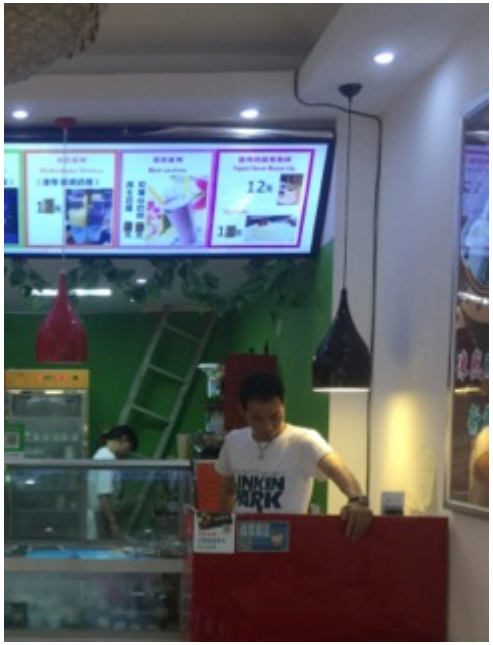
Study 2 - Methods

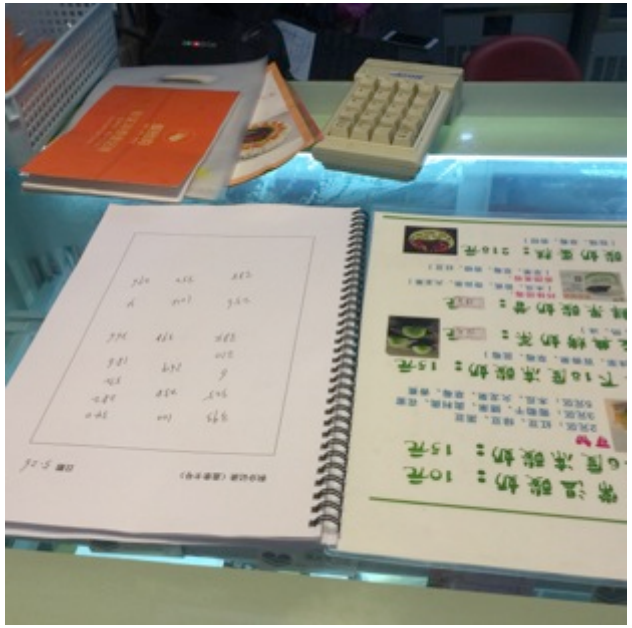
Study 2 - Methods

- Between-subjects design:
  - Traditional program:
    - 179 out of 200 accepted the invitation.
  - Flat probability-based reward program
    - 183 out of 200 accepted the invitation.

Study 2 - Methods

- Data recording:
  - A well-trained full-time research assistant kept a notebook documenting the card IDs that were used each day, which allowed us to keep track of the dates of all purchases.





Study 2 - Methods

- Procedure for the lottery program:

RA records ID in data book

RA records the card ID on the data book, collects the winners' cards, and offers the coupon

Customer **does** win lottery

Purchase

Receive stamp

Customer scans QR code

Customer directed to a lottery webpage

10%

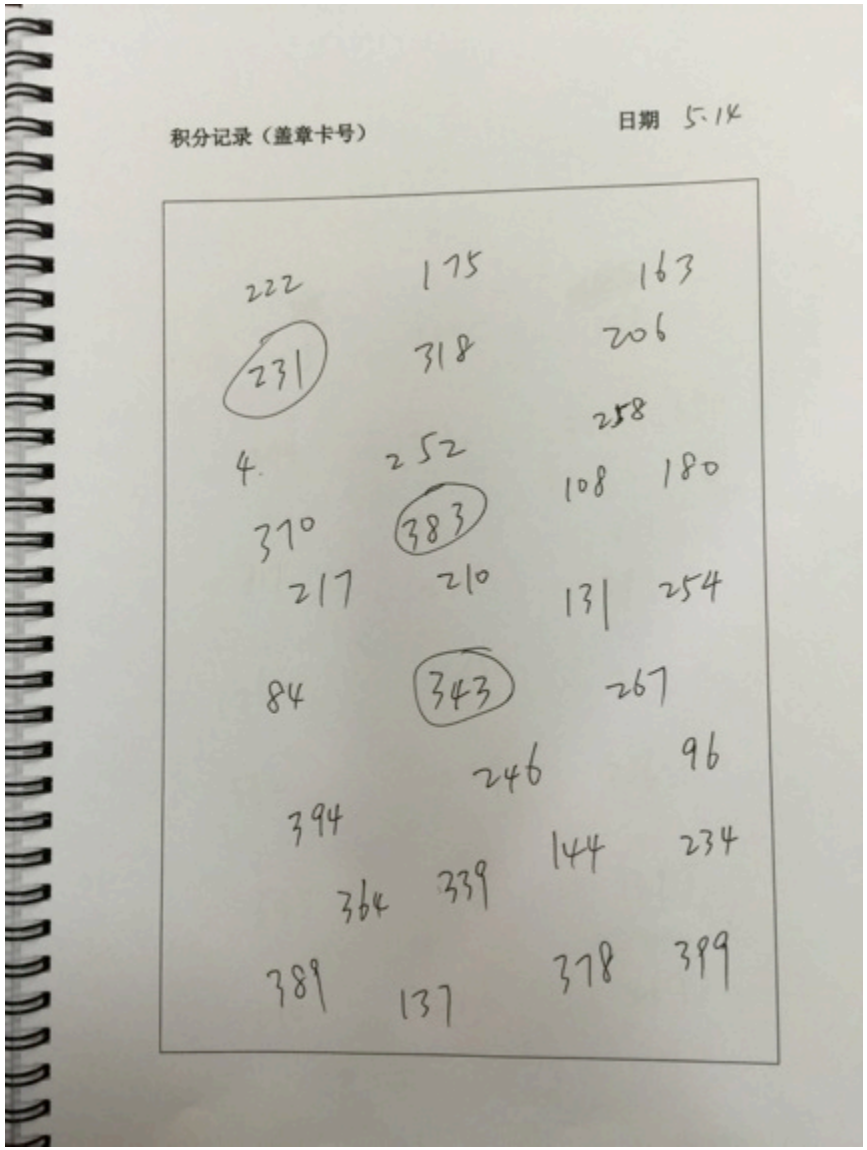
90%

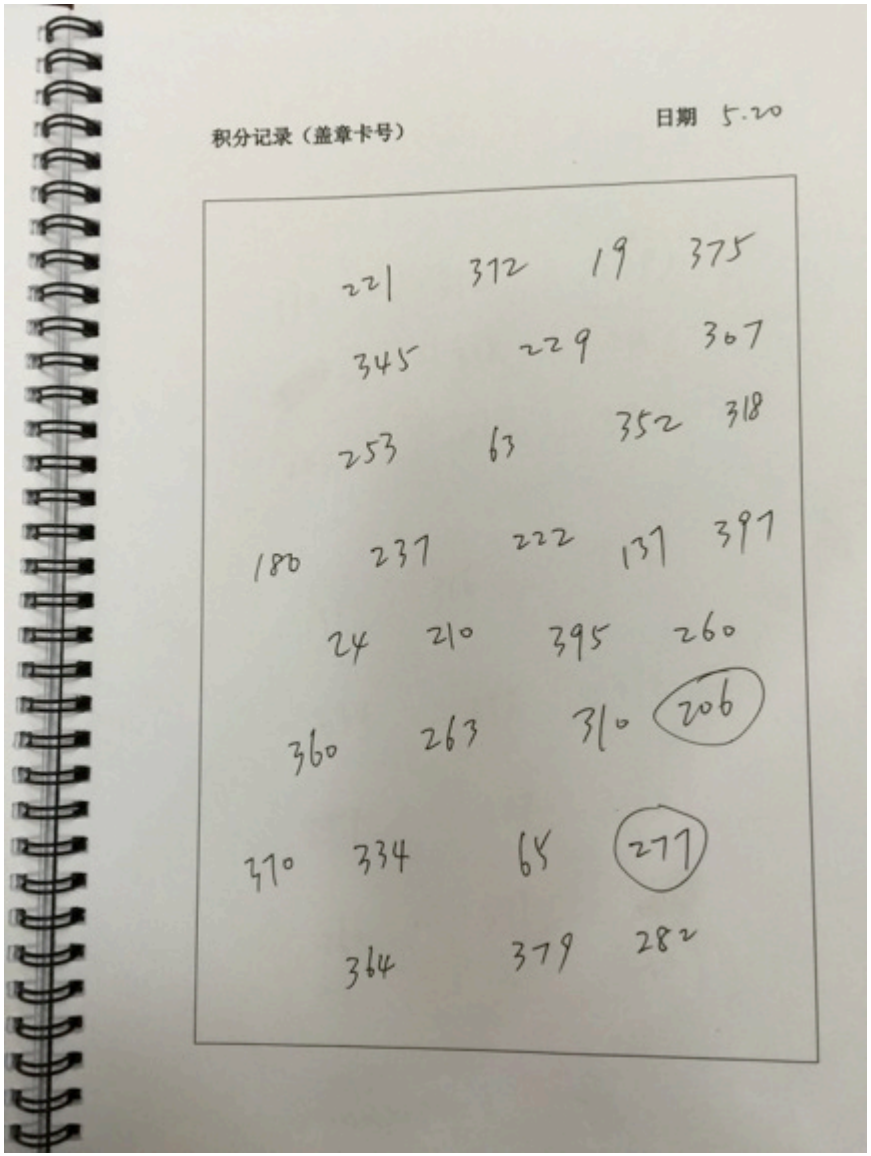
Customer **does not** win lottery

Study 2 - Methods

- QR code:
  - Scanning the QR code directs the customer to a webpage of lottery draw game.

Study 2 - Methods

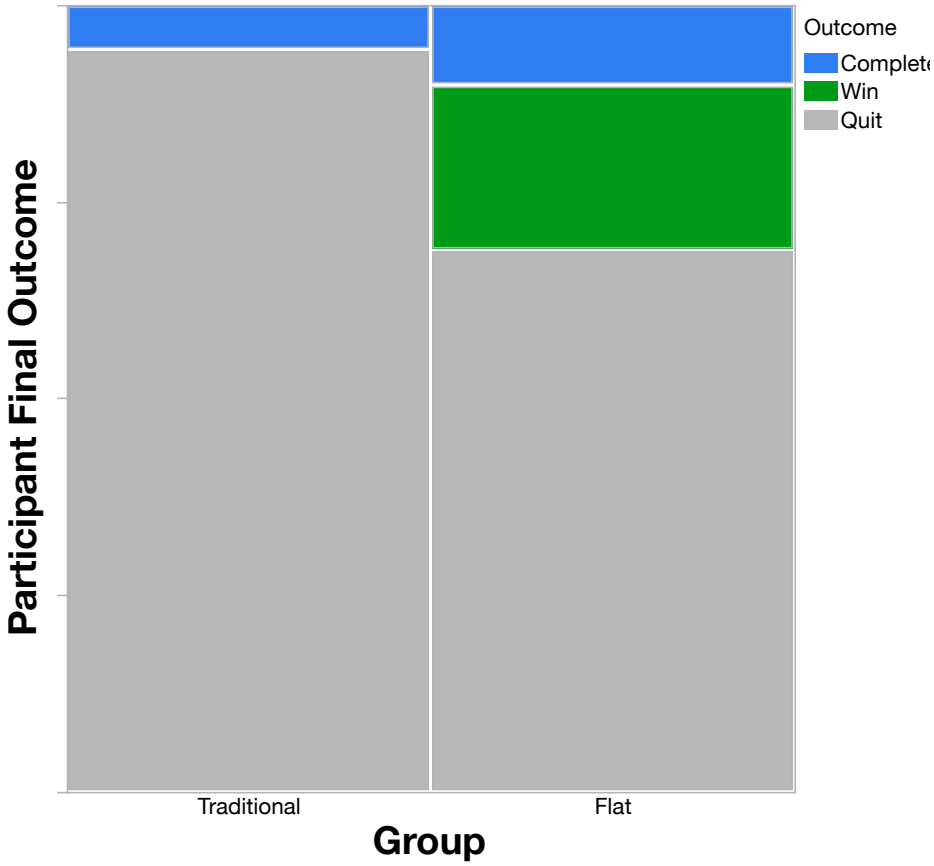




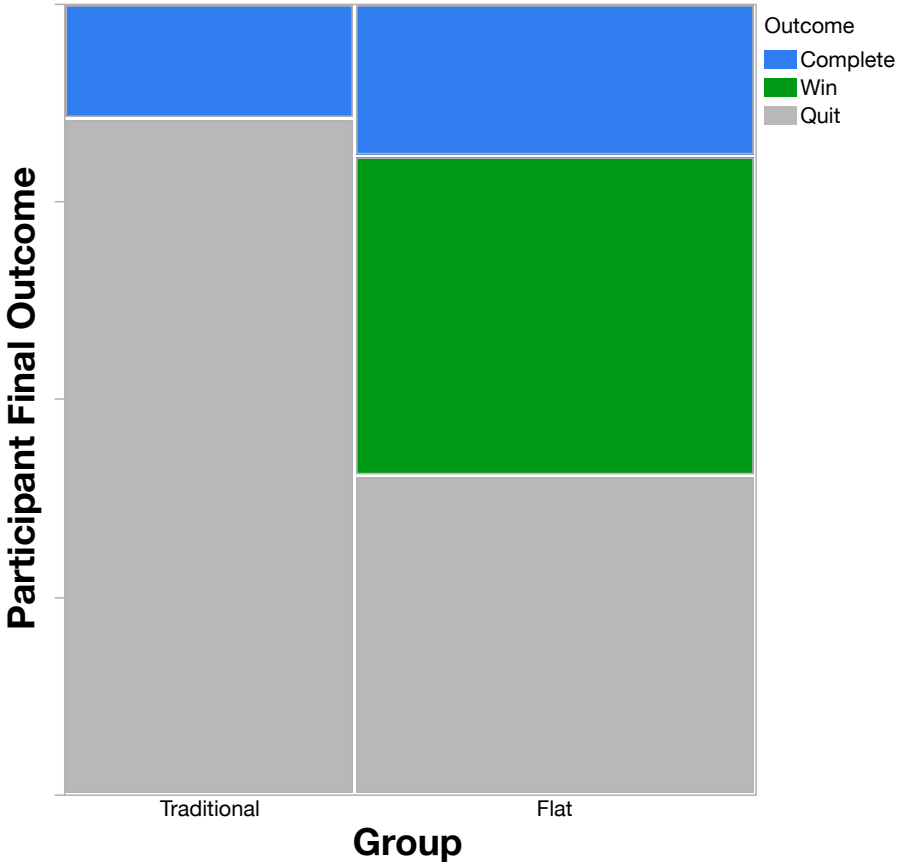
Study 2 - Methods

Study 2 - Results

All data (*n* = 400)



Only those who returned (*n* = 180)

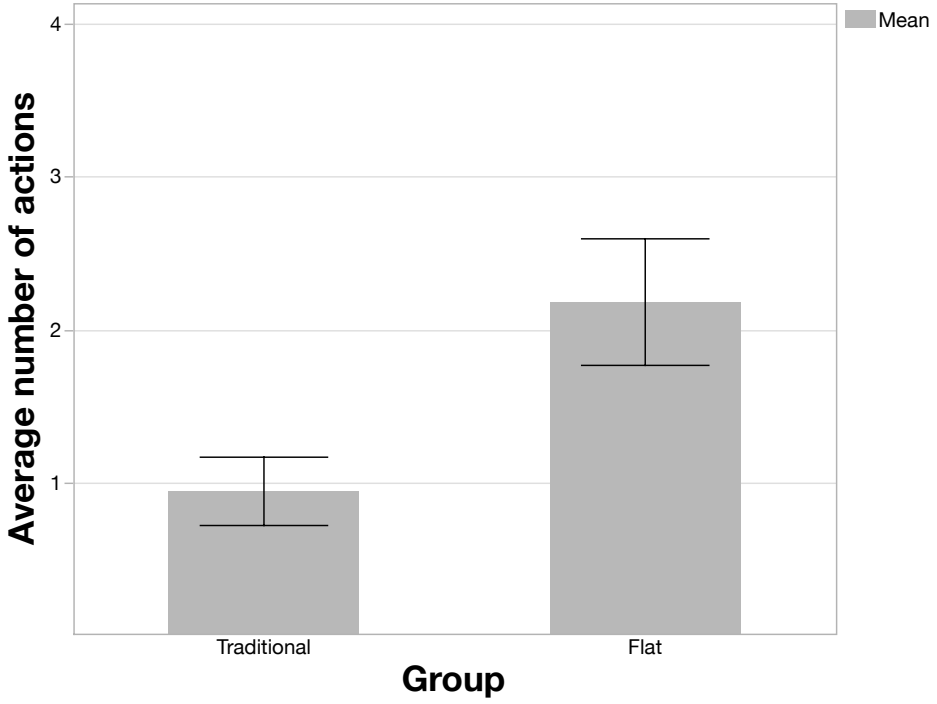


Study 2 - Results

	Traditional loyalty program (n = 200)		**Flat probability-based loyalty program (n = 200)**		
	# people who signed up = 179		# people who signed up = 183		
	# people who got this many stamps	# people who dropped out after this many stamps (%)	# people who got this many stamps	# people who won lottery (%)	# people who dropped out after this many stamps (%)
Stamp 1	80	28 (35.0%)	104	10 (9.6%)	12 (11.5%)
Stamp 2	52	20 (38.5%)	82	8 (9.8%)	10 (12.2%)
Stamp 3	32	14 (43.8%)	64	7 (10.9%)	7 (10.9%)
Stamp 4	18	2 (11.1%)	50	5 (10.0%)	6 (12.0%)
Stamp 5	16	1 (6.3%)	39	4 (10.3%)	5 (12.8%)
Stamp 6	15	0 (0.0%)	30	3 (10.0%)	2 (6.7%)
Stamp 7	-	-	25	3 (12.0%)	0 (0.0%)
Stamp 8	-	-	22	2 (9.1%)	0 (0.0%)
Stamp 9	-	-	20	-	0 (0.0%)
Completion	**15**		**20**		

Study 2 - Results

All data (*n* = 400)



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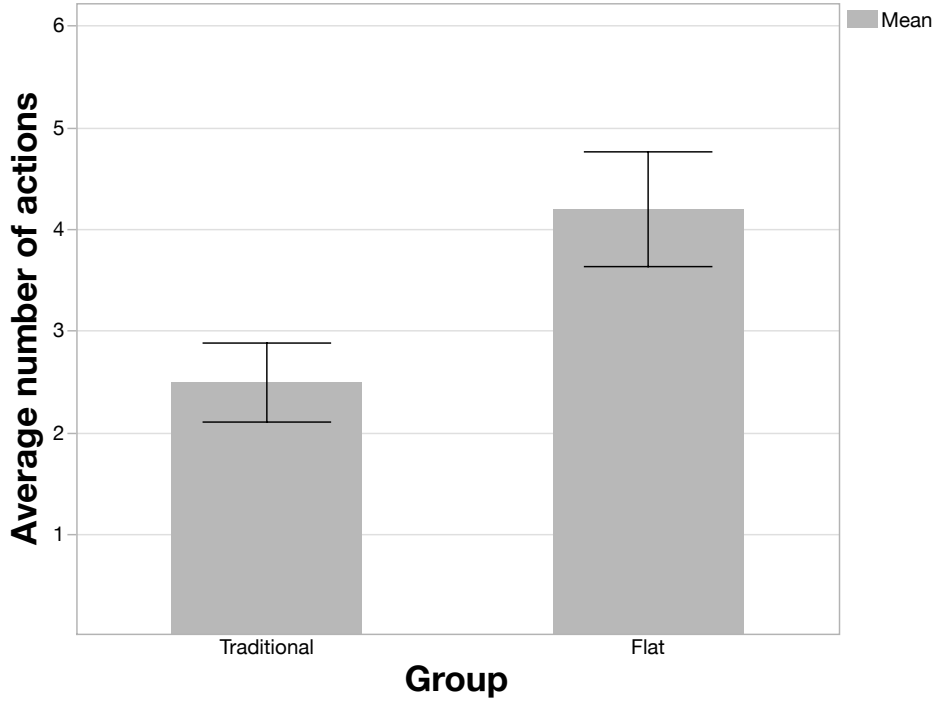

Study 2 - Discussion

- Once again, the probability-based programs produced greater overall engagement (i.e., higher return rate, lower drop-out rate; more overall actions taken).

General Discussion

- Why is a probability-based loyalty program more motivating than a traditional program?
  - Novelty.
  - Curiosity: Desire to find out the lottery outcome (i.e., lose or win).
  - Fun: People enjoy the combination of certainty ("I will get a reward") together with some uncertainty ("I do not know *when* I will get the reward").
  - Optimism: People overestimate the likelihood that they will win the lottery.
  - Impact: People perceive a stronger association between completing each action and obtaining the reward.
  - Mental accounting: There are two ways to get the reward.
  - Sunk cost induced-commitment.

General Discussion

- Why is an increasing probability-based program more motivating than a flat program?
  - There are *two* forms of progress after each action:
    - Closer to the reward.
    - Higher chance of winning the reward next time.

Future Directions

- Pin down the exact mechanism/s.
- Test other trajectories:
  - Decreasing? Random?
- Test type of rewards:
  - Affect-rich vs. affect poor rewards?
- Examine the long-term effectiveness of a rolling probability-based reward program.

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