

# Should points have a point?

## Two field experiments on a rewards program

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### Introduction

#### Why Points?

Rewards programs can be found that at grocery stores, department stores, gas stations or the local bakery. We know from prior research that material rewards can crowd out intrinsic motivation (Frey, 1994).

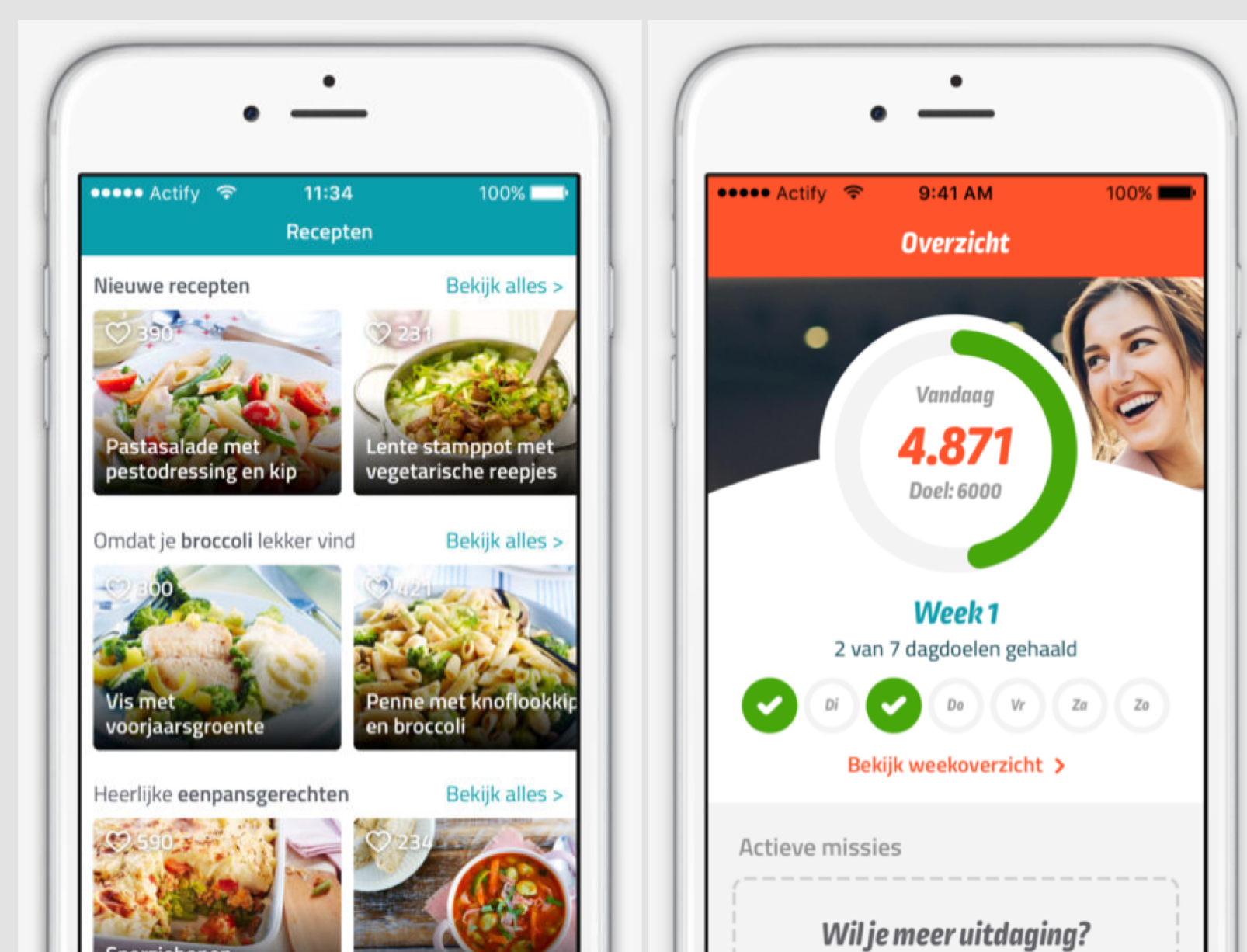
But what happens when you reward with points? They are not material in nature, but become material when exchanged for goods. We know that gamifying unpleasant activities, such as exercising or dieting, and giving points can motivate people to do more of such activities (Kumar et al., 2004; Patel et al., 2017). As such, we investigated the effects of a rewards program that combines gamification (points) and material rewards on motivation and exercise behavior.

#### Field Site

- Collaboration with a Dutch health start-up
- Recipe app & steps app
- Tested the framing of their rewards program.

#### Rewards Program

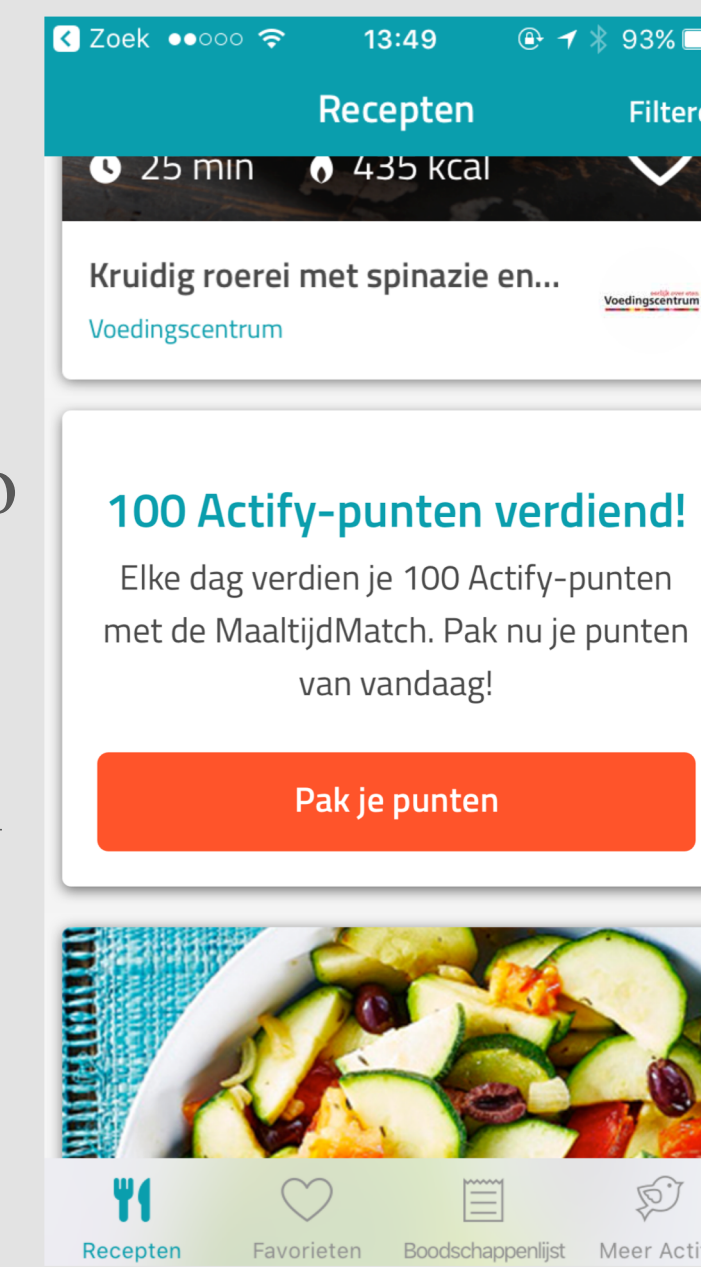
App users earn points for healthy behaviors, such as meeting their daily step target or cooking healthy meals. These points can be redeemed in the webshop for discounts on a variety of products, e.g. cooking equipment or wearables.



### Study 1 – Recipe App

#### Design:

- Info-block encourages people to open the app every day
- Randomly assigned all recipe-app users to one of 3 info-block conditions
- 3 week intervention
- Start: September 21, 2017
- > 39,000 users



	Control condition	Points condition	Discount condition
<b>Title</b>	Improve cooking habits	You earned 100 Actify points!	You earned webshop discounts!
<b>Content</b>	Every day you open the MealMatch you improve your cooking habits. Check out our blog for more tips on healthy eating.	Every day you open the MealMatch you earn 100 Actify points. Redeem today's voucher code now.	Every day you open the MealMatch you earn 100 points for discounts in the Actify shop. Redeem today's voucher code no.
<b>Button text</b>	View the blog	Redeem your points	Redeem your discount

#### Questions:

- Do points motivate people to use the app?
- Should users know that points give them discounts?
- Do users prefer points or discounts?

#### Outcome measures:

1. Clicking the button on the info-block
2. Opening the app in the intervention period + beyond

Counts:			
	Clicked	Not clicked	Sum
Points	287	12918	13205
Discounts	139	13021	13160
Habits	70	13231	13301
Sum	496	39170	39666

Proportions:				
	points	discounts	habits	average
	2.2%	1.1%	0.53%	1.3%

#### Results:

- Points vs. discount (chi-squared test,  $p < 0.001$ )
- Discounts vs. habits (chi-squared test,  $p < 0.001$ )
- No evidence that intervention increases retention (opening the app)

### Study 2 – Steps App

#### Design:

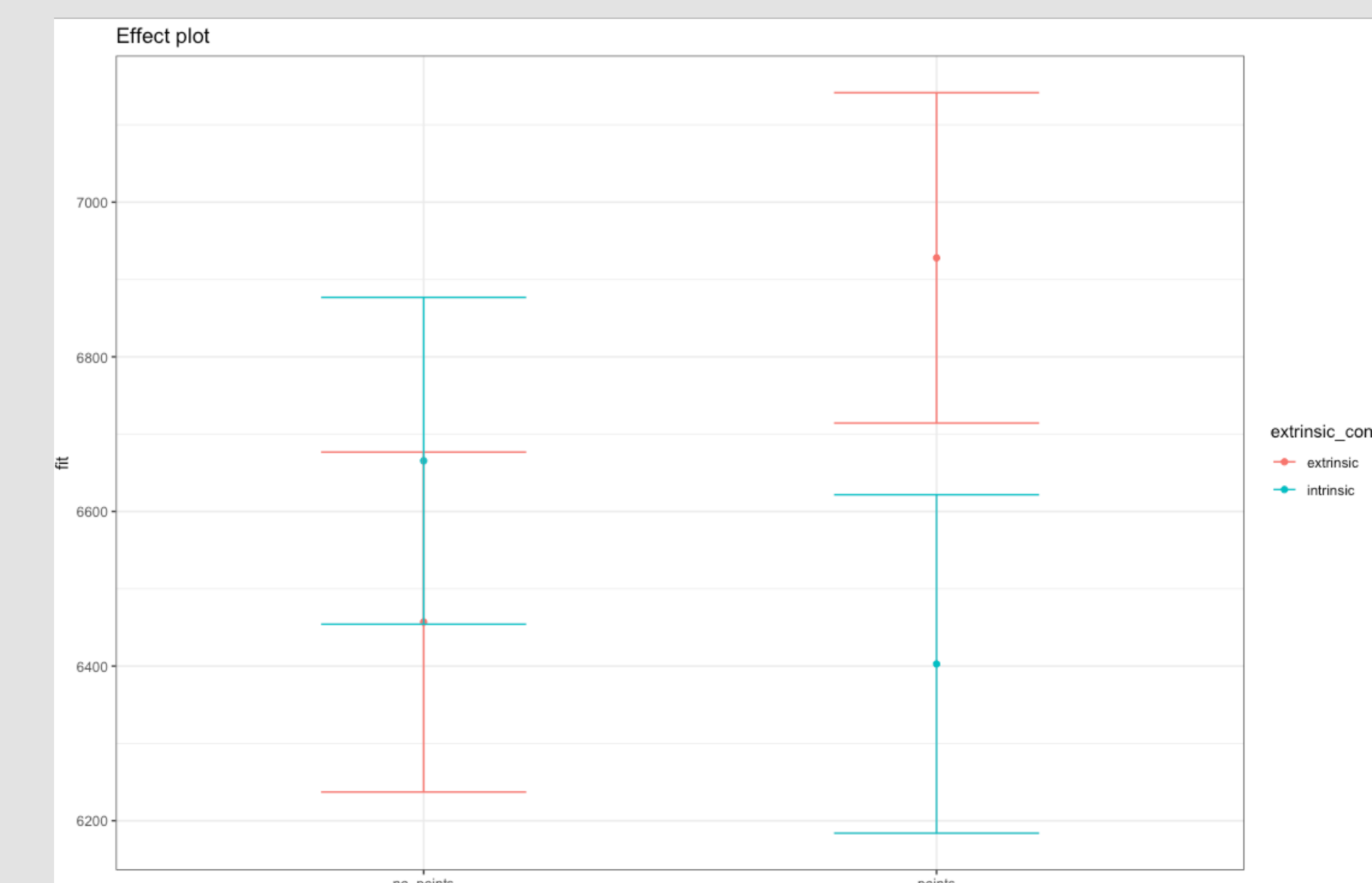
- Emails that encourage users to walk more steps
- Random assignment of new app users into 4 email conditions
- 3 cohorts of recipients: January/February 2018
- $N = 1108$  opened the email (out of 1809)

	Mention points	Don't mention points
<b>Extrinsic motivation (webshop)</b>	Points + Extrinsic (webshop) condition	Extrinsic (webshop) condition
<b>Intrinsic motivation (health benefits)</b>	Points + Intrinsic (health benefits) condition	Intrinsic (health benefits) condition



#### Model:

- Multilevel mixed-effect model of the relationship between steps and email condition.
- Fixed effects: condition by day interaction; cohort, weekend, holiday and weather controls
- Random effects: intercepts for subjects (ICC = 40.9%)



### Study 2 - Results

- Interaction effect between points conditions and webshop conditions ( $p < 0.1$ ): Points significantly increase steps in the extrinsic condition, but not in the intrinsic condition.
- This effect is independent of the number of days after the intervention.

#### Additional results:

- As time passes, people walk less per day ( $p < 0.001$ )
- People walk about 572 steps  $\pm$  37.2 (SE) less on weekends ( $p < 0.001$ )
- **Temperature (°C) and hours of sunshine** affect steps ( $p < 0.001$ ;  $p < 0.1$ ), increasing them by about 74 steps  $\pm$  4.7 (SE) and 10 steps  $\pm$  5.1 (SE) per degree/hour respectively.
- One hour increase in **precipitation** decreases steps ( $p < 0.001$ ) by about 112  $\pm$  8.3 per day.

### Conclusion

1. People like to collect points more if you don't mention the discounts they give.
2. When there is points, the webshop is a good thing to do, but while there is no points, no need to mention the webshop. The webshop doesn't add value.

#### Interpretation:

- Contradictory results
- Due do clicks vs. long-term outcome measure?

### References

- Frey, B.S. (1994). How intrinsic motivation is crowded out and in. *Rationality and Society*, 6(3), 334-352.
- Kumar, V. S., Wentzell, K. J., Mikkelsen, T., Pentland, A., Laffel, L. M. (2004). The DAILY (Daily Automated Intensive Log for Youth) trial: A wireless, portable system to improve adherence and glycemic control in youth with diabetes. *Diabetes Technology & Therapeutics*, 6(4), 445-453.
- Patel, M.S. et al (2017). Effect of a game-based intervention designed to enhance social incentives to increase physical activity among families. *JAMA Intern Med*, 177(11), 1586-1593.