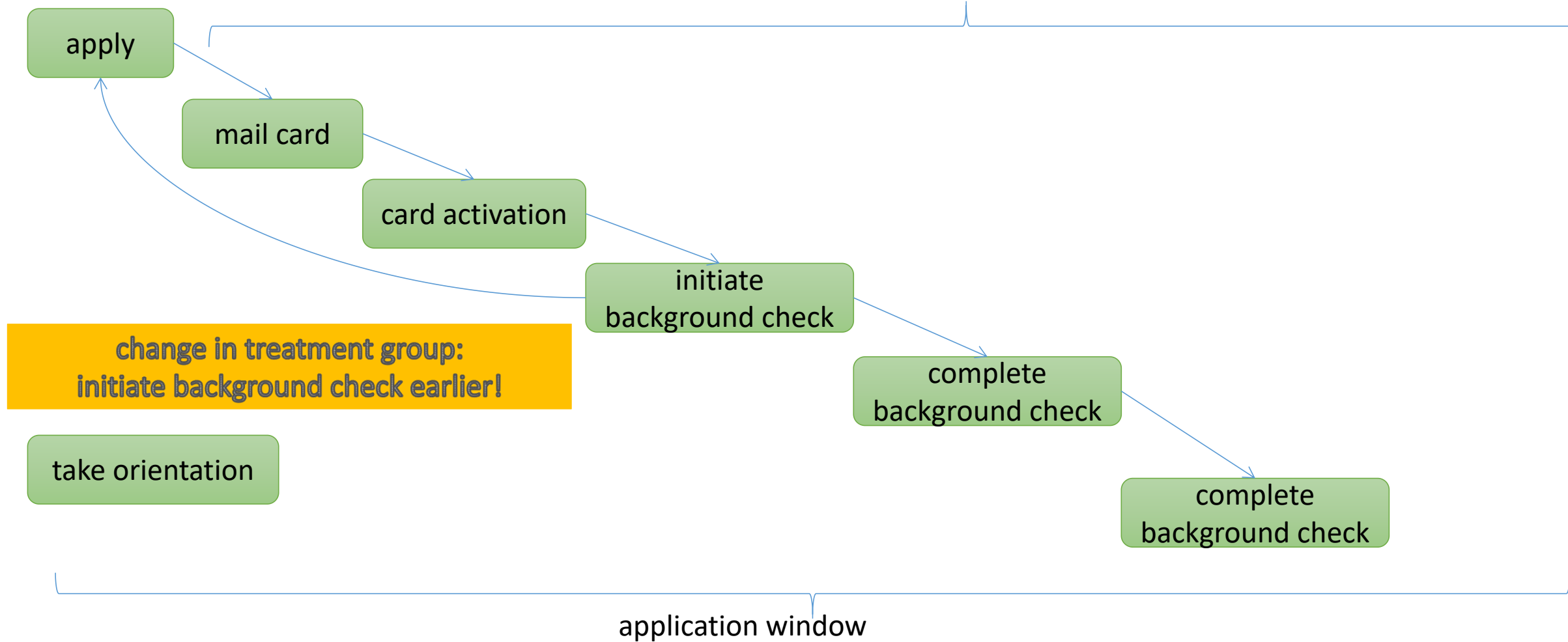




Data Science Project

Instacart shopper recruitment process

A/B Test window



Evaluate A/B Test Result

What happened if initiating background check earlier...

- ① Increases the conversion rate among applicants.
- ② Reduces the entire hiring process time , increase the efficiency of hiring process

group	total number of applicants	complete first batch	conversion rate	duration from application to first batch completion	days from both completion(card activation, background check) to first batch completion
control	10024	2678	26.6%	10.2 days	1.95days
treatment	4958	2115	42.7%	7.1 days	2.00days
conclusion			z-score 19.2 significant 90% conversion rate significant increase	accelerate the hiring process significantly	stimulate shopper to start more quick insignificantly

Whether the change is cost-effective?

The criteria we select is the cost of each applicants after they complete the first batch.

① We could like to check whether the activation funnel is expanding, if initiating background check earlier.

② We could like to check whether the activation funnel is expanding, if initiating background check earlier. Orientation event is one of factors might impact the conversion rate, so using bottom of funnel to evaluate is not an ideal metric .

③ A qualified potential shopper in hiring process must both activate card and pass background check, then enable them to become a “successful” shopper, so we would like to focus on card activation rate and dollar efficiency at the same time.

card activation rate						
group	overall	job site search	shop referral bonus	social media	web search engine	Dollar efficiency
control	86%	67%	96%	96%	83%	\$96
treatment	94%	87%	97%	98%	94%	\$70
z score at 90%	17.1 significant	12.35 significant	0.54 significant	3.4 significant	13.3 significant	



Any observation for Instacart?

We want to know whether the A/B Test will affect the conversion rate from each channel

① There are 4 channels overall: job site search; social media; shopper referral bonus; web search engine

control group	conversion rate	card activation rate	orientation rate	background check completed rate	day from application to first batch completion	days from both completion (card activation, background check)
job site search	16%	67%	69%	100%	9.5	2.1
shopper-referral-bonus	34%	96%	82%	99%	9.5	1.8
social-media	17%	96%	24%	98%	11.3	2.0
web-search-engine	25%	83%	65%	99%	9.6	1.9
overall	<u>27%</u>	<u>86%</u>	<u>47%</u>	<u>100%</u>	10.2	2.0

Any observation for Instacart?

We want to know whether the A/B Test will affect the conversion rate from each channel

① There are 4 channels overall: job site search; social media; shopper referral bonus; web search engine

treatment group	conversion rate	card activation rate	orientation rate	background check completed rate	day from application to first batch completion	days from both completion (card activation, background check)
job site search	38%	87%	58%	100%	6.3	1.9
shopper-referral-bonus	50%	97%	83%	100%	6.9	2.1
social-media	20%	98%	20%	100%	8.0	2.0
web-search-engine	45%	94%	54%	100%	6.8	2.0
overall	<u>43%</u>	<u>94%</u>	<u>58%</u>	<u>100%</u>	7.1	2.0



Any observation for Instacart?

- ❶ For job site search channel, it has lowest conversion rate in the control group, but the conversion rate significantly improved, if initiating background check.
- ❷ For social media channel, the conversion rate and the orientation rate is the lowest. and the conversion rate insignificantly improved, if initiating background check.
- ❸ For shopper referral bonus channel: it has the highest conversion rate in the control group, and it generate effective leads.
- ❹ For web search engine channel: it has the lowest conversion rate in the control group, and the conversion rate significantly improved, if initiating background check.

Conclusions: We found that the conversion rate in social media channel is much lower than average. If this channel is paid advertising, we should evaluate the ROI, which cost is channel acquisition cost + \$30 background fee, etc. to check if the social media channel is an effective way to attract potential shoppers.