SOCIAL LOGIN INFLUENCE ANALYTICS REPORT

-BACKGROUND

There is no doubt that social log-in has become increasingly common in the experience of website viewing. Understanding whether social platforms log-in have a positive effect on encouraging users to create account is essential for the company. For example, some users regarding social-login button is an easier way for creating an account, while others are reluctant to share social information with us.

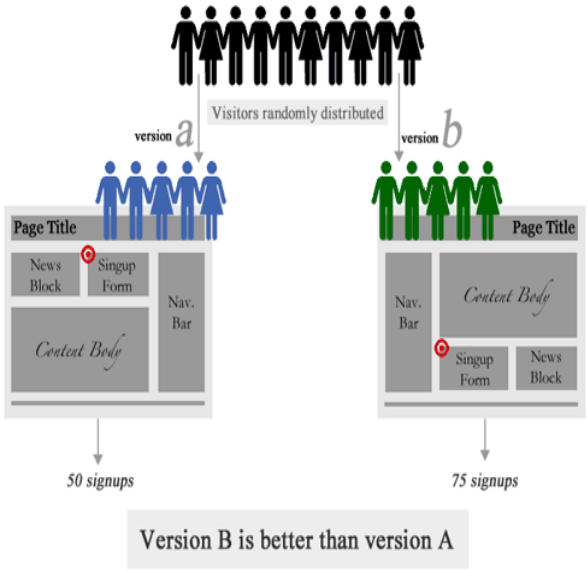
Therefore, in order to increase the number of users creating accounts, we would like to analyse the effect of introducing the social log-in button to Uncommongoods' website.

-DATA DESCRIPTION

The data from this report was taken from Uncommongoods website. We aimed at analysing the effect of introducing the social log-in button in Uncommongoods' website and the different influence of social link on wish list page and check out page. Therefore, the data was separated into 6 parts: before-test-wishlist, test-wishlist, after-test-wishlist, before-test-checkout, test-checkout, and after-test-checkout. In the none-test section, the data includes user's behaviour information such as whether they create an account and log in, which device the user uses. In the test section, an additional social login button was introduced in the test website, therefore the data includes whether the user intends to use social login-in (Facebook or Google) to create an account.

-METHDOLOGY -A/B TESTING

A/B testing is a way to compare two versions of a single variable typically by testing a subject's response to variable A against variable B, and determining which of the two variables is more effective. In marketing and business intelligence, A/B testing is a term for a randomized experiment with two variants, A and B, which are the control and variation in the controlled experiment [1]. A/B testing is exactly what it sounds like: you have two versions of an element (A and B) and a metric that defines success. In this report, we use A/B test for analyzing whether introducing social link to our checkout and wish-list page would increase the number of users who registering an account.



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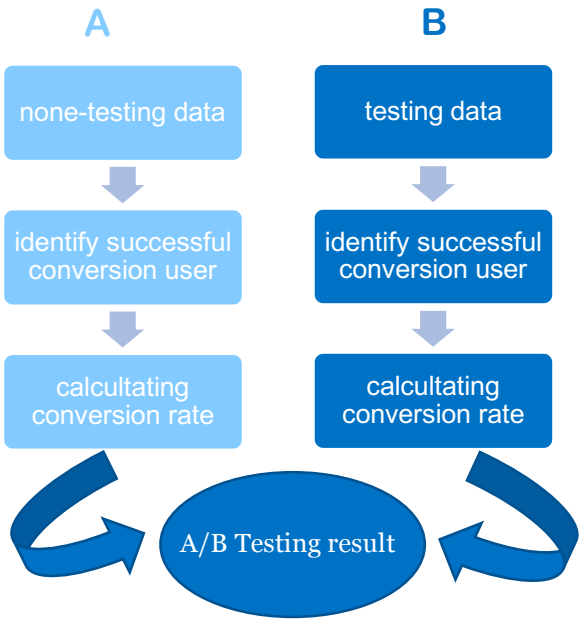
-SYSTEM OVERVIEW

Firstly, I loaded the 'wishlist before test' and 'wishlist after test' data into R. Then I identify the user who successfully created an account and logged in as a successful conversion user. Then I calculated the conversion rate. Thirdly, I loaded the 'wishlist during test' data into R and identify the user who successfully created an account and logged in or intended using social link (Facebook or Google) to create account as successful conversion user. Finally, I used statistical knowledge to compare the conversion rate within test website and none-test website. Also the effect of different device using and the impact of Facebook and Google is analysed in this research.



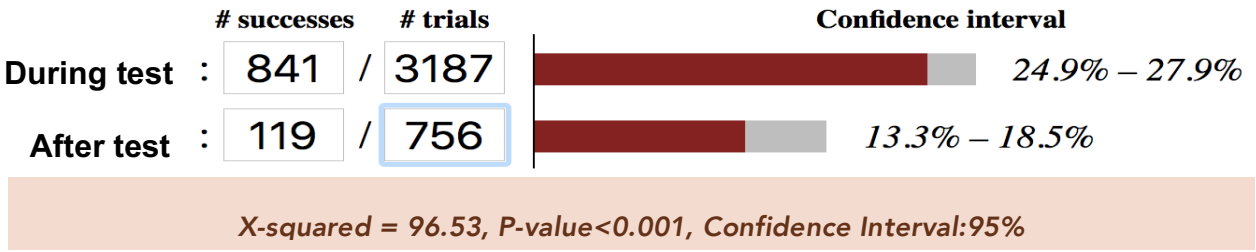
-ANALYTICS RESULT

A. I. social link effect on wishlist

After doing the data preparation work, I use R to summary the number of users that successfully creating an account, and performing the A/B testing based on the data. The following figures shows the result of A/B testing.

	Before test	During test	After test
trail	3322	3187	756
successes	529	841	119
Conversion rate	0.159	0.261	0.157

X-squared = 106.5523, P-value<0.001, Confidence Interval:95%



From the above statistics it can be seen that the p-value is even less than 0.001, which suggests that we should reject the hypothesis that the conversion rate of test and non-test website is same. Apparently, conversion rate with social link is significantly higher than the one without social link by 10%. Therefore, the introduction of social link is a good way for increasing potential user.

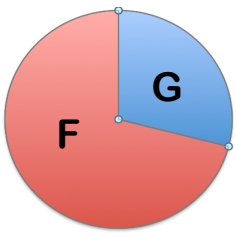
A. II. DEVICE EFFECT ON CONVERSION RATE

	Before test	conversion rate	During test	conversion rate	After test	conversion rate
Desktop	**1825**	**17.7%**	**1686**	**27.1%**	**429**	**16.3%**
Mobile	**1120**	**14.2%**	**1073**	**26.5%**	**233**	**14.6%**
tablet	**377**	**11.9%**	**424**	**23.3%**	**92**	**16.3%**
a/b testing p-value		**0.003544**		**0.29**		**0.8355**

From the table above we can see that more than half of the user using Desktop to view our website and it enjoys the highest conversion rate. While performing a conversion rate statistic analysis of whether there is a significant difference in conversion rate using three kinds of different devices, we get a p-value of 0.00354, 0.29,0.8355 corresponding to the three period separately. It can be seen that before the test the conversion rate of Desktop is significantly higher than the other two devices, however in the other two period the advantage of Desktop is not that apparent.

A.III. GOOGLE V.S. FACEBOOK

In our test session 329 users tried to use Facebook account to log in while 134 users tried to use Google Account to log in. It can be seen that Facebook account is more popular within users.



B. I. social link effect on checkout page

The data analysis work is quite similar with what have done in the wishlist part, so the result of analysis is shown below:

	Before test	During test	After test
trail	13491	14427	3345
successes	1921	1091	446
Conversion rate	14.24%	7.56%	13.3%

X-squared = 322.22, P-value<0.001, Confidence Interval:95%

X-squared = 145.34, P-value<0.001, Confidence Interval:95%

From the above statistics it can be seen that both of the p-value is even less than 0.001, which suggests that we should reject the hypothesis that the conversion rate of test and non-test website is same. Apparently, conversion rate with social link is significantly lower than the one without social link by 7%. Therefore, the introduction of social link is not a good way for increasing potential user. We should not add social link button on the checkout page.

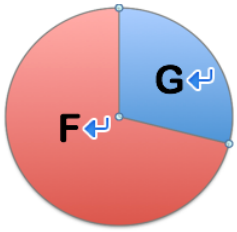
B. II. DEVICE EFFECT ON CONVERSION RATE

	Before test	conversion rate	During test	conversion rate	After test	conversion rate
Desktop	**8978**	**16.9%**	**9875**	**8.3%**	**2296**	**15.7%**
Mobile	**2897**	**6.9%**	**2765**	**5.3%**	**685**	**6.47%**
tablet	**1613**	**12.46%**	**1775**	**6.5%**	**352**	**11.36%**
a/b testing p-value		**<0.00001**		**<0.0001**		**<0.00001**

From the statistic about we can see that all of the p-value are smaller than 0.00001 which indicates that different device has different effects on people creating an account. While users using desktop have a highest conversion rate, people who use mobile device has the lowest one.

B.III. GOOGLE V.S. FACEBOOK

In our test session 124 users tried to use Facebook account to log in while 67 users tried to use Google Account to log in. It can be seen that Facebook account is more popular within users in checkout page.



-CONCLUSION

From the above analysis we can conclude that: 1. Adding a social link on the wishlist page can increase the number of users registering our account. 2. Adding a social link on the checkout page would make users bounce. A good way to increase profit is to add the social link on the wishlist page but not on the checkout page. 3. More than half of the users prefer using desktop and Desktop has a comprehensively higher conversion rate. We can try to improve the design of tablet and mobile website page in order to encourage more users to register in our website. 4. The number of user using Facebook is twice as much as the number of Google account users who intent to register in.