A/B testing results

I. Campaigns conversion rate statistical significance

The following one-sided A/B tests were conducted to test statistical significance of observed improvement in conversion rates of specific campaigns' sessions to non-campaign related sessions.

Variant: campaign
Control: non-campaign

Null hypothesis: campaign (variant) is not an improvement comparing to non-campaign related sessions and has no impact on higher conversion.
Alternative hypothesis: campaign (variant) is an improvement leading to higher conversion than non-campaign related sessions.

Alpha: p-value level for statistical significance 0,05
Confidence level: 95%

Metric used: conversion rate, estimated as: number of conversions/number of sessions.
Number of conversions = number of sessions that converted to purchase*
Number of sessions = number of sessions that had opportunity to convert
* *The user can have multiple sessions, hence multiple conversions (max number of conversion per distinct user in the data set is 6)*

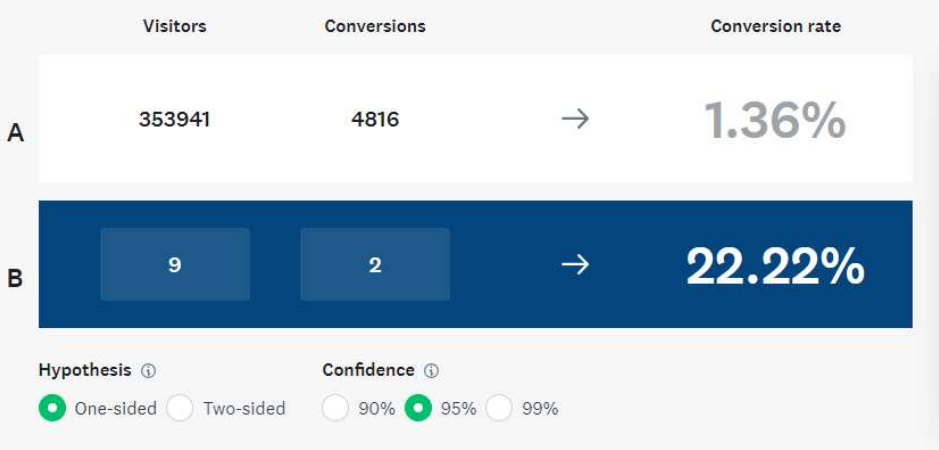
Conversion rates by Campaign

campaign	Number of sessions	Number of purchases	Conversion rate
BlackFriday_V1	9	2	22,22%
BlackFriday_V2	25	10	40,00%
Holiday_V1	19	2	10,53%
Holiday_V2	37	6	16,22%
NewYear_V1	67	2	2,99%
NewYear_V2	39	2	5,13%
Data Share Promo	1 460	3	0,21%
no_campaign	353 941	4 816	1,36%

1. **Black_Friday_V1**

   A (Control): no campaign

   B (Variant): Black_Friday_V1



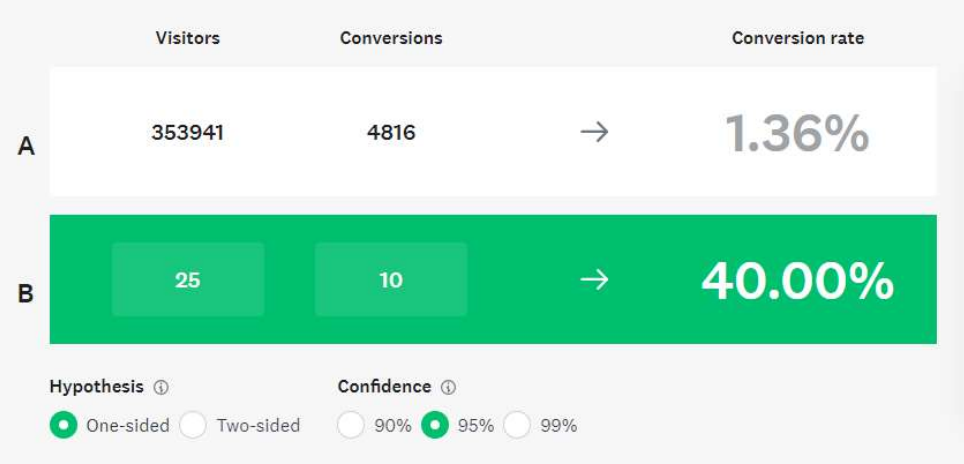
Conclusions:

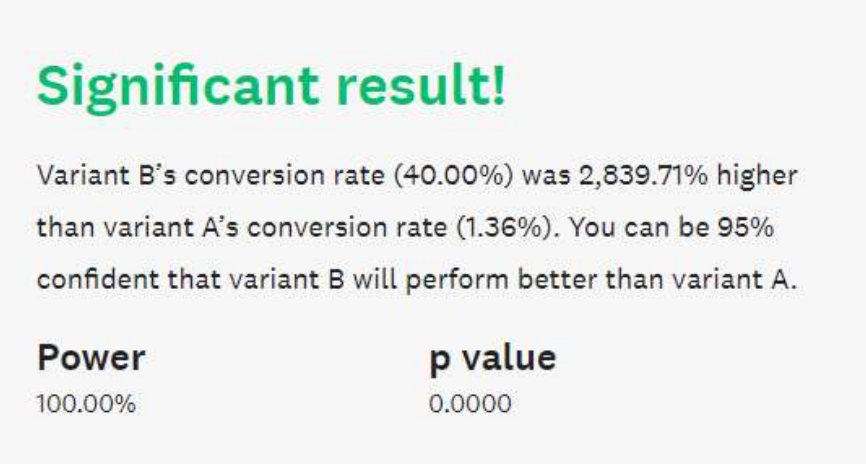
BlackFriday_V1 sessions' conversion rate (22.22%) was 1,533.17% higher than non-campaign sessions' conversion rate (1.36%), but results of AB test indicate that there is no statistically significant difference between the campaign and no campaign. The observed results are very likely to occur by random chance alone. Therefore, there is insufficient evidence to conclude, that the campaign will lead to higher conversions.

2. **Black_Friday_V2**

   A (Control): no campaign

   B (Variant): Black_Friday_V2





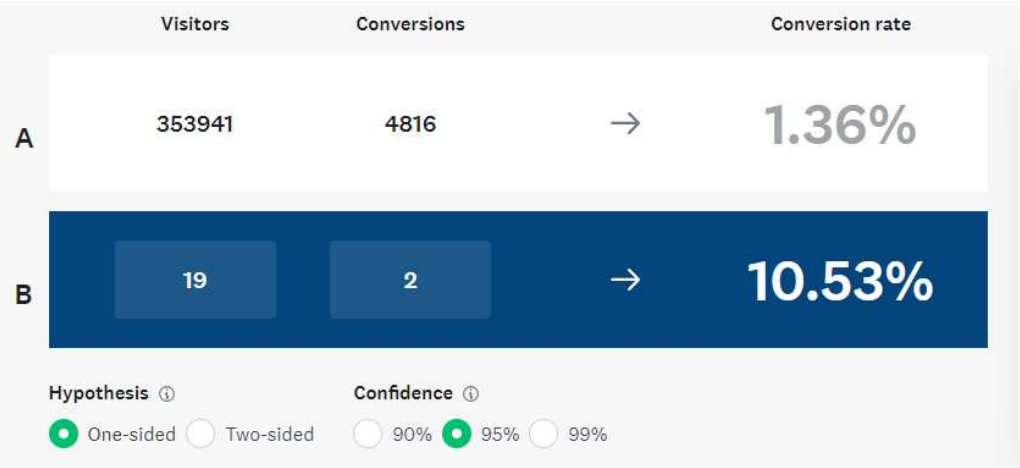
Conclusions:

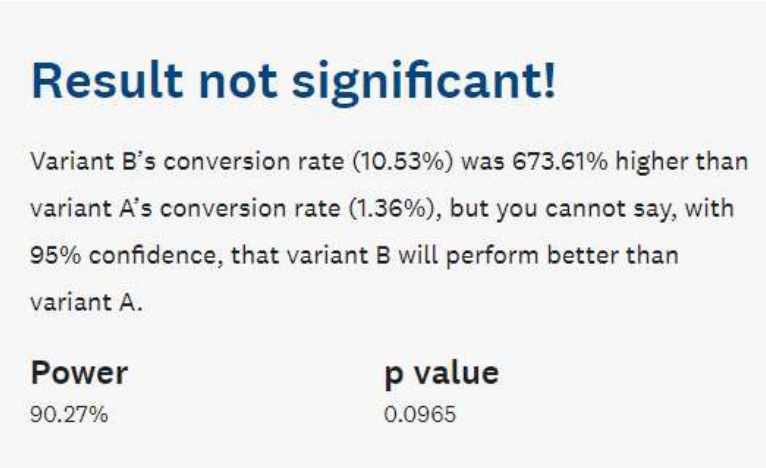
BlackFriday_V2 sessions' conversion rate (40.00%) was 2,839.71% higher than non-campaign sessions' conversion rate (1.36%). The AB test result indicates with 95% confidence, that the campaign is an improvement leading to higher conversions, than non-campaign sessions.

3. **Holiday_V1**

   A (Control): no campaign

   B (Variant): Holiday_V1





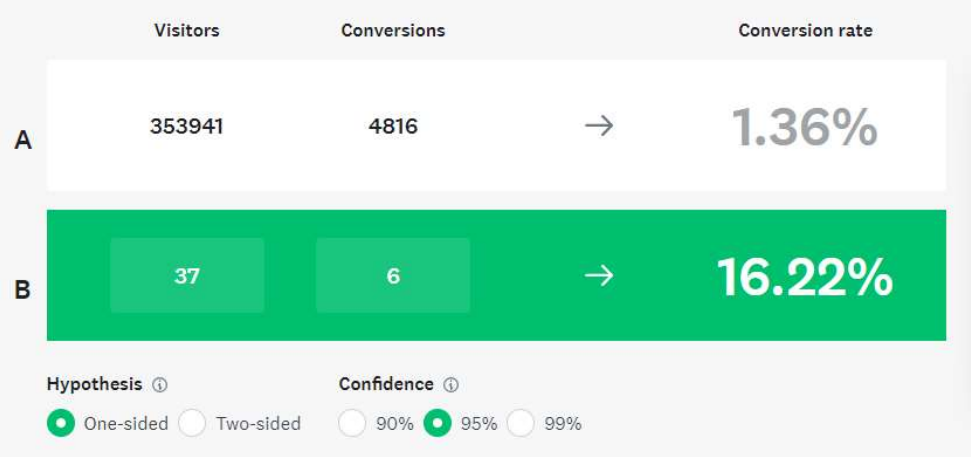
Conclusions:

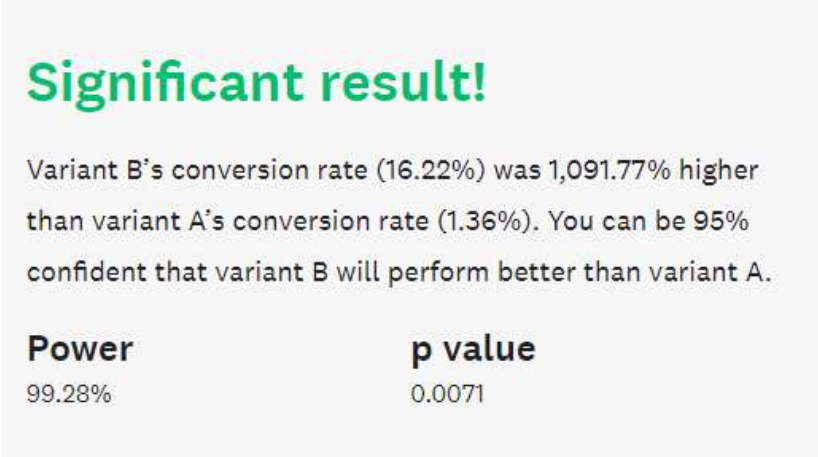
Holiday__V1 sessions' conversion rate (10.53%) was 673.61% higher than non-campaign sessions' conversion rate (1.36%), but results of AB test indicate that there is no statistically significant difference between the campaign and no campaign. The observed results are very likely to occur by random chance alone. Therefore, there is insufficient evidence to conclude, that the campaign will lead to higher conversions.

4. **Holiday_V2**

   A (Control): no campaign

   B (Variant): Holiday_V2





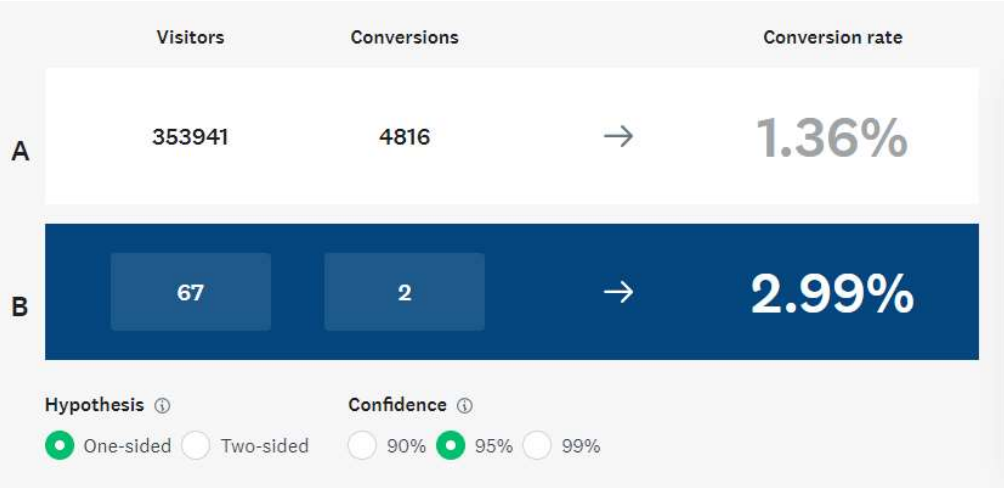
Conclusions:

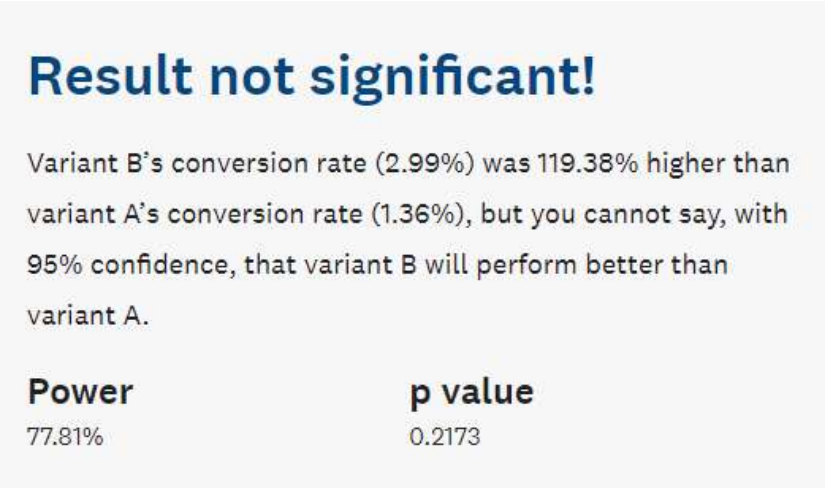
Holiday_V2 sessions' conversion rate (16.22%) was 1,091.77% higher than non-campaign related sessions' conversion rate (1.36%).The AB test result indicates with 95% confidence, that the campaign is an improvement leading to higher conversions, than non-campaign sessions.

5. **NewYear_V1**

   A (Control): no campaign

   B (Variant): NewYear_V1





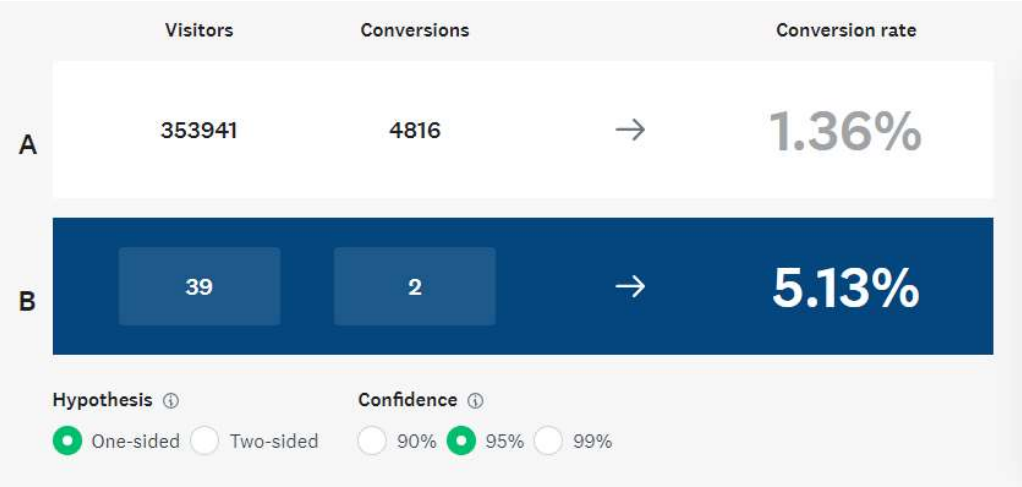
Conclusions:

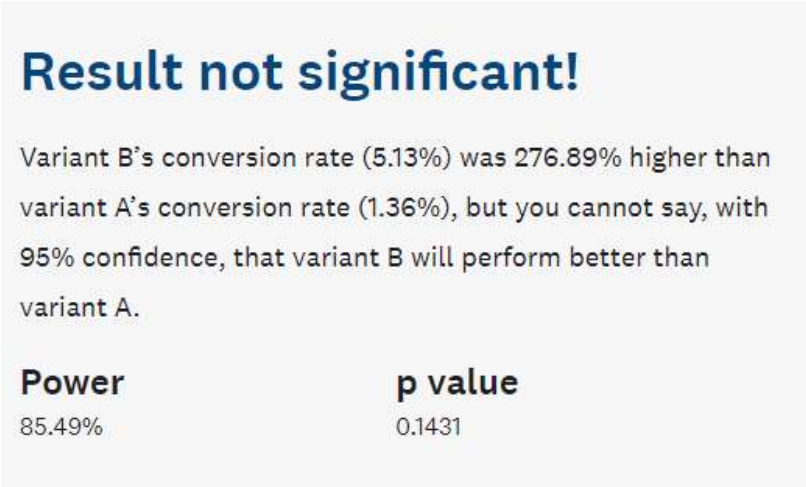
NewYear__V1 sessions' conversion rate (2.99%) was 119.38% higher than non-campaign related sessions' conversion rate (1.36%), but results of AB test indicate that there is no statistically significant difference between the campaign and no campaign. The observed results are very likely to occur by random chance alone. Therefore, there is insufficient evidence to conclude, that the campaign will lead to higher conversions.

6. **NewYear_V2**

   A (Control): no campaign

   B (Variant): NewYear_V2





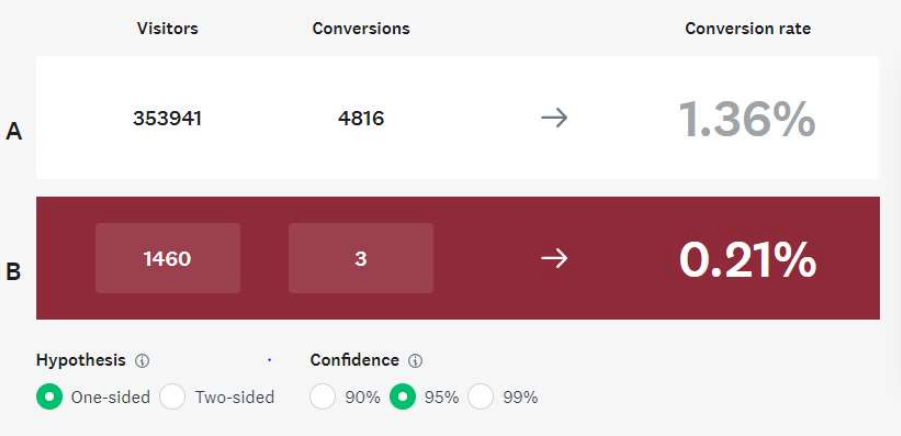
Conclusions:

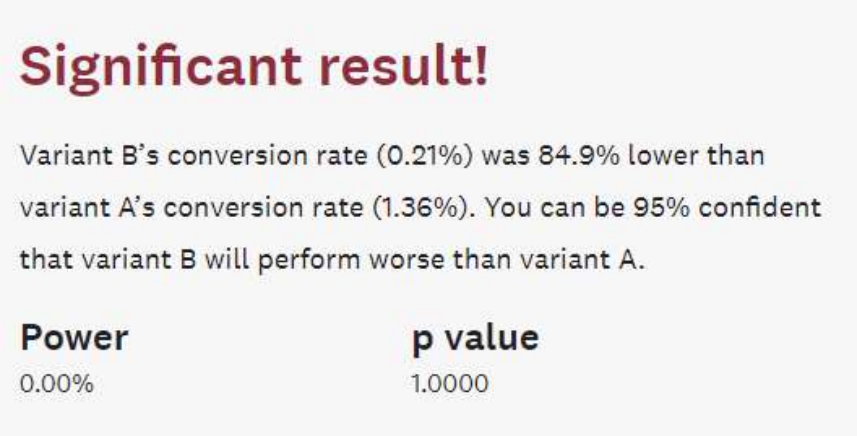
NewYear__V2 sessions' conversion rate (5.13%) was 276.89% higher than non-campaign related sessions' conversion rate (1.36%), but results of AB test indicate that there is no statistically significant difference between the campaign and no campaign. The observed results are very likely to occur by random chance alone. Therefore, there is insufficient evidence to conclude, that the campaign will lead to higher conversions.

7. **Data Share Promo**

   A (Control): no campaign

   B (Variant): Data Share Promo





Conclusions:

Data Share Promo sessions conversion rate (0.21%) was 84.9% lower than non-campaign related sessions' conversion rate (1.36%). The AB test result indicates with 95% confidence, that this campaign will perform worse than no campaign.

Summary:

Control	Variant	Number of purchases	Numbers of sessions	Conversion rate	AB testing result	p-value
no-capaign	BlackFriday_V1	2	9	22,22%	Result not significant	0,0661
no-capaign	BlackFriday_V2	10	25	40,00%	Significant result	0,0000
no-capaign	Holiday_V1	2	19	10,53%	Result not significant	0,0965
no-capaign	Holiday_V2	6	37	16,22%	Significant result	0,0071
no-capaign	NewYear_V1	2	67	2,99%	Result not significant	0,2173
no-capaign	NewYear_V2	2	39	5,13%	Result not significant	0,1431
no-capaign	Data Share Promo	3	1 460	0,21%	Significant result	1,0000
Control	no_campaign	4 816	353 941	1,36%		

II. Day of week conversion rate statistical significance

The following one-sided A/B tests were conducted to test statistical significance of observed improvement in conversion rate on Fridays comparing to other days of week.

Variant: Friday
Control: separate other days of week

Null hypothesis: Friday (variant) conversion rate is not better than conversion rate on other days of week.
Alternative hypothesis: Friday (variant) conversion rate is better that conversion rate on other days of week.

Alpha: p-value level for statistical significance 0,05
Confidence level: 95%

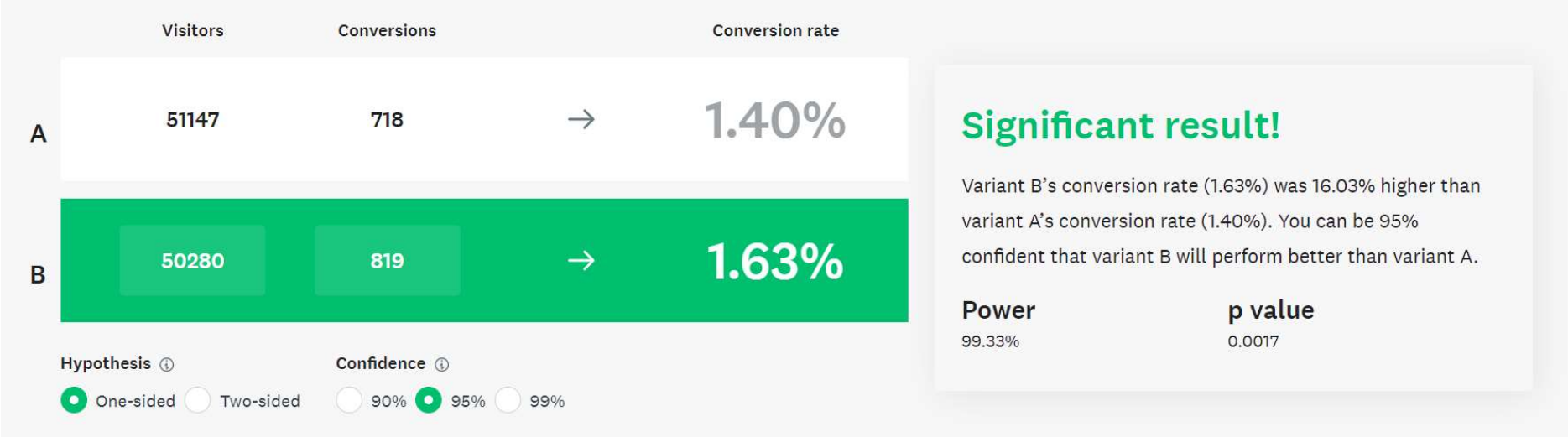
Metric used: conversion rate, estimated as: number of conversions/number of sessions.
Number of conversions = number of sessions that converted to purchase*
Number of sessions = number of sessions that had opportunity to convert
* The user can have multiple sessions, hence multiple conversions (max number of conversion per distinct user in the data set is 6)

weekday	# of purchases	# of sessions	Conversion rate	Median
Monday	718	51 174	1,40%	00:00:15
Tuesday	860	59 862	1,44%	00:00:15
Wednesday	832	59 246	1,40%	00:00:15
Thursday	711	55 043	1,29%	00:00:15
Friday	819	50 280	1,63%	00:00:14
Saturday	518	39 881	1,30%	00:00:12
Sunday	385	40 111	0,96%	00:00:12

1. **Monday**

   A (Control): Monday

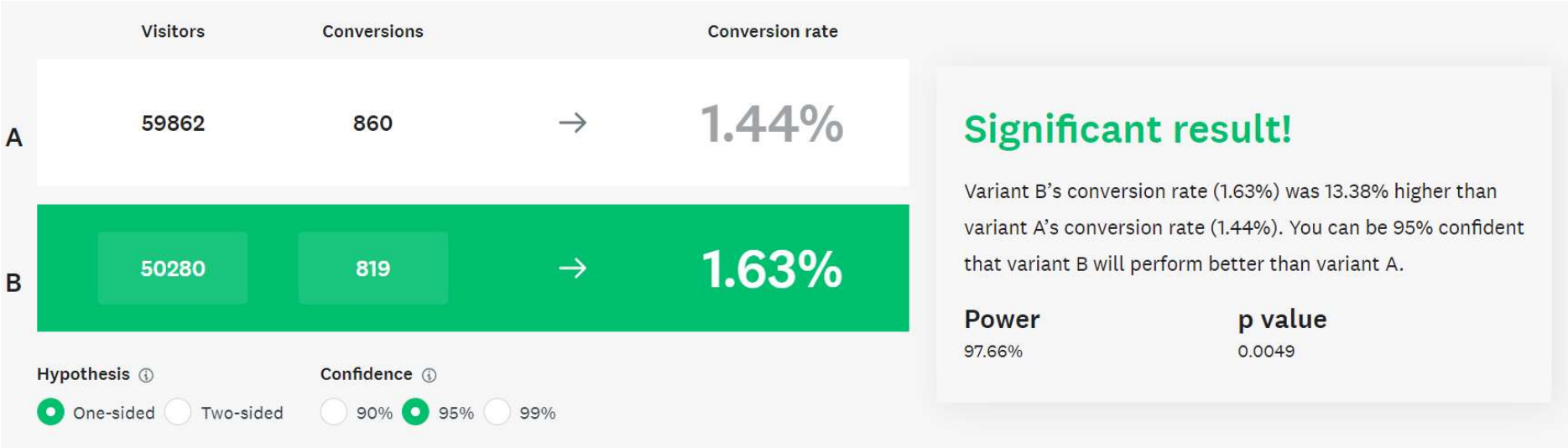
   B (Variant): Friday



2. **Tuesday**

   A (Control): Tuesday

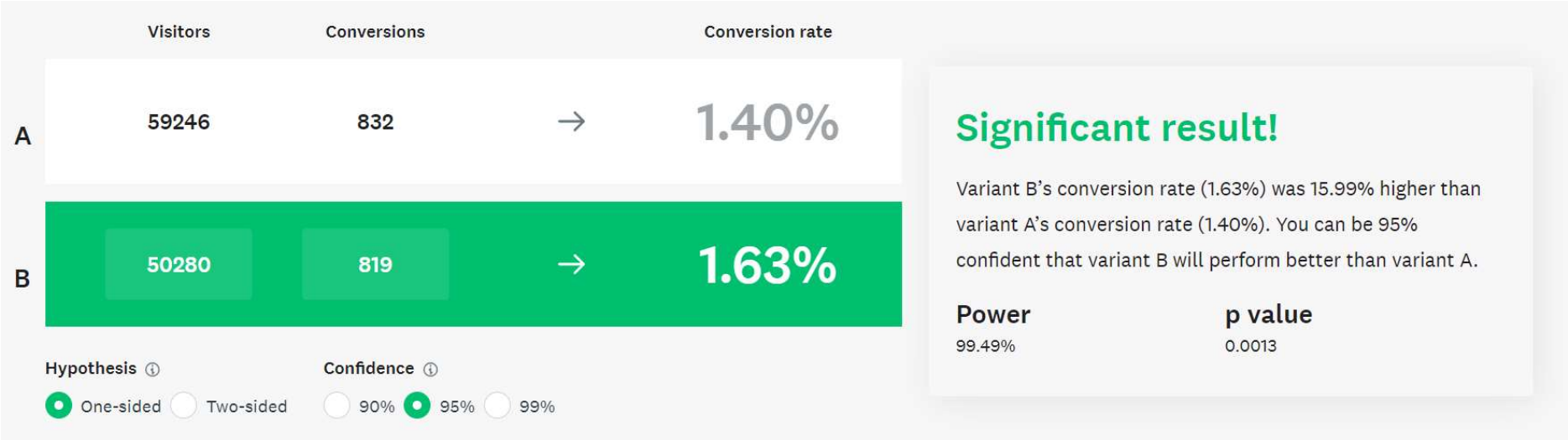
   B (Variant): Friday



3. **Wednesday**

   A (Control): Wednesday

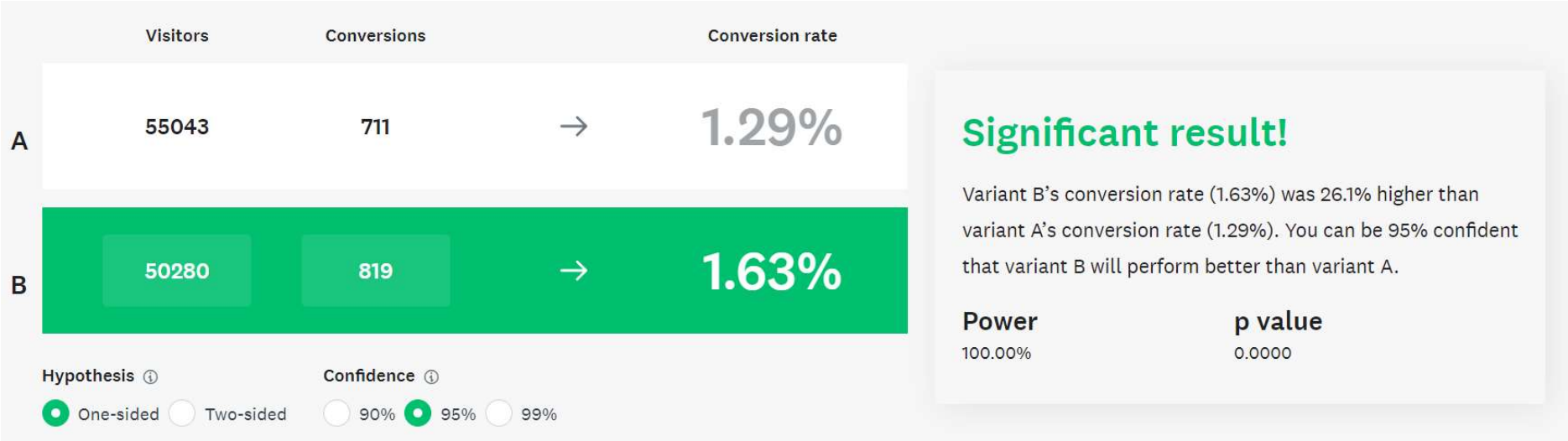
   B (Variant): Friday



4. **Thursday:**

   A (Control): Thursday

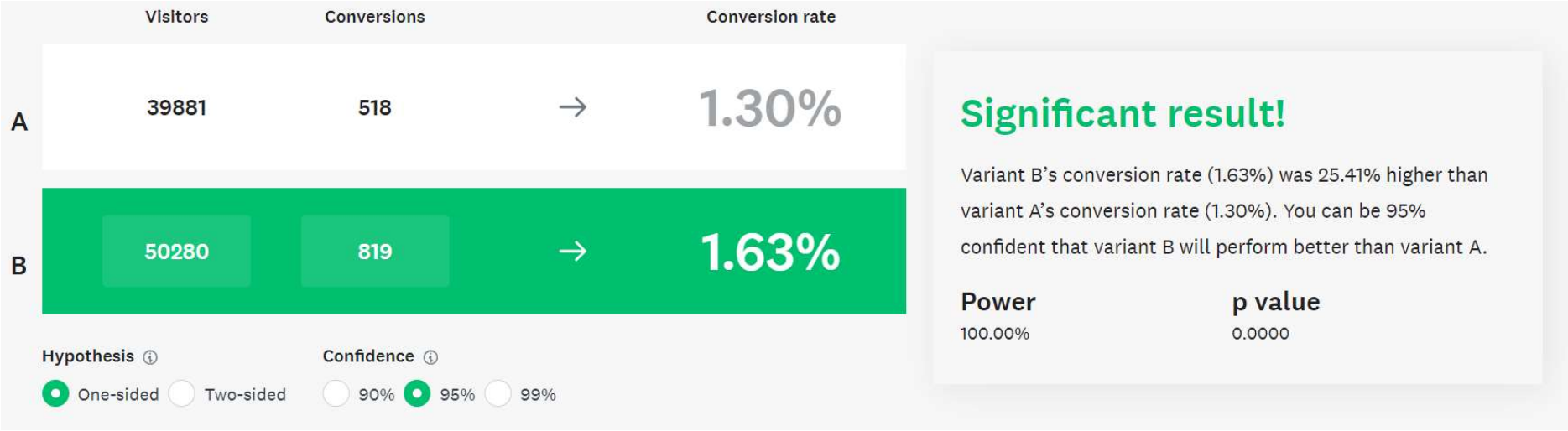
   B (Variant): Friday



5. **Saturday:**

   A (Control): Saturday

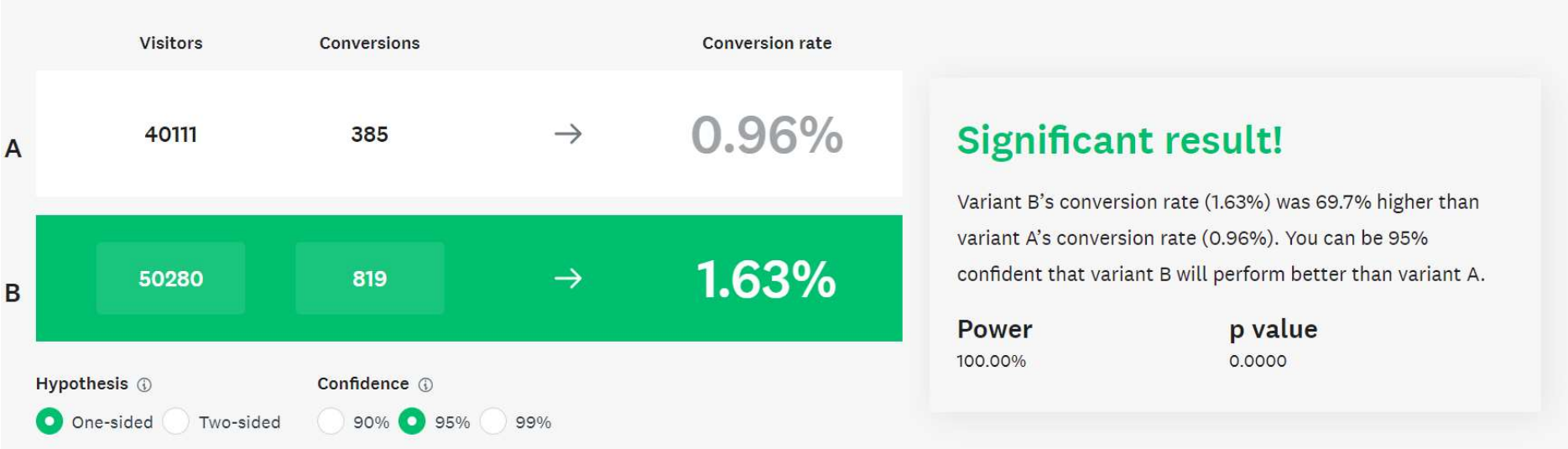
   B (Variant): Friday



6. **Sunday:**

   A (Control): Monday

   B (Variant): Friday



Conclusions:

Each test showed a statistically significant difference in conversion rate on Friday compared to other days of week. This indicates a conclusion, that the conversion rate on Friday will be with 95% confidence better than on other days of week.

Summary:

Control	Variant	Session duration	Number of purchases	Numbers of sessions	Conversion rate	AB testing result	p-value
Monday	Friday	00:00:15	718	51 174	1,40%	Significant result	0,0017
Tuesday	Friday	00:00:15	860	59 862	1,44%	Significant result	0,0049
Wednesday	Friday	00:00:15	832	59 246	1,40%	Significant result	0,0013
Thursday	Friday	00:00:15	711	55 043	1,29%	Significant result	0,0000
Saturday	Friday	00:00:12	518	39 881	1,30%	Significant result	0,0000
Sunday	Friday	00:00:12	385	40 111	0,96%	Significant result	0,0000
Variant	Friday	00:00:14	819	50 280	1,63%		