

An A/B Testing project for our E-commerce business

-- Should we add a
“Free Shipping Bar” ?

Shop now!



Test Background

Here's why we decide to run this test:

- Industry Research:

Research from Comscore found that the vast majority of desktop ecommerce transactions over the past four holiday seasons (November-December) have included free shipping. This illustrates that shoppers are more likely to transact when incentivized with free shipping.

- Competitors:

H&M, Zara & Other Stories are also using similar free shipping strategies to help customers convert and increase the revenue.

- Ad hoc data analysis :

Free Shipping Threshold Test

Test Background

Control


Item Subtotal:	\$21.99
Ship To: 02116 - Boston ▼	\$4.99
Tax:	\$1.37
<hr/>	
Total:	\$28.35
You Save:	\$7.00

 [Proceed to Checkout](#)



Variation

Item Subtotal:	\$21.99
Ship To: 02116 - Boston ▼	\$4.99
Tax:	\$1.37
<hr/>	
Total:	\$28.35
You Save:	\$7.00

 [Proceed to Checkout](#)



You're \$27.01 from FREE Shipping



Brief Summary

"I suggest not to roll out the variation with free shipping bar"
&
"We need to accept the null hypothesis."

Because:

1. We **don't have evidence** to say that it can increase our revenue.
2. We **don't have enough evidence** to say that it can help our customers to convert.







01

Primary Metric: Average revenue

What is the lift of average revenue per session/customer?



What is the lift of average revenue per session/customer?

	P_value	Percent lift	Absolute lift
 Session Level 	Not significant	- 0.01%	- \$0.02
 Customer Level 	Not significant	+ 0.11%	+ \$0.27

We saw a average revenue lift on customer level but a drop on session level, however, none of the result is statistically significant. Therefore, we cannot make any statement and have to accept the null hypothesis: **Adding this free shipping bar will not increase our revenue.**

02

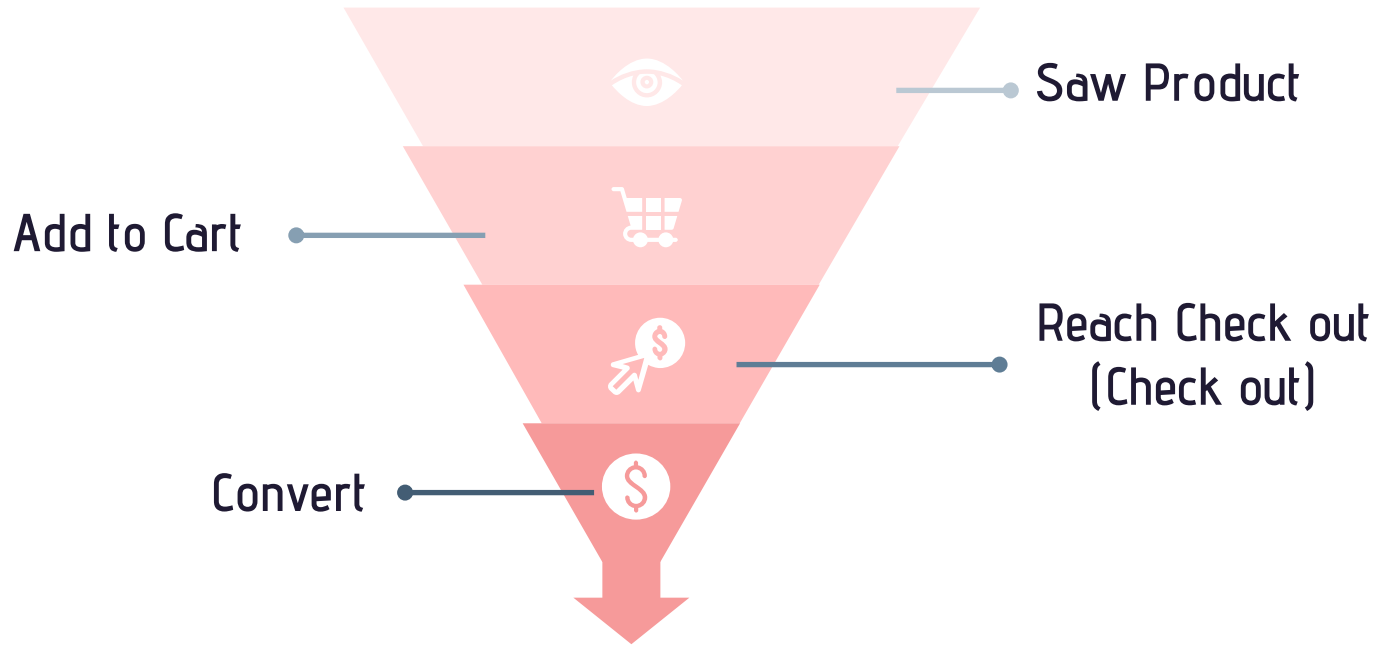



Second metrics: Check out / Add to cart rate, Conversion / Add to cart rate, Conversion / Check out rate

What is the lift of Check out / Add to cart rate per session / customer?

What is the lift of Conversion / Add to cart rate per session / customer?



What is the lift of Conversion / Check out rate per session / customer?

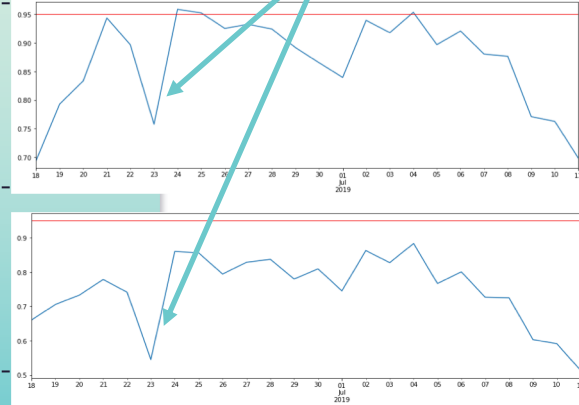


This process is happening on both Session level  and Customer  level

What is the lift of Conversion / Add to cart rate on the session / customer level ?





There's a obvious drop of sig level on 23rd July. What happened? Did we have a technical issue? Other campaign running or Sales season coming up?

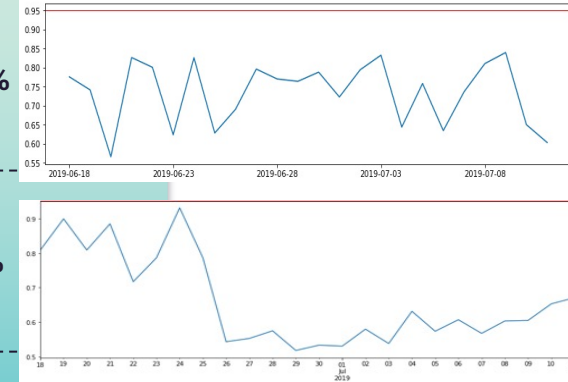
	P_value	Percent lift	Absolute lift
 Session Level ↑	Not significant	0.21%	0.08%
 Customer Level ↑	Not significant	0.22%	0.10%



We saw a Conversion / Add to cart rate lift on both session level and customer level, however, none of the result is statistically significant. Therefore, we cannot make any statement and have to accept the null hypothesis: **Adding this free shipping bar will not increase Conversion / Add to cart rate .**



What is the lift of Check out / Add to cart rate on the session / customer level ?

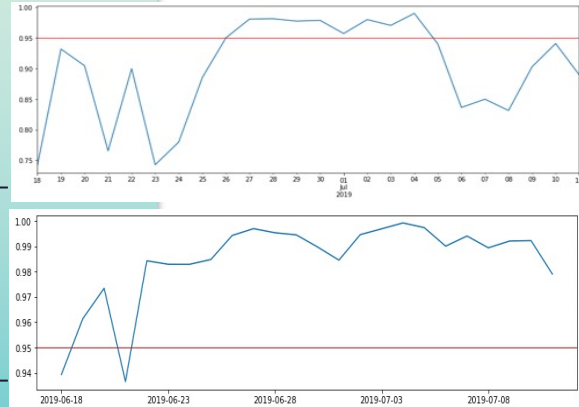
	P_value	Percent lift	Absolute lift
 Session Level 	Not significant	-0.04%	-0.02%
 Customer Level 	Not significant	0.06%	0.04%



We saw a Check out / Add to cart rate lift on both session level and customer level, however, none of the result is statistically significant. Therefore, we cannot make any statement and have to accept the null hypothesis: **Adding this free shipping bar will not increase Check out / Add to cart rate.**

What is the lift of Conversion / Check out rate on the session / customer level ?

	P_value	Percent lift	Absolute lift
 Session Level ↑	0.02	0.25%	0.18%
 Customer Level ↑	Not significant	0.14%	0.12%



We saw a Conversion / Check out rate lift on both session level and customer level, however, only the result on session level is statistically significant. Therefore, we can accept the alternative hypothesis: **Adding this free shipping bar will increase Conversion / Check out rate on the session level.**

03

Third metrics: Check out rate, Conversion rate





What is the lift of Check out rate per session / customer?



What is the lift of Conversion rate per session / customer?

What is the lift of Check out rate & Conversion rate per session / customer?

Check out

rate:	P_value	Percent lift	Absolute lift
<hr/>			
 Session Level ↑	Not significant	+ 0.008%	+ 0.001%
<hr/>			
 Customer Level ↑	Not significant	+ 0.04%	+ 0.02%
<hr/>			

Conversion

rate:	P_value	Percent lift	Absolute lift
<hr/>			
 Session Level ↑	Not significant	+ 0.24%	+ 0.03%
<hr/>			
 Customer Level ↑	Not significant	+ 0.19%	+ 0.07%
<hr/>			

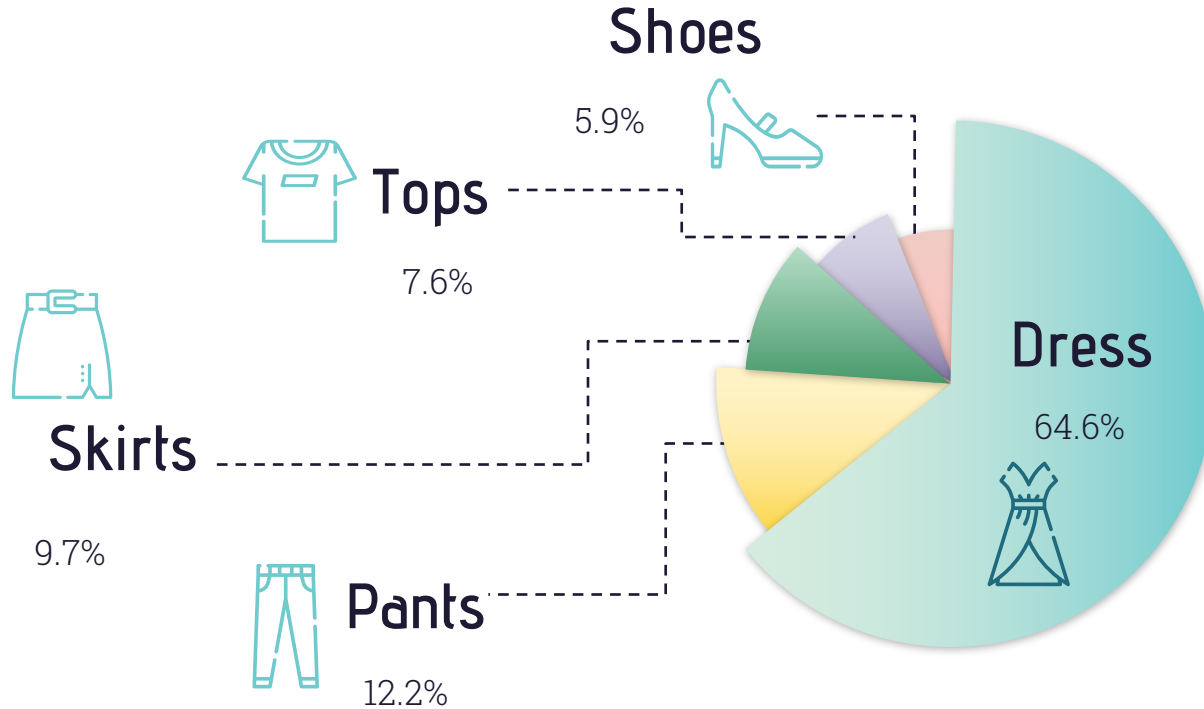
We saw lifts on Reached check out rate and Conversion rate on both session level and customer level, however, none of the result is statistically significant. Therefore, we cannot make any statement and have to accept the null hypothesis: **Adding this free shipping bar will not increase Reached check out rate and Conversion rate.**

04

Insights from cuts: different categories and user types



Traffic Share (Session Distribution) on different categories



Different effect on Conversion/Check out rate on different categories

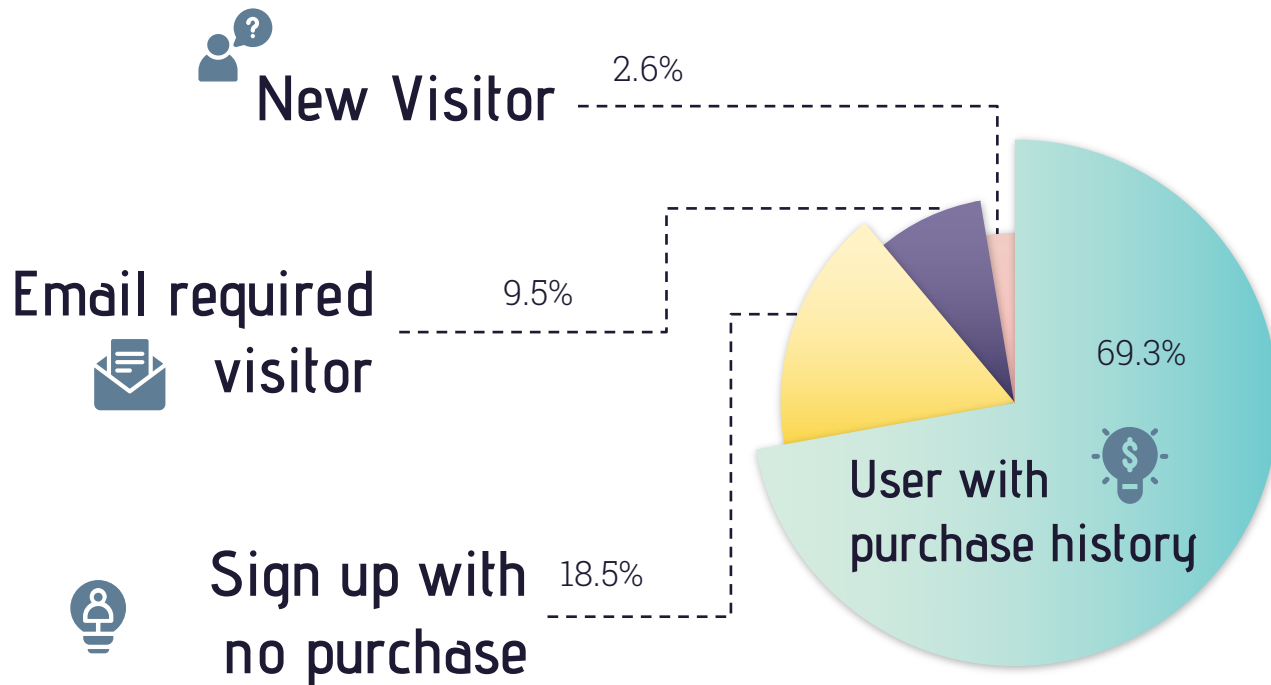
Session

Level 

Category	P_value	Percentage lift	Absolute lift
Dress (64.6%) ↑	0.023	+0.29%	+0.21%
Pants (12.2%) ↑	Not Significant	+0.42%	+0.31%
Skirts (9.7%) ↑	0.021	+0.82%	+0.62%
Tops (7.6%) ↓	Not Significant	-0.17%	-0.10%
Shoes (5.9%) ↓	0.041	-1.12%	-0.78%

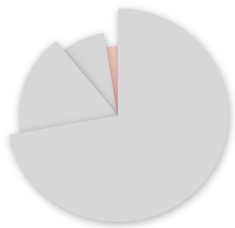
We saw a Conversion / Check out rate lift on session level for the top 3 categories, dress, pants, and skirts. However, the result for pants is not significant. The statement we can make here is, for the categories skirts and dress, which counts for 74.3% traffic on our site, adding this free shipping bar will increase **Conversion / Check out rate on the session level**. Which means, with a free shipping bar, customers are more decisive on making the purchase decision for dress and skirts.

Traffic Share (Session Distribution) on different visitor types



Adding a free shipping bar has a negative effect on new visitors

2.6%



Customer
Level 

Metrics	P_value	Percentage lift	Absolute lift
Check out rate ↓	0.002	-2.28%	-0.61%
Conversion rate ↓	0.013	-2.44%	-0.41%
Check out / Add to cart ↓	0.003	-2.21%	-0.66%
Conversion /Add to cart ↓	0.014	-2.37%	-0.44%
Conversion / Check out ↓	Not Significant	-0.17%	-0.10%

A free shipping bar have a negative effect on new visitors.

I think this bar is making them more hesitate trying on new things because while they don't want to miss the "award" of free shipping, they also feel that hit the free shipping price for a new platform is a big commitment.

New visitors type is more sensitive than the other user types.

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05

Recommendations:
What should we do next?

Recommendations

- Considering the negative result from new visitors type of customers, if we want to run a similar test in the future, I recommend we avoid the new visitors type of customers, if this is technically possible for us.
 - Considering this test was only running on desktop, we may also want to test on mobile and tablet in the future.
 - Have different free shipping threshold price for different visitor types to test.
-

THANKS!



Do you have any questions?

My Email:
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(Please contact me if you want a backup of the python
& sql code I use for this product analysis project)

CREDITS: This presentation template was created by Slidesgo,
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