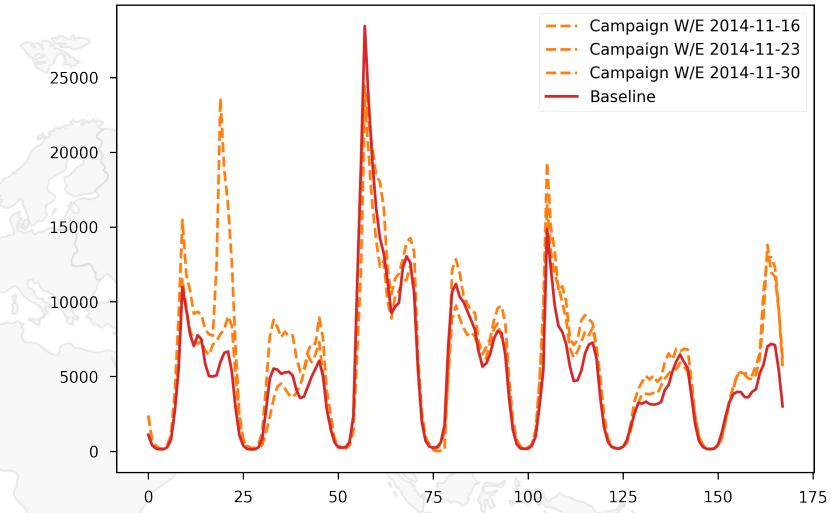
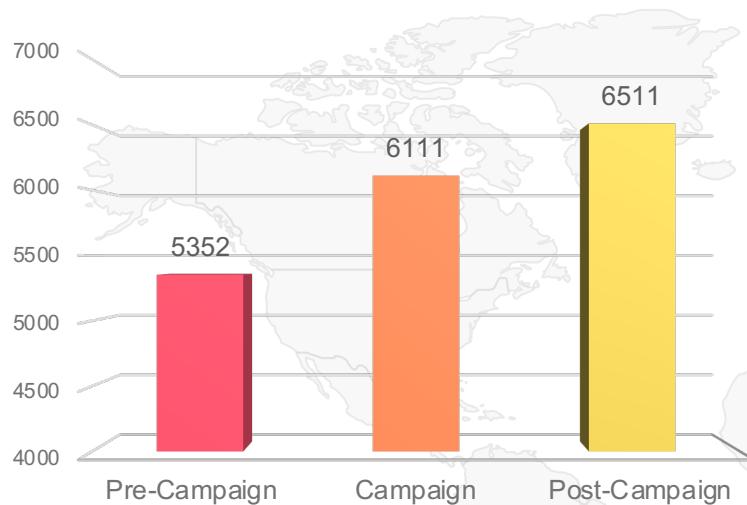


# TV spots campaign

Impact on website visits

# TV spots impact on website visits

Campaign and Post-Campaign website visits compared to baseline (Pre-Campaign)



There's a **positive** impact on the website visits **during and after the campaign** (the chart on the left-hand side). There're specific days of week with the **biggest uplift: Monday and Sunday**, while Wednesday doesn't report any (the chart on the right-hand side).

Pre-Campaign: 1st October 2014 to 9th November 2014. Campaign: 10th November 2014 to 23rd November 2014. Post-Campaign: 24th November to 19th December 2014.

# Most important TV spot features

Summary of the TV spot features having impact on the uplift to website visits

01 > 100%

TV spots having more than 100% uplift were shown during **Day timeband**, on **Monday** and **Tuesday**, and between **18-22** or at **Midnight**.

02 > 50%

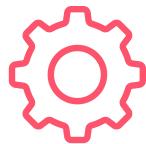
For TV spots with under 100%, but more than 50% uplift the most important factors were **Prime timeband** and **18-22**.

03 NO IMPACT

Analysis didn't find any significant **correlation** between TV spot features like **GRP**, **main TV channels**. However, **thematic TV channels** had minor correlation with impact.

# Model definition

The model was created by extracting baseline, calculating uplift, grouping into 4 classes and extracting features.



01



02



**Baseline** was created by calculating a **median** of hourly website visits for each week in the period **before the campaign** (1<sup>st</sup> October 2014 – 9<sup>th</sup> November 2014)

Classes defined based on uplift from baseline: <0 – no uplift, >0 – minimal uplift, >50% - greater than 50% from baseline, >100% - greater than 100% from baseline

**Multi-class classification** model using XGBoost with one-vs-rest strategy and optimized using GridSearch with StratifiedKFold cross-validation method.

Baseline

Classes

Classification

# Model evaluation

F1-score and confusion matrix

Classification report – train set

	precision	recall	f1-score	support
0	0.77	0.91	0.83	562
1	0.86	0.88	0.87	1012
2	0.99	0.46	0.63	197
3	0.93	0.80	0.86	69
accuracy			0.84	1840
macro avg	0.89	0.76	0.80	1840
weighted avg	0.85	0.84	0.83	1840

Classification report – test set

	precision	recall	f1-score	support
0	1.00	0.33	0.49	64
1	0.83	0.96	0.89	250
2	0.81	0.98	0.89	44
3	1.00	0.56	0.71	9
accuracy			0.84	367
macro avg	0.91	0.71	0.75	367
weighted avg	0.86	0.84	0.82	367

