PRODUCT ANALYSIS Of NON WORKING HOURS PAGE

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In this analysis, the main subject is to identify which variation has the best performance. In this analysis the main evaluation metric will be the events that the customers used. The data are from the period 1/3/2018-6/7/2018. In this dataset there are 14011 sessions. At the first table, it is presented the conversion rate (that means that the suggested_popup was not closed) and the other events that the user did.

variation_name	total_sessions	conversion _rate	transaction	suggested_shop _clicked	suggested_modal _shop_list_clicked	checkout _loaded	suggested_popup _closed
Variation #2	4692	92,1%	38,5%	38,9%	39,9%	38,4%	39,8%
Original	4644	92%	39%	38,3%	39%	39%	38%
Variation #1	4679	91,9%	40%	39,3%	37,1%	38,9%	39,2%

Query 1 result.

According to the table above, the variation #1 has the best transaction percentage: **40%.** The transaction rate is a primary metric for evaluating success in terms of conversions. But the higher conversion rate is from variation#2 which has a slightly better conversion rate (92.1%) than Variation #1 (91.9%), but the conversion rate alone does not directly correlate with the transaction rate. The transaction rate is crucial because it reflects actual orders placed, which is the main goal of e-commerce. Although Variation #1 has a better percentage in some other engagement metrics (e.g., suggested shop clicked at 39.3% compared to Variation #2's 38.9% and compared to Original 38,3%) and a little lower in some other suggested_modal_shop_list_clicked. The variation #1 is also in the middle of original and variation#2 in popup closed.

So, from this analysis the variation #1 is the best option mainly based on the actual transaction rate. This indicates that users who interacted with Variation #1 were more likely to make a purchase, making it the most effective variation for driving sales

In order to make a deep dive in the days of non working hours we make an analysis on holiday days of 25/3, Easter days (7/4-9/4) and holy spirit day and 1/5. From the table we can observe the results.

variation_name	total_sessions	% of total	conversion_rate	transaction	suggested_shop_clicked	suggested_modal_shop_list_clicked	checkout_loaded	suggested_popup_closed
Variation #1	257	5%	92.6	38.1	34.2	35.0	33.1	34.6
Variation #2	247	5%	92.3	30.4	34.0	39.3	32.4	34.0
Original	253	5%	90.5	36.8	31.2	36.8	37.2	40.3

Query 2 result.

In this table above, it is observed that Variation #1 has achieved the highest conversion rate **(92.6%)** among the variations and maintained a relatively high transaction rate **(38.1%).** The Variation #2 has a high conversion rate (92.3%), it had the lowest transaction rate (30.4%) among the variations, indicating that while users engaged with the popup, fewer completed purchases. The original variation had the lowest conversion rate (90.5%) and a transaction rate (36.8%) that falls between the other two variations. Variation #1 also leads in conversion and suggested shop click rates and the original variation is the most closed popup but the most check out loaded.

To conclude variation #1 seems to be effective also in the holidays season but also original variation has relatively stable performance during holidays suggests that it may serve as a reliable option for users, even though it was outperformed by the variations in the non-holiday analysis.

Other insights for the Variations

To continue our analysis, in the tables below, it is examined the relation of variation with the source, the visittype and the medium (Every referral to a website also has a medium. Possible medium include: “organic” (unpaid search), “cpc” (cost per click, i.e. paid search), “referral” (referral), “email” (the name of a custom medium you have created), “none” (direct traffic has a medium of “none”)). At first, in the table below it analyzed the source and the medium.

source	medium	variation_name	total_sessions	conversion_rate	transaction	suggested_shop_clicked	suggested_modal_shop_list_clicked	checkout_loaded	suggested_popup_closed
google	organic	Original	2292	92.2%	38.4%	37.3%	37.8%	38.1%	36.7%
google	organic	Variation #1	2282	91.1%	37.9%	37.7%	35.5%	37.0%	39.4%
google	organic	Variation #2	2250	90.6%	37.5%	38.0%	37.9%	35.5%	39.4%

google	cpc	Variation #1	1787	92.2%	39.8%	38.6%	36.4%	40.1%	38.1%
google	cpc	Variation #2	1757	93.1%	39.4%	38.6%	39.9%	40.4%	39.6%
google	cpc	Original	1721	91.6%	38.9%	38.3%	37.6%	38.2%	36.9%
(direct)	(none)	Variation #2	538	92.8%	37.7%	38.1%	40.9%	38.5%	37.4%
facebook	display	Original	54	96.3%	37.0%	42.6%	40.7%	40.7%	38.9%
yahoo	organic	Variation #1	49	98.0%	42.9%	49.0%	34.7%	28.6%	32.7%
email	crm	Original	41	90.2%	43.9%	34.1%	31.7%	34.1%	48.8%
yahoo	organic	Original	40	95.0%	27.5%	30.0%	50.0%	37.5%	37.5%
email	crm	Variation #2	40	87.5%	17.5%	52.5%	47.5%	35.0%	42.5%

Query 3 demo data

It seems that in Google Organic the Original variation leads in total sessions (2292) and has a solid conversion rate (92.2%) and transaction rate (38.4%). Variations #1 and #2 show slightly lower performance, indicating the original version is more effective for organic traffic. According to Google CPC Variation #2 has the highest conversion rate (93.1%) and a strong transaction rate (39.4%), outperforming the original and Variation #1 in this category. This suggests that CPC traffic responds well to this variation. Variation #1 also performs well with a conversion rate of 92.2% and a transaction rate of 39.8%. In the direct traffic the Variation #1 shows the highest transaction rate (40.2%) among direct visits, indicating that users who arrive directly engage well with this variation.Variation #2 has a competitive conversion rate (92.8%) but a lower transaction rate (37.7%). In the Facebook Display the original variation has an impressive conversion rate (96.3%) but only 54 sessions, indicating high effectiveness but low volume. In Yahoo Organic, Variation #1 performs exceptionally well with a conversion rate of 98.0% and a transaction rate of 42.9%, indicating strong engagement from this source. In the Email CRM the original variation has a higher transaction rate (43.9%) compared to Variation #2 (17.5%), suggesting that users converting through email are more inclined to engage with the original.

According to the other metrics the suggested shop clicked metrics vary across sources, with Variation #1 performing particularly well on yahoo organic (49.0%) and facebook display (42.6%). The checkout rates is generally high across all variations and sources. The Suggested Popup Closed Rates notably varied, with some sources like yahoo organic showing lower closure rates, which is a positive indicator of user engagement.

In conclusion, the variation #2 is particularly effective in driving conversions from CPC traffic, while Variation #1 excels in organic search traffic from Yahoo. The performance of Variation #1 with direct traffic suggests that returning or loyal customers are more likely to purchase. The original variation's strong performance in email campaigns suggests that it resonates well with users who are already familiar with the brand.

According to visit type:

visitType	variation_name	total_sessions	conversion_rate	transaction	suggested_shop_clicked	suggested_modal_shop_list_clicked	checkout_loaded	suggested_popup_closed
Returning Visit	Original	3591	92.6	40.3	39.6	39.9	40.2	38.6
New Visit	Original	1102	90.2	33.6	32.9	34.8	33.7	34.8
Returning Visit	Variation #1	3606	92.3	41.0	40.0	38.0	40.2	39.7
New Visit	Variation #1	1131	90.5	35.5	35.6	32.9	33.8	35.9
Returning Visit	Variation #2	3613	92.6	39.5	40.2	40.6	40.5	40.4
New Visit	Variation #2	1129	90.2	34.1	33.2	36.6	30.6	37.0

Query 4

From the table above it observed that the returning visitors tend to have higher conversion rates and transaction rates across all variations compared to New Visitors. This is typically expected, as returning visitors are usually more familiar with the site and its offerings. The original variation conversion rate of returning visitors is 92.6% with a transaction rate of 40.3%, indicating strong engagement and effectiveness for returning users. Although new visitors' conversion rate is lower at 90.2% with a transaction rate of 33.6%. This suggests that the original variation is less effective at converting new users. For variation #1 , Returning Visitors have a slightly lower conversion rate (92.3%) but a higher transaction rate (41.0%), indicating it is effective at converting engaged returning users into transactions and New Visitors' conversion rate is 90.5% with a

transaction rate of 35.5%, which is an improvement compared to the original variation for new visitors. Finally, for Variation #2 the Returning Visitors have similar to the original, this variation shows a conversion rate of 92.6% and a transaction rate of 39.5%. It is competitive with Variation #1 for returning users. New Visitors' conversion rate is 90.2%, and the transaction rate is 34.1%, similar to the original but lower than Variation #1. According to other metrics:

- **Suggested Shop Clicked**: Returning visitors to Variation #1 had the highest engagement (40.0%), while new visitors to the original variation had the lowest (32.9%).
- **Checkout Loaded**: Both returning visitors across all variations show higher checkout loaded rates, indicating that returning visitors are progressing further in the purchase journey.
- **Suggested Popup Closed**: Returning visitors show consistent popup closure rates (around 38-40%), while new visitors vary more significantly (30.6% for Variation #2).

So, the returning visitors are more engaged with all variations, indicating that the suggested shops feature is effective for users who are already familiar with efood platform. New visitors have lower conversion and transaction rates across all variations, particularly for the original variation. This suggests a need for improved onboarding or incentives for new users to encourage purchases. Variation #1 shows promise for both returning and new visitors, particularly the transaction rates, making it a strong candidate for continued use and further testing.

Conclusion

To sum up, the best overall variation is variation#1 particularly for direct traffic and new visitors. It exhibits strong performance metrics, with the highest transaction rate (40.2%) among direct visitors and solid engagement across various sources. It emerges as the best overall option, particularly for direct traffic and new visitors. Variation #1 consistently drives higher engagement metrics, such as suggested shop clicks and checkout loaded rates, which are crucial for converting users into transactions. By Implementing Variation #1 as the default option for the suggested shops feature across most channels, particularly for returning users and organic traffic.

Part 2

Addressing the follow-up questions raised by the Product Managers involves a careful analysis of the data, focusing on both statistical and descriptive differences.

Question 1)The results according to the table above ,reveal significant differences in user engagement and conversion between returning and new visitors across the variations of the suggested shops feature. For returning visitors, the Original variation achieves a conversion rate of 92.6% and a transaction rate of 40.3%, which are both strong indicators of effective engagement. This variation also shows a suggested shop click rate of 39.6% and a checkout loaded rate of 40.2%, indicating that returning users are not only engaging with the suggested shops but also successfully navigating to checkout. Variation #1 for returning visitors maintains a similar performance with a conversion rate of 92.3% and a transaction rate of 41.0%, alongside a suggested shop click rate of 40.0%.

In contrast, new visitors demonstrate lower performance metrics across all variations. The Original variation has a conversion rate of 90.2% and a transaction rate of 33.6%, with a suggested shop click rate of 32.9% and a checkout loaded rate of 34.8%. Variation #1 for new visitors shows slight improvement with a conversion rate of 90.5% and a transaction rate of 35.5%, but still falls short compared to returning visitors. The suggested shop click rate is 35.6%, but the checkout loaded rate is lower at 33.8%.

Both variations for new visitors underperform compared to their returning counterparts in terms of transaction rates and engagement metrics like suggested shop clicks and checkout loads. Specifically, Variation #2 for new visitors has a conversion rate of 90.2% but a lower transaction rate of 34.1%, indicating that while they engage with the popup, they are less likely to convert into transactions.

Overall, while returning visitors show strong engagement and high conversion rates across all variations, the metrics for new visitors suggest a clear need for improvement. Enhancing the user experience for new visitors, potentially through targeted onboarding strategies or tailored incentives, could help bridge the gap in engagement and drive higher conversion rates.

Question 2) The analysis of user behavior reveals distinct differences in performance between users coming from Google CPC and those from other traffic sources. For users arriving via Google CPC, the results show robust engagement metrics. Variation #1 achieves a conversion rate of 92.2% with a transaction rate of 39.8%, while Variation #2 leads with a conversion rate of 93.1% and a transaction rate of 39.4%. This indicates that users from Google CPC are highly engaged and responsive to these variations.

In contrast, users from Google Organic show slightly lower performance metrics. The Original variation has a conversion rate of 92.2% and a transaction rate of 38.4%, while the highest-performing Variation #1 achieves a conversion rate of 91.1% and a transaction rate of 37.9%. This suggests that while Google Organic users are also engaged, they may not convert at the same rate as those coming from Google CPC.

Additionally, when comparing these groups to users from other sources—such as direct, email, and social referrals, it's evident that Google CPC users tend to exhibit higher transaction rates and engagement metrics overall. For example, direct traffic shows a maximum transaction rate of 40.2% with Variation #1, but this pales in comparison to the best-performing Google CPC variations.

Overall, the results indicate that users from Google CPC are not only converting at higher rates but also engaging more effectively with the suggested shops feature compared to users from other traffic sources. This suggests that tailored marketing strategies for Google CPC traffic may be warranted, as they appear to yield better results.

Appendix

Query 1

```
select variation_id,

variation_name,

COUNT(DISTINCT session_id) AS total_sessions,

ROUND ((COUNT(DISTINCT CASE WHEN event_key!= 'suggested_popup.closed'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
AS conversion_rate,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'transaction'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1) transaction,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_shop.clicked'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
suggested_shop_clicked,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_modal.shop_list.clicked'THEN session_id END) * 100.0 / COUNT(DISTINCT
session_id)),1) suggested_modal_shop_list_clicked,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'checkout.loaded'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
checkout_loaded,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_popup.closed'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
AS suggested_popup_closed



FROM `api-project-939553954858.pa.pa_suggested_shops_sample_pub`

group by variation_id, variation_name

ORDER BY

conversion_rate DESC
```

Query 2

```
select variation_id,

variation_name,

COUNT(DISTINCT session_id) AS total_sessions,

ROUND ((COUNT(DISTINCT CASE WHEN event_key!= 'suggested_popup.closed'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
AS conversion_rate,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'transaction'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1) transaction,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_shop.clicked'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
suggested_shop_clicked,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_modal.shop_list.clicked'THEN session_id END) * 100.0 / COUNT(DISTINCT
session_id)),1) suggested_modal_shop_list_clicked,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'checkout.loaded'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
checkout_loaded,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_popup.closed'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
AS suggested_popup_closed



FROM `api-project-939553954858.pa.pa_suggested_shops_sample_pub`

 where date in ('2018-05-01','2018-05-28','2018-03-25','2018-04-06','2018-04-07','2018-04-08','2018-04-09')

group by variation_id, variation_name

ORDER BY conversion_rate DESC
```

Query 3

```
SELECT

source,medium,

variation_name,

COUNT(DISTINCT session_id) AS total_sessions,

ROUND ((COUNT(DISTINCT CASE WHEN event_key!= 'suggested_popup.closed'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
AS conversion_rate,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'transaction'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1) transaction,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_shop.clicked'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
suggested_shop_clicked,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_modal.shop_list.clicked'THEN session_id END) * 100.0 / COUNT(DISTINCT
session_id)),1) suggested_modal_shop_list_clicked,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'checkout.loaded'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
checkout_loaded,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_popup.closed'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
AS suggested_popup_closed


FROM `api-project-939553954858.pa.pa_suggested_shops_sample_pub`

WHERE

source IN ('google') and medium in ( 'cpc')
```

```
GROUP BY

source,medium,

variation_name;
```

Query 4

```
SELECT

visitType,variation_name,

COUNT(DISTINCT session_id) AS total_sessions,

ROUND ((COUNT(DISTINCT CASE WHEN event_key!= 'suggested_popup.closed'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
AS conversion_rate,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'transaction'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1) transaction,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_shop.clicked'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
suggested_shop_clicked,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_modal.shop_list.clicked'THEN session_id END) * 100.0 / COUNT(DISTINCT
session_id)),1) suggested_modal_shop_list_clicked,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'checkout.loaded'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
checkout_loaded,

ROUND ((COUNT(DISTINCT CASE WHEN event_key= 'suggested_popup.closed'THEN session_id END) * 100.0 / COUNT(DISTINCT session_id)),1)
AS suggested_popup_closed
```

```
FROM
`api-project-939553954858.pa.pa_suggested_shops_sample_pub`
GROUP BY
visitType,variation_name;
```