WEBSITE INTERACTION FUNNEL ANALYSIS

SCOPE AND BACKGROUND

This analysis aims to represent the **customer journey** from the moment a product is added to the cart on our website to the moment the purchase is confirmed. Its goal is to **identify bottlenecks** in the checkout process and optimize it to **maximize sales completion**.

The analysis starts by focusing on the **top three countries**, which are identified based on the **number of unique interactions** they recorded. Next, the analysis is expanded to include **additional events** on the website, providing a broader and more comprehensive view.

The data was collected through a dedicated system and stored in **Google Cloud** within a specific *raw_events* table.

DEFINITIONS

EVENT: An event is simply the type of interaction a user can perform on the website.

UNIQUE INTERACTION: Since the *raw_events* table records every single event triggered by each user, which can occur multiple times over time, it is crucial to limit the analysis to include only the first interaction for each user per event. This ensures the data reflects distinct user actions and avoids overrepresentation caused by repeated events.

DATA PROCESSING

For this analysis, data was extracted using **Google BigQuery**, a powerful cloud-based tool for managing and querying large datasets. BigQuery uses **SQL** *(Structured Query Language)* to interact with the data. Queries are structured commands that allow users to retrieve, filter, and manipulate data efficiently to answer specific business questions or uncover valuable insights.

The query is structured to the following steps:

Step 1: Creation of the *unique_events* table

WHAT IT DOES	Selects the event *(event_name)*, user ID *(user_pseudo_id)*, and the timestamp of the first recorded event **(MIN** *(DISTINCT event_timestamp)***)** from the *raw_events* table.
OUTCOME	A table containing one record for each combination of event and user, showing the first time the event occurred.

Step 2: Creation of the *detailed_unique_events* table

WHAT IT DOES	Joins the original *raw_events* table with *unique_events* to retrieve only records matching the unique events defined in the previous step. Filters for specific events of interest: *add_to_cart*, *begin_checkout*, *add_shipping_info*, *select_promotion*, *add_payment_info*, and *purchase*.
OUTCOME	A detailed table (with all the columns from the original one) containing only the first occurrence of the specified events for each user.

Step 3: Creation of the *top_countries* table*

WHAT IT DOES	Counts the total number of unique events **(COUNT(*))** for each country. Uses the **RANK()** function to rank countries in descending order by event count.
OUTCOME	A table listing the total number of events per country and their respective ranks.

*The advantage of creating the *top_countries* table using the **RANK** function is that it makes the results dynamic. If the data changes in the future, the top three countries will automatically update to reflect the new rankings. This ensures that the analysis remains accurate and relevant over time without requiring manual adjustments.

Step 4: Creation of the *events_per_countries* table

WHAT IT DOES	Uses **COUNTIF** to calculate the number of events for countries ranked 1st *(country_1)*, 2nd *(country_2)*, and 3rd *(country_3)*. Sums *country_1, country_2, country_3 (country_podium)*. Joins *detailed_unique_events* with *top_countries* to map countries to their respective events.
OUTCOME	A table with event counts for the top-ranked countries and the combined total for the top three.

Step 5: Creation of the *events_per_countries* table

WHAT IT DOES	Computes absolute proportions *(absolute_1, absolute_2, absolute_3, absolute_podium)* relative to the highest value in each category using **FIRST_VALUE()**. Computes relative proportions *(relative_1, relative_2, relative_3, relative_podium)* compared to the previous value in the ranking using **LAG()**. Uses **COALESCE** to handle potential null values, defaulting them to **1.0**.
OUTCOME	An enriched table showing both absolute and relative metrics for comparisons across top-ranked countries and the podium totals.

COUNTRIES INVOLVED IN THE ANALYSIS

Based on the data we have so far, the top three countries by the number of unique interactions are the **United States** *(country_1)*, **India** *(country_2)*, and **Canada** *(country_3)*.

QUERY RESULTS

EVENT NAME	COUNT OF UNIQUE EVENTS					DROP-OFF RATE FROM "ADD TO CART"					STEP-BY-STEP CONVERSION RATE				
	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL
	country_1	country_2	country_3	country_podium	all_countries	absolute_1	absolute_2	absolute_3	absolute_podium	absolute_all	relative_1	relative_2	relative_3	relative_podium	relative_all
ADD TO CART	5603	1162	993	7758	12545	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
BEGIN CHECKOUT	4310	878	764	5952	9715	76,9%	75,6%	76,9%	76,7%	77,4%	76,9%	75,6%	76,9%	76,7%	77,4%
ADD SHIPPING INFO	4309	878	764	5951	9714	76,9%	75,6%	76,9%	76,7%	77,4%	100%	100%	100%	100%	100%
SELECT PROMOTION	3561	777	606	4944	8164	63,6%	66,9%	61,0%	63,7%	65,1%	82,6%	88,5%	79,3%	83,1%	84,0%
ADD PAYEMENT INFO	2516	524	465	3505	5751	44,9%	45,1%	46,8%	45,2%	45,8%	70,7%	67,4%	76,7%	70,9%	70,4%
PURCHASE	1942	406	355	2703	4419	34,7%	34,9%	35,8%	34,8%	35,2%	77,2%	77,5%	76,3%	77,1%	76,8%

To enhance the interpretation of the results, heat map is applied to the table. This allows for differentiation of values using a gradient of colors, making it easier to highlight the most significant insights and draw attention to key patterns.

The data highlights that the **United States leads in the number of unique interactions at each step of the funnel**, followed by India and Canada. While the USA consistently shows the highest participation, **the conversion rates across all three countries remain quite similar**. Across all countries combined, **only 34.8% of users who add an item to their cart complete the purchase**, indicating a notable drop-off throughout the funnel.

## Conversion analysis through the checkout stages: all countries vs combined top 3 countries
absolute_all/podium and *relative_all/podium*
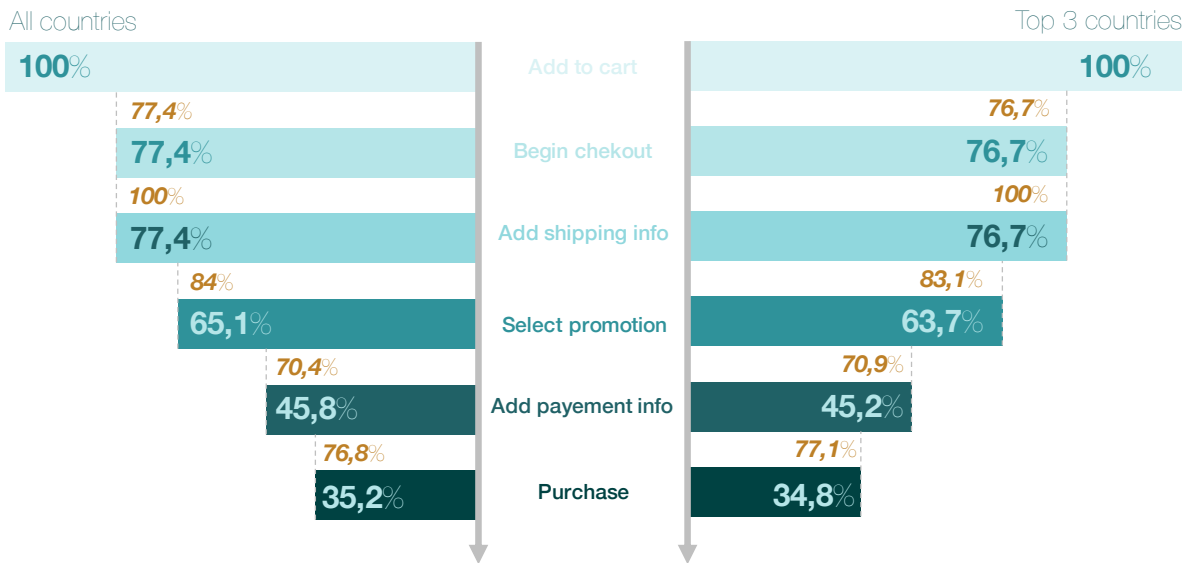
INSIGHTS

The most significant drop-off occurs at the "Select Promotion" stage, where the conversion rate for the top 3 countries reaches 63.7%, compared to 65.1% for all countries. This suggests **a potential friction point that may be impacting the ability to move users further along the funnel**.
Similarly, at the "Add Payment Info" stage, the top 3 countries achieve 45.2%, just below the 45.8% observed globally. Despite these gaps, the final "Purchase" stage shows nearly aligned results, with 34.8% for the top 3 countries and 35.2% overall, indicating a strong recovery in closing sales.
From a business perspective, these insights highlight an **opportunity to optimize specific stages of the funnel, particularly "Select Promotion",** for the top-performing countries. Addressing these friction points, such as **improving promotion clarity or streamlining the user experience**, could lead to higher conversion rates and unlock additional revenue potential.

Country-by-country conversion analysis through the checkout stages
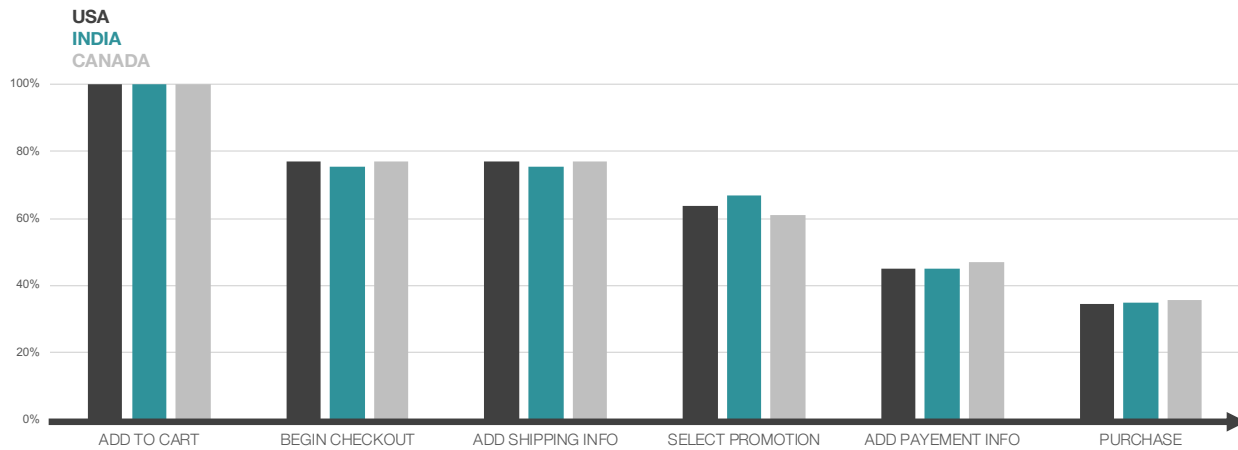
INSIGHTS

Despite the United States having nearly five times the number of interactions compared to India, which ranks second, **there are no significant discrepancies in the conversion rates across the top three countries**. This consistency suggests **that user behavior remains relatively similar, regardless of the volume of interactions**.
Interestingly, all three countries show relatively **strong retention between "Add Payment Info" and "Purchase,"** with over 70% of users completing this final step. While this is a positive sign, the earlier stages of the funnel, particularly between "Add to Cart" and "Begin Checkout", see significant drop-offs that should be addressed.

THE BIG PICTURE: Conversion analysis across the top 3 countries including *First Visits*

To further deepen the understanding of user behavior, this next section includes a series of additional analyses. Among these, we focus first on the same top-performing countries (*USA* , *India* , and *Canada*) as previously examined, but this time we shift our attention to different events in the user journey: *FIRST VISIT* , *VIEW ITEM* , *ADD TO CART* , and *PURCHASE* .

To accommodate these new events, the initial query was slightly modified to include the relevant data points, ensuring consistency with the approach used in previous analyses. This adjustment allows us to **capture broader insights** into user interactions, from their very first visit to the final purchase, highlighting potential trends or areas for improvement in the earlier stages of the funnel.

EVENT NAME	COUNT OF UNIQUE EVENTS					DROP-OFF RATE FROM "FIRST VISIT"					STEP-BY-STEP CONVERSION RATE				
	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL
	country_1	country_2	country_3	country_podium	all_countries	absolute_1	absolute_2	absolute_3	absolute_podium	absolute_all	relative_1	relative_2	relative_3	relative_podium	relative_all
FIRST VISIT	112863	24117	19296	156276	257314	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VIEW ITEM	26953	5795	4653	37401	61252	23,9%	24,0%	24,1%	23,9%	23,8%	23,9%	24,0%	24,1%	23,9%	23,8%
ADD TO CART	5603	1162	993	7758	12545	5,0%	4,8%	5,2%	5,0%	4,9%	20,8%	20,1%	21,3%	20,7%	20,5%
PURCHASE	1942	406	355	2703	4419	1,7%	1,7%	1,8%	1,7%	1,7%	34,7%	34,9%	35,8%	34,8%	35,2%

To enhance the interpretation of the results, heat map is applied to the table. This allows for differentiation of values using a gradient of colors, making it easier to highlight the most significant insights and draw attention to key patterns.

INSIGHTS

Results from the first 3 countries align with the global average. Starting with 156,276 first visits from the top 3 countries, **only 24% of users progress to the "View Item" stage** *, reducing interactions to 37,401. This steep decline indicates a major challenge in retaining user engagement early on. From "View Item" to "Add to Cart," conversion drops further to 21%, highlighting potential barriers such as* **unclear product information or pricing concerns** *.*
Interestingly, **the "Add to Cart" to "Purchase" transition is relatively strong** *, with 35% of users completing their purchase and a minimal 5% drop-off. This trend is consistent across the USA, India, and Canada, despite significant differences in total interaction volumes.*
Overall, the analysis reveals that while the final stage performs well, **the earlier stage, especially from "First Visit" to "View Item", require attention** *to improve retention and drive more users through the funnel.*

Conversion analysis across the top 3 countries through the checkout process
filtering by the operative system

To deepen the analysis of the funnel, the original query has been modified by adding a filter to extract data **associated with the operating system** for each interaction. This new perspective allows us to identify whether specific devices or operating systems might require further optimization to improve the checkout process. By analyzing user behavior across different systems, we can uncover **potential issues or inefficiencies** that may impact conversion rates and **take targeted actions** to enhance the overall user experience.

WEB PORTAL

EVENT NAME	COUNT OF UNIQUE EVENTS					DROP-OFF RATE FROM "ADD TO CART"					STEP-BY-STEP CONVERSION RATE				
	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL
	country_1	country_2	country_3	country_podium	all_countries	absolute_1	absolute_2	absolute_3	absolute_podium	absolute_all	relative_1	relative_2	relative_3	relative_podium	relative_all
ADD TO CART	3211	711	598	4520	7326	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
BEGIN CHECKOUT	2452	529	453	3434	5654	76,4%	74,4%	75,8%	76,0%	77,2%	76,4%	74,4%	75,8%	76,0%	77,2%
ADD SHIPPING INFO	2451	529	453	3433	5653	76,3%	74,4%	75,8%	76,0%	77,2%	100%	100%	100%	100%	100%
SELECT PROMOTION	2047	459	358	2864	4715	63,8%	64,6%	59,9%	63,4%	64,4%	83,5%	86,8%	79,0%	83,4%	83,4%
ADD PAYEMENT INFO	1452	310	272	2034	3355	45,2%	43,6%	45,5%	45,0%	45,8%	70,9%	67,5%	76,0%	71,0%	71,2%
PURCHASE	1132	242	202	1576	2596	35,3%	34,0%	33,8%	34,9%	35,4%	78,0%	78,1%	74,3%	77,5%	77,4%

WINDOWS

EVENT NAME	COUNT OF UNIQUE EVENTS					DROP-OFF RATE FROM "ADD TO CART"					STEP-BY-STEP CONVERSION RATE				
	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL
	country_1	country_2	country_3	country_podium	all_countries	absolute_1	absolute_2	absolute_3	absolute_podium	absolute_all	relative_1	relative_2	relative_3	relative_podium	relative_all
ADD TO CART	628	136	109	873	1422	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
BEGIN CHECKOUT	513	92	72	677	1118	81,7%	67,7%	66,1%	77,6%	78,6%	81,7%	67,7%	66,1%	77,6%	78,6%
ADD SHIPPING INFO	512	92	72	676	1117	81,5%	67,7%	66,1%	77,4%	78,6%	100%	100%	100%	100%	100%
SELECT PROMOTION	423	77	52	552	940	67,4%	56,6%	47,7%	63,2%	66,1%	82,6%	83,7%	72,2%	81,7%	84,2%
ADD PAYEMENT INFO	285	58	42	385	655	45,4%	42,7%	38,5%	44,1%	46,1%	67,4%	75,3%	80,8%	69,8%	69,7%
PURCHASE	206	42	29	277	488	32,8%	30,9%	26,6%	31,7%	34,3%	72,3%	72,4%	69,1%	72,0%	74,5%

MACINTOSH

EVENT NAME	COUNT OF UNIQUE EVENTS					DROP-OFF RATE FROM "ADD TO CART"					STEP-BY-STEP CONVERSION RATE				
	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL
	country_1	country_2	country_3	country_podium	all_countries	absolute_1	absolute_2	absolute_3	absolute_podium	absolute_all	relative_1	relative_2	relative_3	relative_podium	relative_all
ADD TO CART	440	78	68	586	943	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
BEGIN CHECKOUT	321	70	62	453	725	73,0%	89,7%	91,2%	77,3%	76,9%	73,0%	89,7%	91,2%	77,3%	76,9%
ADD SHIPPING INFO	321	70	62	453	725	73,0%	89,7%	91,2%	77,3%	76,9%	100%	100%	100%	100%	100%
SELECT PROMOTION	282	54	42	378	618	64,1%	69,2%	61,8%	64,5%	65,5%	87,9%	77,1%	67,7%	83,4%	85,2%
ADD PAYEMENT INFO	183	44	39	266	427	41,6%	56,4%	57,4%	45,4%	45,3%	64,9%	81,5%	92,9%	70,4%	69,1%
PURCHASE	136	31	35	202	325	30,9%	39,7%	51,5%	34,5%	34,5%	74,3%	70,5%	89,7%	75,9%	76,1%

OTHER

EVENT NAME	COUNT OF UNIQUE EVENTS					DROP-OFF RATE FROM "ADD TO CART"					STEP-BY-STEP CONVERSION RATE				
	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL	USA	INDIA	CANADA	PODIUM	TOTAL
	country_1	country_2	country_3	country_podium	all_countries	absolute_1	absolute_2	absolute_3	absolute_podium	absolute_all	relative_1	relative_2	relative_3	relative_podium	relative_all
ADD TO CART	136	28	29	193	315	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
BEGIN CHECKOUT	116	16	18	150	245	85,3%	57,1%	62,1%	77,7%	77,8%	85,3%	94,1%	62,1%	77,7%	77,8%
ADD SHIPPING INFO	116	16	18	150	245	85,3%	57,1%	62,1%	77,7%	77,8%	100%	100%	100%	100%	100%
SELECT PROMOTION	92	17	15	124	205	67,7%	60,7%	51,7%	64,3%	65,1%	79,3%	60,7%	83,3%	82,7%	83,7%
ADD PAYEMENT INFO	77	11	11	99	153	56,6%	39,3%	37,9%	51,3%	48,6%	83,7%	68,8%	73,3%	79,8%	74,6%
PURCHASE	62	9	10	81	117	45,6%	32,1%	34,5%	42,0%	37,1%	80,5%	81,8%	90,9%	81,8%	76,5%

ANDROID

EVENT NAME	COUNT OF UNIQUE EVENTS					DROP-OFF RATE FROM "ADD TO CART"					STEP-BY-STEP CONVERSION RATE				
	USA country_1	INDIA country_2	CANADA country_3	PODIUM country_podium	TOTAL all_countries	USA absolute_1	INDIA absolute_2	CANADA absolute_3	PODIUM absolute_podium	TOTAL absolute_all	USA relative_1	INDIA relative_2	CANADA relative_3	PODIUM relative_podium	TOTAL relative_all
ADD TO CART	628	136	109	873	1422	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
BEGIN CHECKOUT	513	92	72	677	1118	81,7%	67,7%	66,1%	77,6%	78,6%	81,7%	67,7%	66,1%	77,6%	78,6%
ADD SHIPPING INFO	512	92	72	676	1117	81,5%	67,7%	66,1%	77,4%	78,6%	100%	100%	100%	100%	100%
SELECT PROMOTION	423	77	52	552	940	67,4%	56,6%	47,7%	63,2%	66,1%	82,6%	83,7%	72,2%	81,7%	84,2%
ADD PAYEMENT INFO	285	58	42	385	655	45,4%	42,7%	38,5%	44,1%	46,1%	67,4%	75,3%	80,8%	69,8%	69,7%
PURCHASE	206	42	29	277	488	32,8%	30,9%	26,6%	31,7%	34,3%	72,3%	72,4%	69,1%	72,0%	74,5%

IOS

EVENT NAME	COUNT OF UNIQUE EVENTS					DROP-OFF RATE FROM "ADD TO CART"					STEP-BY-STEP CONVERSION RATE				
	USA country_1	INDIA country_2	CANADA country_3	PODIUM country_podium	TOTAL all_countries	USA absolute_1	INDIA absolute_2	CANADA absolute_3	PODIUM absolute_podium	TOTAL absolute_all	USA relative_1	INDIA relative_2	CANADA relative_3	PODIUM relative_podium	TOTAL relative_all
ADD TO CART	687	123	99	909	1468	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
BEGIN CHECKOUT	536	107	79	722	1146	78,0%	87,0%	79,8%	79,4%	78,1%	78,0%	87,0%	90,8%	79,4%	78,1%
ADD SHIPPING INFO	535	107	79	721	1145	77,9%	87,0%	79,8%	79,3%	78,0%	100%	100%	100%	100%	100%
SELECT PROMOTION	409	101	87	597	998	59,5%	82,1%	87,9%	65,7%	68,0%	76,5%	94,4%	87,9%	82,8%	87,2%
ADD PAYEMENT INFO	318	60	49	427	687	46,3%	48,8%	49,5%	47,0%	46,8%	77,8%	59,4%	62,0%	71,5%	68,8%
PURCHASE	233	48	35	316	511	33,9%	39,0%	35,4%	34,8%	34,8%	73,3%	80,0%	71,4%	74,0%	74,4%

FINAL CONSIDERATIONS

The breakdown of checkout funnel data by operating system and country reveals notable patterns across the USA, India, and Canada.

In the USA, as expected, the volume of interactions across all platforms leads consistently. On Windows, **American users demonstrate stable progression through the funnel**, with moderate drop-off rates and strong conversion at the final "Purchase" stage. This suggests a smooth and efficient user experience on this platform. On Macintosh, however, while overall interaction numbers are lower, **a sharper drop-off occurs at critical stages such as "Add Payment Info",** indicating potential platform-specific issues that may hinder the user journey. On mobile, the data is nuanced: **iOS users in the USA maintain high retention rates across funnel stages**, pointing to a well-optimized experience. Conversely, **Android users experience greater drop-offs**, particularly at the "Select Promotion" stage, hinting at areas for improvement.

In India, drop-offs are significantly more pronounced across most platforms, with Windows and Android dominating the interaction landscape. Indian users encounter notable challenges progressing beyond the "Select Promotion" and "Add Payment Info" stages, where conversion rates are considerably lower compared to the USA. On Macintosh, the limited number of interactions exacerbates these drop-offs, **suggesting that the platform is either underutilized or poorly optimized for the Indian market**. On mobile, **Android users face the highest friction**, likely driven by user experience or technical inefficiencies, further impacting conversion rates.

For Canada, trends lie between those observed in the USA and India. **On Windows, Canadian users perform relatively well**, with drop-off rates closely aligning with American trends. **On Macintosh, however, challenges persist**, particularly in the final funnel stages, indicating **common friction points across North American markets**. Interestingly, **iOS users in Canada show stable conversion rates**, comparable to their American counterparts. On the other hand, **Android users exhibit a noticeable decline in mid-funnel stages**, mirroring trends seen in India, albeit to a lesser extent.

In conclusion, **the USA exhibits the highest engagement and conversion stability**, particularly on Windows and iOS, highlighting the effectiveness of user experiences on these platforms. In contrast, **India faces substantial drop-offs**, especially on Android and in later funnel stages, signaling opportunities for targeted optimizations. **Canada**, while performing better than India, **reflects some USA trends but continues to struggle** with drop-offs on Macintosh and Android.

Addressing platform-specific challenges, particularly on Macintosh and Android, and improving key stages such as "Select Promotion" and "Add Payment Info" could unlock additional revenue opportunities and enhance funnel performance across all three countries.

NEXT STEPS

To improve the checkout experience and drive higher conversions, there are clear opportunities in both the Indian and Canadian markets by addressing barriers related to accessibility and engagement.

In India, one of the key priorities is **verifying the accuracy of the Hindi translations** used during the checkout process. This is particularly important in critical stages like "Add Payment Info" or "Select Promotion," where clear and precise communication is vital to avoid confusion or user friction. Additionally, considering India's linguistic diversity, **supporting other widely spoken languages such as Bengali, Telugu, Marathi, Tamil, or Urdu** could make the process more accessible and inclusive, enhancing the overall user experience.

For the Canadian market, improving language accessibility is equally important. **Ensuring a seamless checkout flow in both English and French** will help cater to Canada's bilingual population and reduce drop-offs caused by language barriers. Another significant opportunity lies in re-engaging users who have abandoned their carts. **A targeted "return-to-cart" strategy**, such as personalized email reminders or push notifications, could encourage users to complete their purchases. Adding incentives like **small discounts, free shipping, or time-limited promotions** can make returning to checkout more appealing. **Exit-intent pop-ups** could also be highly effective, offering prompts like "Need help with your purchase?" or **special last-minute offers** to nudge users toward completion.

For both markets, **prioritizing improvements to the mobile experience is essential**, particularly for Android users. Drop-offs in the early stages of the funnel are often linked to technical performance issues, such as slow page load times or a lack of mobile optimization. **Conducting A/B testing on the checkout flow can help** identify changes that streamline the process and reduce friction.

Finally, investing in **localized promotions tailored to cultural and regional preferences** can make the checkout process more engaging. Highlighting **region-specific payment options or promotions** that resonate with local audiences can further reduce barriers and improve conversions.

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