**Message to Granify team re: discrepancies in CrissKross data**

When comparing Granify’s order data from CrissKross with CrissKross’ own data, I have found that 4.37% of orders had a discrepancy in the order type or revenue value, with about 4% of orders having a discrepancy in the order segment and 4% having a discrepancy in the revenue amount. While these are below 5%, it’s still above 3%, so I took a look at the data to identify any patterns in the orders with discrepancies.

I joined the Granify and CrissKross data together and then created flags for order and revenue discrepancies. Most orders with an order discrepancy also had a revenue discrepancy, and visa versa. However, there were still some orders that had a discrepancy only in revenue or only in order.

|  |  |  |
| --- | --- | --- |
| # of Both Order and Revenue Discrepancies | # of Order-Only Discrepancies | # of Revenue-Only Discrepancies |
| 4654 | 481 | 477 |

I compared the proportion of browser and browser version for orders without order discrepancies and orders with order discrepancies. I found that 10.34% of orders with order discrepancies were made using Firefox version 72.0 while only 2.43% of orders without discrepancies were using that that version of Firefox.

I looked to see if these orders with order discrepancies made with Firefox 72.0 had any other patterns, such as mostly occurring on a certain operating system, but I did not find any other patterns there.

After looking at orders with a revenue discrepancy but no order discrepancy, I found a similar pattern where the orders with revenue discrepancies were disproportionately made with Firefox version 72.0.



As you can see from this table, Mobile Safari version 12.0 was also disproportionately used in orders with an order discrepancy, though this difference is less than with Firefox version 72.0. I also found that orders with revenue discrepancies had a similar patterns.



I have saved these tables as CSV files if you want to look at the full results.

The other major pattern in the discrepancies I found only applies to the orders with an order discrepancy. All but one order with a traffic type of “ip\_blacklist” had an order discrepancy, and all orders with a traffic type of “not\_supported” had an order discrepancy. I did not find any other patterns in the ip\_blacklist group. However, I looked into the “not\_supported” group and all but one were using mobile Windows operating systems.



**Message to CrissKross Account Manager**

Hi Account Manager,

I have found some discrepancies between Granify’s order data for CrissKross’ website and the data CrissKross provided us. About 4.37% of orders had either an order type or revenue amount that did not match, and many had both non-matching order type and the revenue types. At a minimum we at Granify want to make sure that less than 5% of orders have discrepancies like this, but we usually aim for a rate of 3% or less.

After extensively exploring the data, I found two major patterns in the orders with discrepancies. First, these orders were much more likely to be made on Firefox version 72.0 browsers than orders without discrepancies.

I also found that orders with discrepancies were also disproportionately made on Mobile Safari version 12.0 browsers, though this was a much less significant pattern.

The other major pattern I identified was that orders made from blacklisted IPs and those made on unsupported traffic were overwhelmingly likely to have order types discrepancies.

|  |  |  |
| --- | --- | --- |
|  | Orders with discrepancies in order type | Orders without discrepancies in order type |
| Blacklisted IP Address | 58 | 1 |
| Unsupported | 7 | 0 |

Notably, six of the seven orders from unsupported traffic used were made on mobile Windows OS’s.

If we can identify why these discrepancies are arising and fix the issues, that will lower the discrepancy rate significantly.

Let me know if you have any questions.

- Brian Morton