



Instacart Sales Dashboard Usability Test Report

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Goals/Focus of the Usability Test

Due to multiple ways our Dashboard can be used, we've focused our study on main experience of every tab in Dashboard with two primary goals: 1) discover issues in our design of the information architecture, user flow and dashboard layout 2) identify the effectiveness and readability of our data visualization - if users can easily read and understand the data with some certain goal easily and quickly. From the framework of usability, these goals helped us formulate the following research questions which drove the planning, moderation, and results of the study:

Efficiency & Effectiveness: How easily and successfully can users gain specific data insights under each tab / section ?

Learnability & Intuitiveness: Can users perform common tasks with little or no assistance?

Usefulness & Satisfaction: Does the dashboard provide the functions users need and expect for monitoring Instacart sales business?



Target Users & Their Expected Goals

Our Instacart Sales Dashboard is a visualized data hub. Its core mission is to translate and aggregate raw data into readable and understandable graphs for Instacart's sales business teams, our targeted user groups, to monitor seasonal performance and gain data insights about the popularity of every department, and every product. Also, they could utilize our dashboard to

know the customers' behavior as well. As a result, they can use the insight to make sale strategies and adjust their business.

Methodology

Our test team invited five people who have been a salesman or who are BI / Data Analysts given the context to participate in this test. The personal information of participants local in the section of Participant Profiles. In each test session, 2 of our team members who become test supervisors and result recorders try to use the way and necessary prototype to conduct a test with them. The testing time will vary from 20 mins to 30 mins. Our usability test includes these 4 steps:

1. The Tableau prototype and our design description
2. Q&A for the prototype & our design standpoint
3. Test Task Walkthrough
4. User Interview about the general design and their experience.

In this testing, because of time limitation, we are not able to test with all Instacart's real users; however instead, we have intentionally selected our participants who are with the same needs or in the same experience level as Instacart's real sales business teams. Out of our health consideration these days, our test team schedules online virtual meetings with these participants and publishes our prototypes online to let them play in a real way. Meanwhile in each session,

there's one supervisor who prompts participants in going through the test and the other notetaker who records the testers' thoughts and other feedback. We will use all the recorded data to infer the conclusion for this test project.

The description and Q&A for the Tableau prototype and our design description

To provide more details, at the beginning of our test, we will describe our Tableau prototype – Instacart Sales Dashboard. By our description, we will not only help testers to imagine and understand our design standpoint and context but also show some references to help them understand our thinking. After they know the context and our intention about it, we will give them chances to ask any question of the product and our design they feel confused about.

*Describe why we design this and how it could be used - what goal the users could achieve through using our dashboard

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Test Task Walkthrough

After introducing our project and product, the test supervisor will instruct the participants to go through 1 task for each tab, which equals 4 in total. They are respectively:

Sales Overview: In what period of every week does Instacart get the most orders? Which day of a week does Instacart get the most orders on average?

Department Overview: What are the top 3 aisle of the Produce Department? What are its top 3 popular products?

Customer Overview: What's the most common customer behavior when you look at the first graph? And what's the percentage of people in that group (hint: use change view segmentation on the right)

Product Overview: How many types of products have been sold less than 10 respectively in the alcohol and beverage department?

User Interview about the general design and their experience

After walking through all the tasks, we would love to interview the participants about their general feedback and experience of our prototype. The questions include:

1. How do you like our design of its general information architecture?
2. Do you feel the design is easy to use?
3. Has it met your needs of reading data and discovering insights?
4. Any other suggestions on our prototype or design? (Anything, such as other functionality, the design style, etc.)

Participant Profiles

Participant	Gender	Data Experience Level (see 4 levels below)	Professional	Age
1	Male	Higher than Average	Construction Cost Manager	26
2	Female	Average	Software Engineer	25
3	Female	Casual	Media Operation Specialist	23
4	Male	Average	Sales Specialist	24
5	Male	Expert	Math Ph.D	25

Classified Table for the data experience level:

1. Expert: Very skillful in reading and monitoring data in daily work.
2. Higher than Average: Be familiar with data and dashboard tools and need to deal with them in daily work
3. Average: Be familiar with data and interactive dashboard tools
4. Casual: Not touch data much in life but have experience in using softwares

We intentionally do the sampling to select the 5 people who meet the requirements below:

1. Have the dashboard or interactive software experience. (the types of tools they use are not limited)
2. Be Willing to provide the information above. (Our test team will keep secret about the information)
3. Have some data skills ideally*

Test report

We tested five participants with different data experience levels and backgrounds. The main test findings are as follows:

Sales overview

Participant Info	Feedback about the flow of the task	Other Feedback
(1) Construction Cost Manager	Heatmap needs a legend Don't know what the data represents - on	I want to see time period of the data, (add some delta - percentage increase than last year) Avg buying frequency - no unit - I don't understand

Higher Experience Level than average	average? Feel confusing Don't need to click on heatmap, hover is enough (since there's no later change when I click it)	I think the heat map is too big and not that useful - since the bottom charts will not be changed - Can they be put on the left or right side of the heatmap? (the order from general to specific 1)order hour 2) order day of week 3) heatmap)
(2) Software Engineer	The color of “Order Day of Week” graph is different from the other	The information of 3rd graph describes overlaps with the heatmap
(3) Media Operation Specialist	What is the purpose of the dashboard? Would prefer to have some contexts of the visualization and the company Tooltip when hovering on the heatmap is helpful	The units of metrics listed on the top of the dashboard are missing, causing some confusions (e.g., the time unit for avg buying frequency - weekly or monthly?) Why include orange/grey color on the same bar chart? Would prefer to have a legend for all the charts. The size of charts can't fit into the screen
(4) Sales Specialist	Heatmap is helpful to show Sunday has most orders, would consider bring more staff	Avg Buying Frequency no unit, have to think over what it represents
(5) Math Ph.D	The context is easy to understand Legend will be more helpful	Pay attention to target customers: people with below-average data skills may prefer charts over stats, so the KPI board on the top may not make sense to them

Customer overview

Participant Info	Feedback about the flow of the task	Other Feedback
(1) Construction Cost Manager Higher Experience Level than average	I don't understand what “the original view” means in the change view dropdown I don't understand what the columns of the heatmap means Refine the axis/column titles	the second row of graphs are too big if not to mention
(2) Software Engineer	In Customer Overview tab, it is better to have a more clear title and filter name	
(3) Media Operation Specialist	Missing units of the frequency is hard to understand.	
(4)	great overall, can serve my needs	

Sales Specialist		
(5) Math Ph.D	What is the time span for the calculation? Would prefer to have axis names (didn't have name for the x-axis)	An observation: misunderstand probability and percentage

Department overview

Participant Info	Feedback about the flow of the task	Other Feedback
(1) Construction Cost Manager Higher Experience Level than average	Top N filter is defaulted at 3 but it's too small and requires extra effort to drag. I suggest to show at least 10 at least For the default, the hand input is better than drag	N/A
(2) Software Engineer	There department filter is less useful because I prefer click the 1st graph bar to filter department	
(3) Media Operation Specialist	Like the linking and interaction of this interaction How to switch from single Aisle to All Aisles?	Find it hard to scroll as there are scroll bars for a single chart (department sale) as well as for the whole window
(4) Sales Specialist	I can see how it works, but Aisle Overview can't show very detailed information if not hover on. Maybe a pie chart is better.	
(5) Math Ph.D	What is the unit for sales? Count or dollars? Curious and feels weird about "missing" and "other" categories	

Product Overview

Participant Info	Feedback about the flow of the task	Other Feedback
(1) Construction Cost Manager Higher Experience	The dropdown department should be renamed as "Department filter" - and be made bigger The less than filter should enable hand	The reorder days (name of column on right bottom charts) isn't clear to me - I should suggest to name it as reorder interval

Level than average	input	
(2) Software Engineer	“Popular Reordered” chart bar size is confusing (has both length and width)	
(3) Media Operation Specialist	The “count” bar is confusing. The title of the chart is “unpopular items” but longer bars give people an impression that it is popular. Expected to have linking effect between the top chart and bottom two charts	The hover effect causes very high page delay, making user experience not as good.
(4) Sales Specialist	too complex, hard to understand at first	font size too small
(5) Math Ph.D	Count of unpopular items is confusing. What’s the real meaning of the count? Putting every items on the hover table is hard to read Expect to check different departments easily but have to go back to the filter at the top, and the table for different departments’ items are too long to scroll to the next What’s the meaning of “rank” on the bottom right chart? The logic of ranking is confusing.	Would you be able to mix the ranking of items of different departments? That would make more sense as people would like to compare across departments.

General Interview				
Participant Info	How do you like our design of its general information architecture?	Do you feel the design is easy to use?	Has it met your needs of reading data and discovering insights?	Any other suggestions on our prototype? (Anything, such as other functionality,
(1) Construction Cost Manager	The general is clear to me but some page’s layout proportion need to be adjusted	Generally yes but some filters are too small	Maybe	N/A
(2) Software Engineer	It is a good design of information architecture	It is easy	Yes	
(3) Media Operation	The dashboard used multi-types of	Too many pictures but too little	It is helpful	

Specialist	visualization method, making it creative	texts/narratives. Would be easier to understand with more explanation.		
(4) Sales Specialist	Very clear	very easy	Yes, i will consider some bonus for delivery people	
(5) Math Ph.D	The overall organization is very logical.	Easy to understand	Yes	Department and product dashboard is not paralleled. Consider merging two dashboards.