

Detailed Results

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December 13, 2013

1 Evaluation of the SAS Visual Analytics tool

Our first phase of evaluation was concentrated on the original SAS tool. For the purpose of the survey, we had selected nine people. 7 of them were students and 2 of them were business professionals without any prior experience with the software.

The list of tasks chosen for the survey was as follows:

1. Change the Color Gradient for the color scale to transition from red to blue.
2. View the North American region on the map.
3. Filter to show Facility Regions that begin with 'A' or end with 'S' and count the number of results
5. Export the current exploration to a pdf file.
6. Get a table view of the cities in United States sorted in ascending order by average facility age.
7. View the facilities located in North Carolina and compare their facility age with their customer satisfaction.
8. If the previous customer satisfaction numbers were below 50
9. Compare the customer satisfaction to the facility efficiency and show a table view of the data.
10. Save the visualization to the My Folder directory.

On completing the tasks, the participants were asked to complete a survey form . The following depicts the graphs that summarize the results for the questions asked:

1.1 Rate Actual Difficulty (1-5 scale)

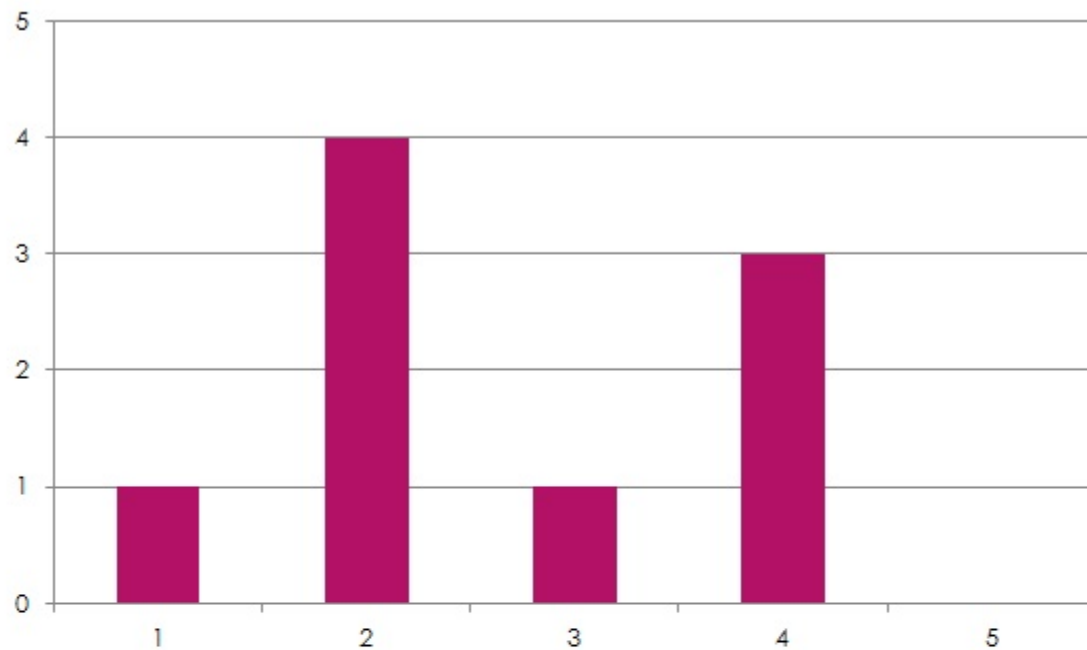


Chart Histogram of Rate Expected Difficulty

Legend :

X Axis :

1 --> Extremely Difficult

5 --> Extremely easy

2 --> Somewhat Difficult

3 --> Neutral

4 --> Somewhat easy

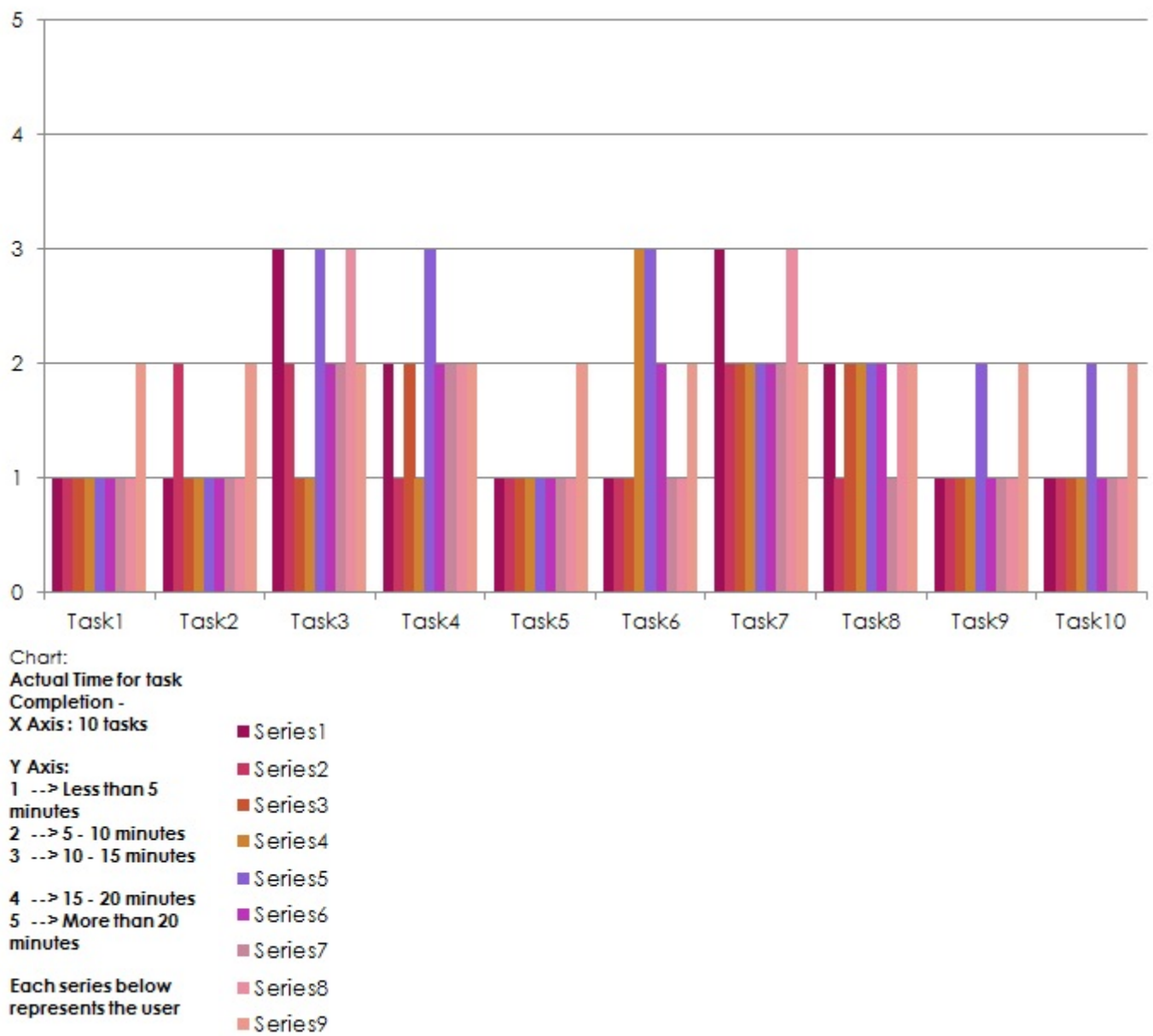
5 --> Extremely Easy

Y Axis: Denotes the count

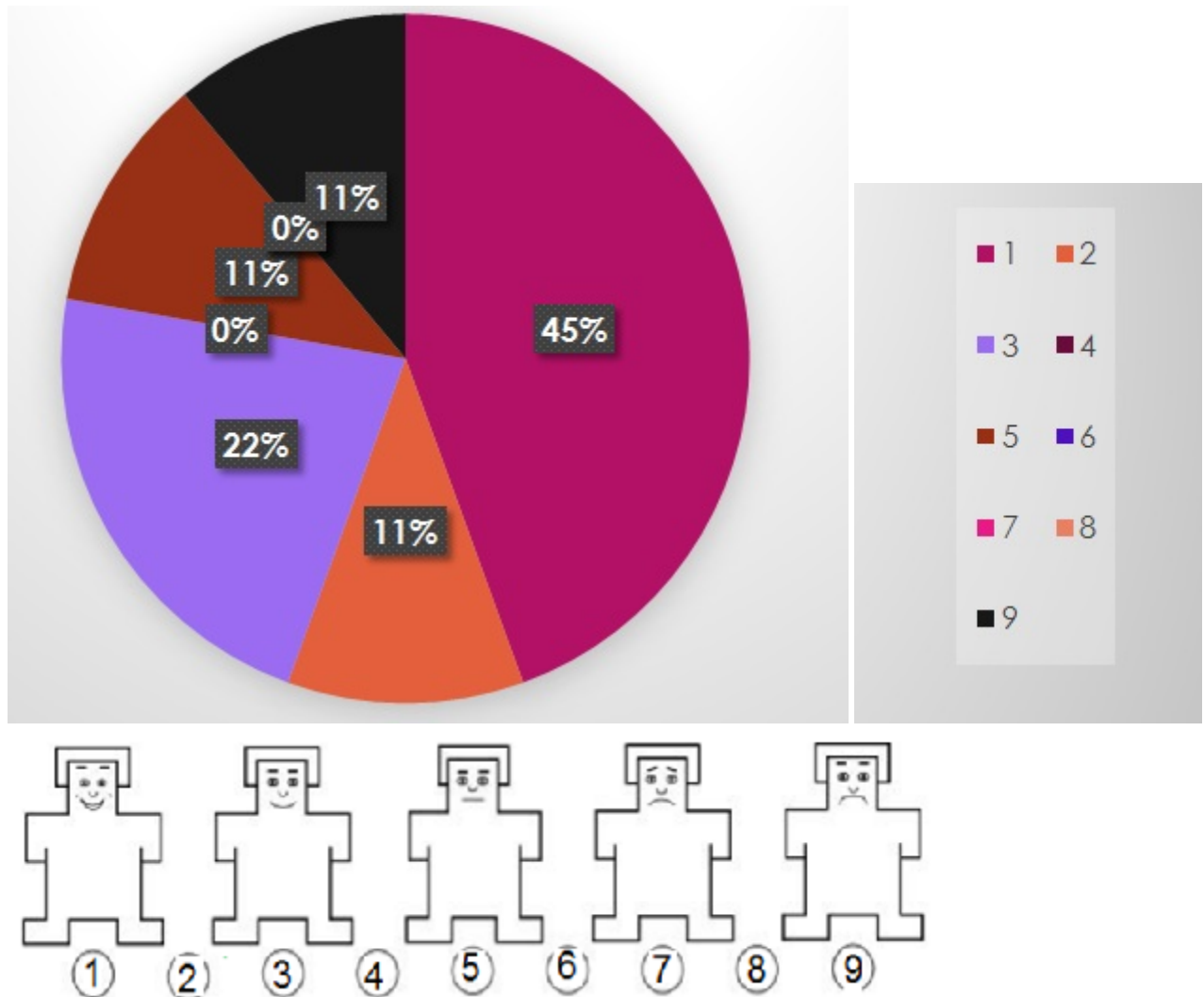
■ Series1

As can be seen from the graph, most of the users found the tasks to be somewhat difficult. The most common feedback was that the UI was a little overwhelming.

1.2 Actual Time for task Completion

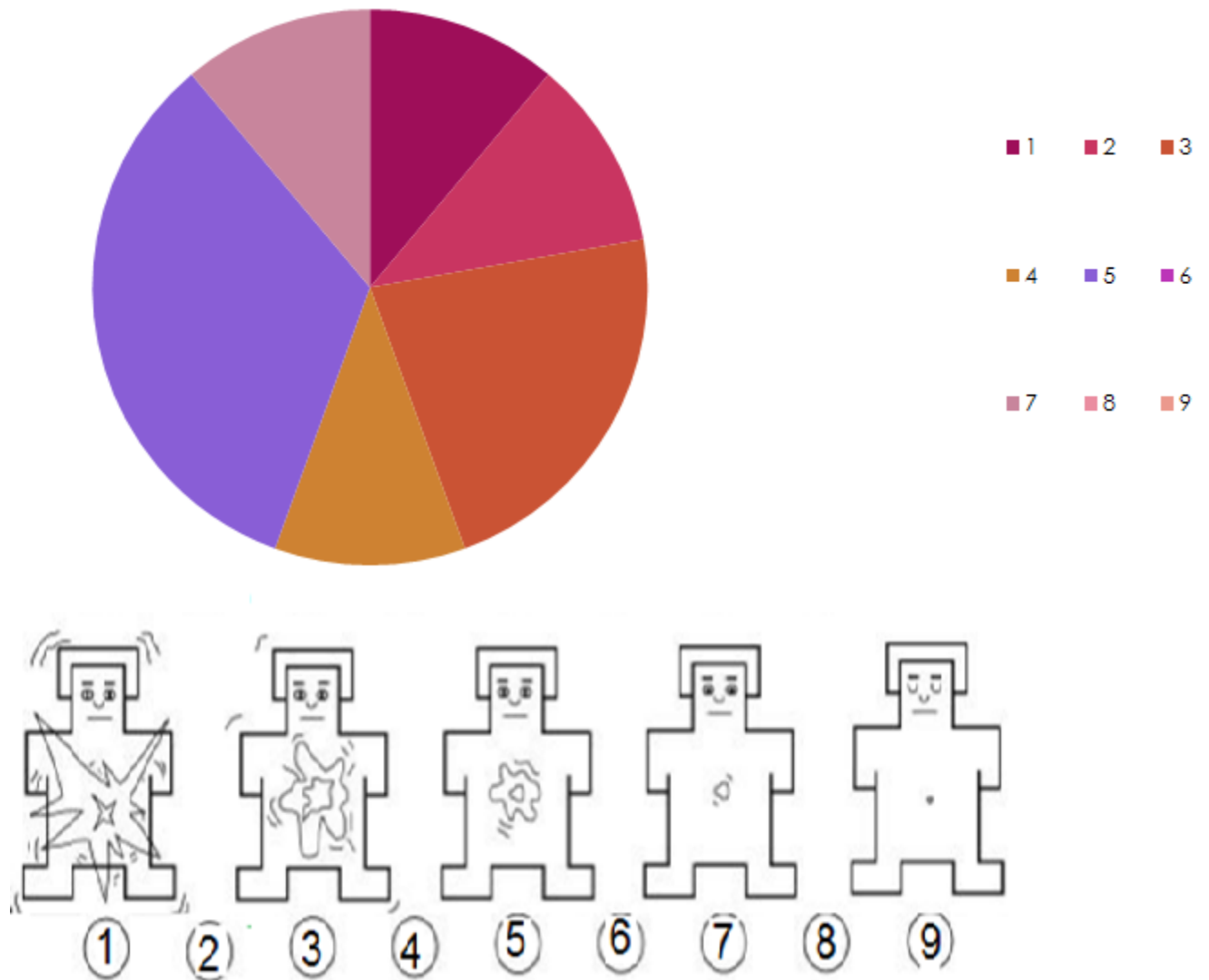


1.3 Level of Pleasure (emotion) based on the 1-9 Scale



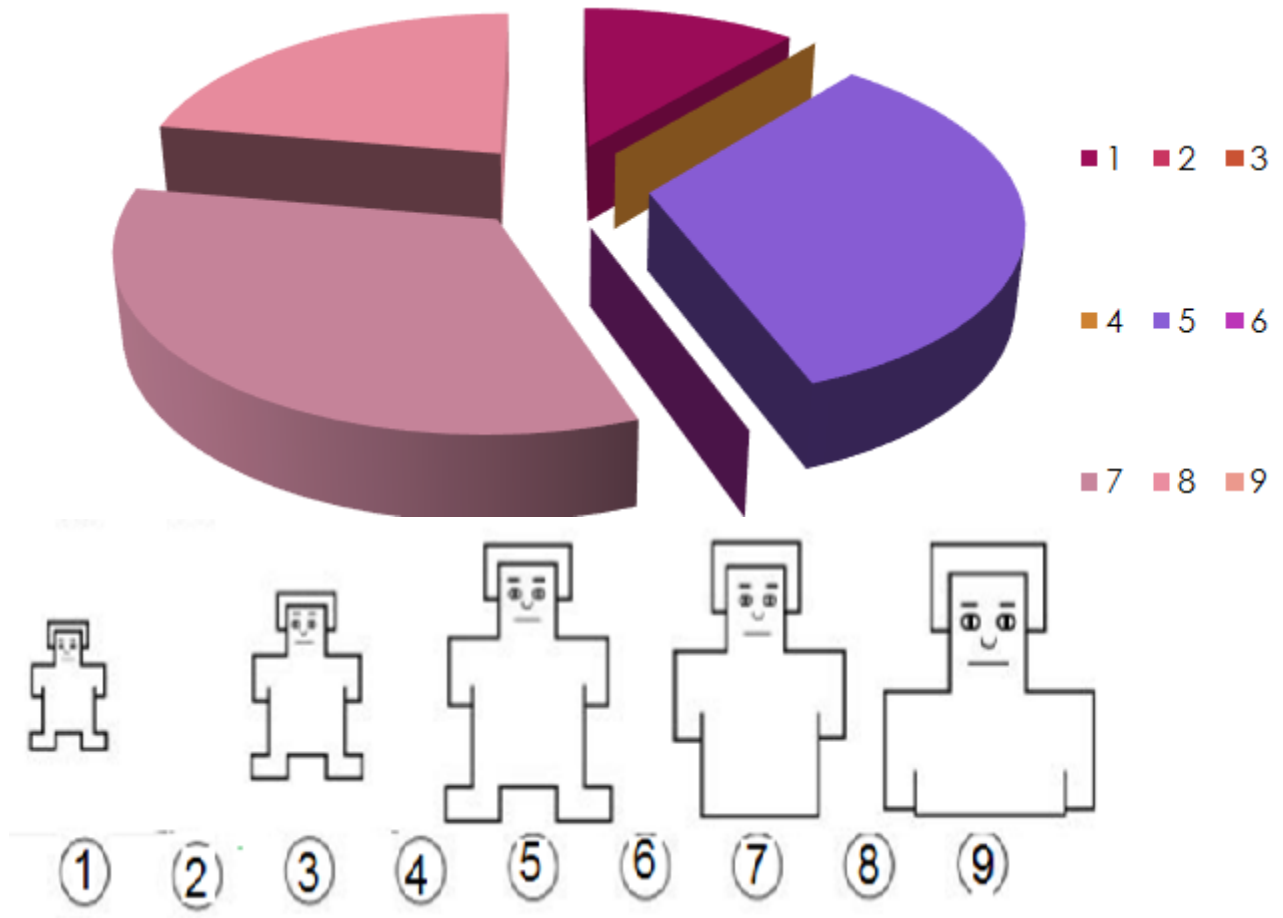
As can be seen from the graph, most of the users were found to be happy mainly because they considered it an achievement for having finished the difficult tasks. Some of them had a tough time completing the tasks and hence were a little unhappy.

1.4 Level of Arousal based on the 1-9 Scale



Some of the participants had the least level of arousal mainly due to the fact that the UI was too overwhelming and they were exhausted trying to complete the tasks. But, majority of the users had a good level of concentration.

1.5 Level of Dominance based on the 1-9 Scale



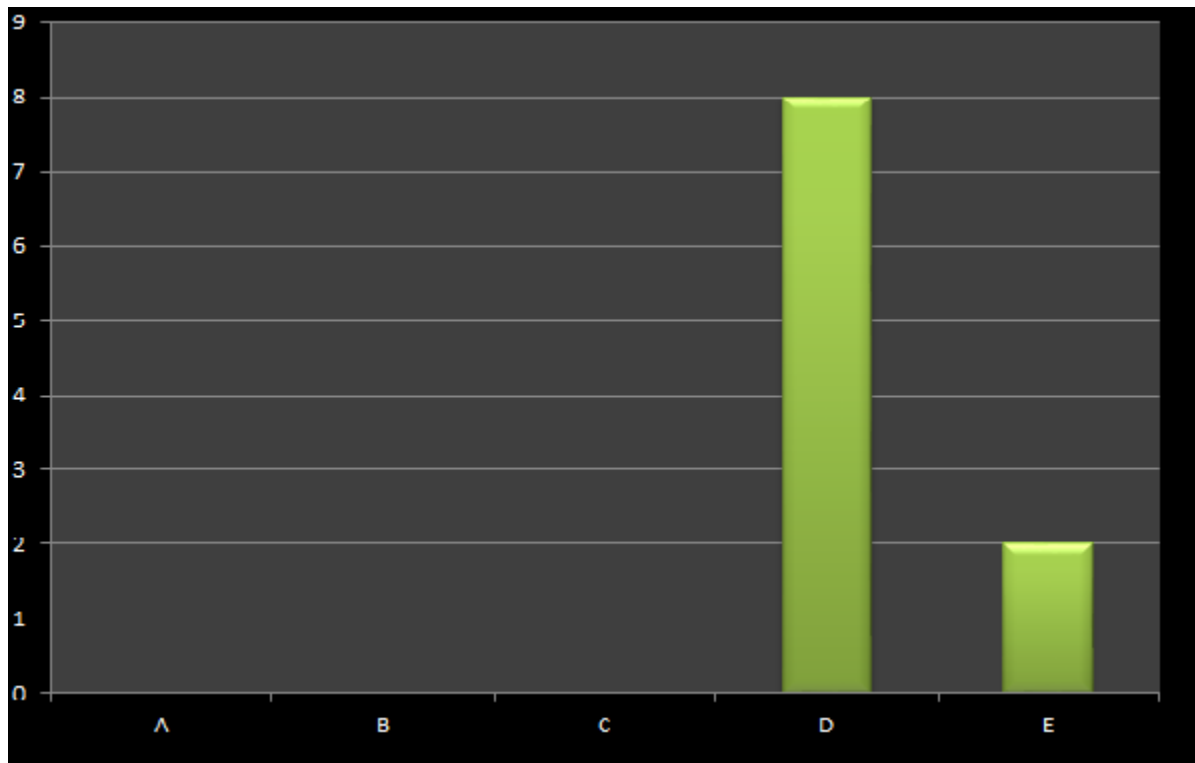
The level of arousal/dominance was neither too high nor too low for most of the participants.

2 Evaluation of the new prototype and comparison of the results

Based on the feedback and reviews on the original UI, we proposed a few changes to the UI and created a prototype. For the purpose of evaluation, we selected a total of 20 participants. They consisted of 5 business professionals, 13 students, and 2 students who had no prior background with software tools.

The following graphs summarize the comparison of results obtained on the original Explorer vs the new prototype.

2.1 Did you like the new layout when compared to the old one



LEGEND:

- A No, old layout looks good
- B I don't see difference
- C Both are equally appealing
- D Yes, new prototype layout looks good
- E Cant tell now, without seeing implementation

80% of the people seemed to be happy with the new layout. They felt the complexity had been reduced greatly. The modular structure of the prototype helped them navigate through the prototype with ease.

2.2 Rate Expected Difficulty(1-5 Scale)

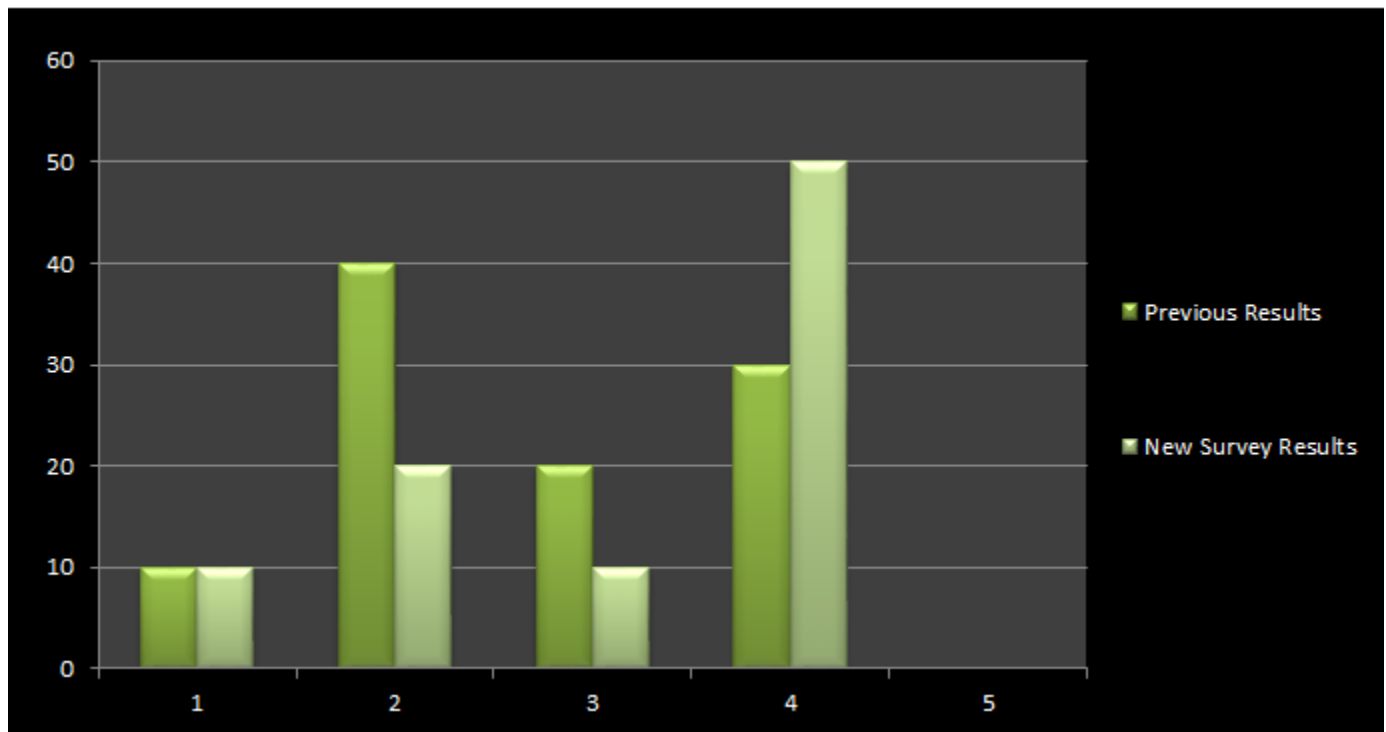


Chart Histogram of **Rate Expected Difficulty (Before actual Evaluation)**

Legend : X Axis :

1 --> Extremely Difficult

2 --> Somewhat Difficult

3 --> Neutral

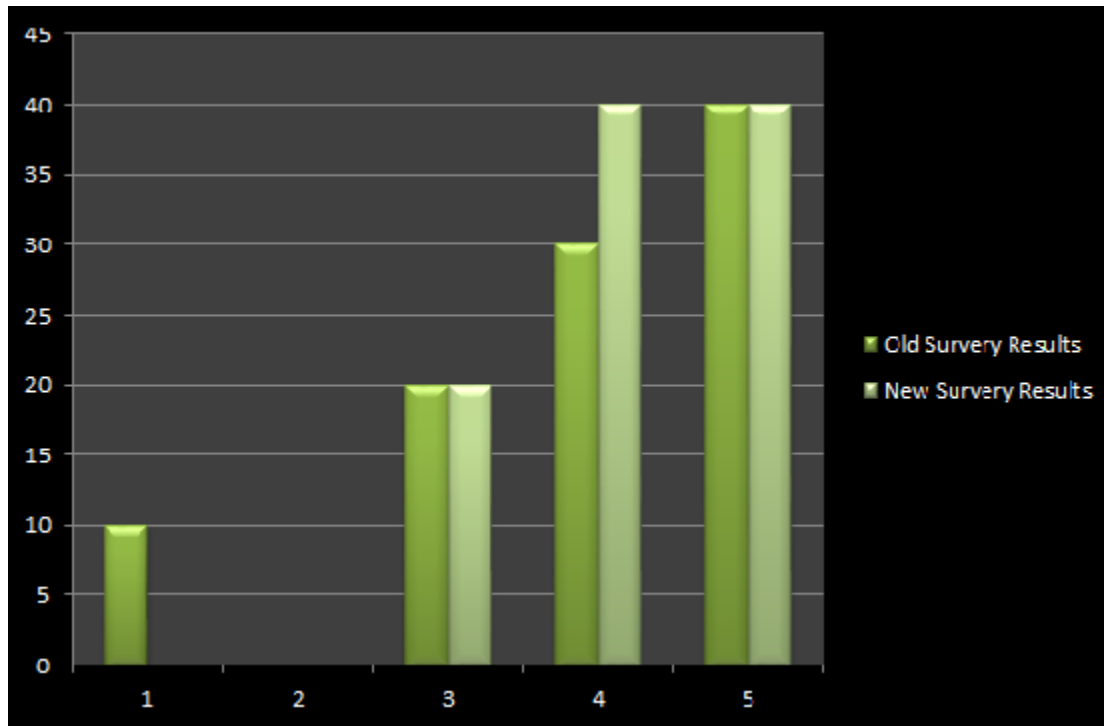
4 --> Somewhat Easy

5 --> Extremely Easy

Y Axis: Denotes the Percentage of count

Since the prototype was much less complex than the original interface, the users found it relatively easy to perform the tasks and the difficulty level was quite low.

2.3 Rate Expected Percentage of Tasks Completed Successfully(Scale 1-5)

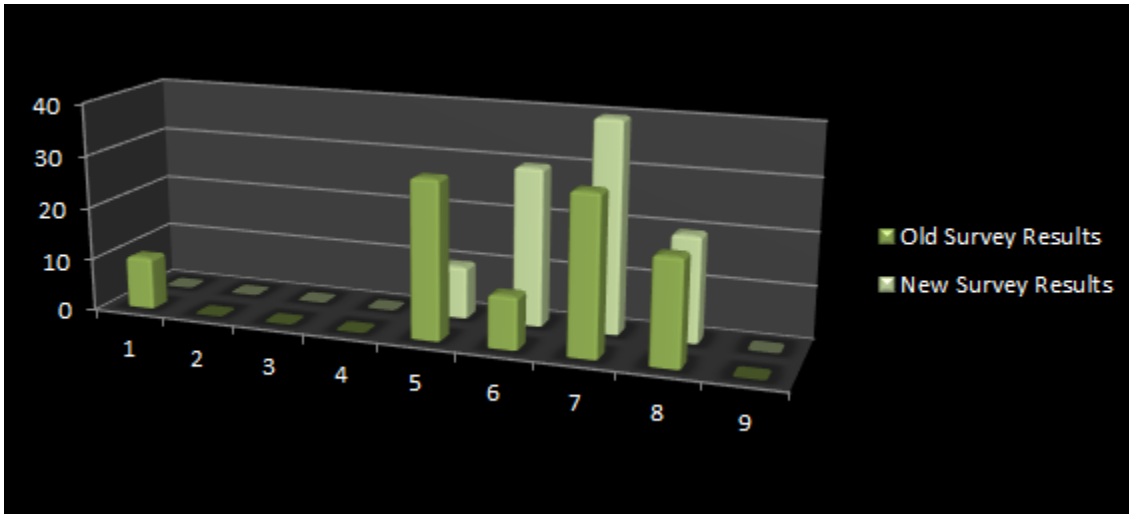


X Axis Legend

- 1: 20% or less
- 2: Between 20% and 40%
- 3: Between 40% and 60%
- 4: Between 60% and 80%
- 5: More than 80%

Almost everyone found it much easier to complete the tasks with the new prototype. The task completion rate went up. This can be attributed to the easy design. The most common feedback that we got from users was that they were really happy to see a much less complex design where they could see all the features clearly. With the original UI, they had a hard time finding options since everything was cluttered within a small space.

2.4 Please rate your current level of emotions based on the following scale: (1-9 Scale) (Before Evaluation)



3 Views and Thoughts on the new prototype

As can be seen from the survey results, all participants were quite happy with the new design. They felt the background color was more pleasing and they liked the fact that the complexity had been reduced drastically. The modular structure and separation of contents was the best feature according to them. The participants felt that if these ideas were implemented in the tool, it would make the software more approachable and usable.