

# **Mini-Project Report W08: Evaluation Report and Requirements**

Team: Team 5

Topic: Making Decisions using Yelp's Crowdsourced Business Recommendations

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## **Summary of Evaluation and Results (Max 3 pages)**

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- **Human Need and Central Tasks:**

Our focus is on addressing the human need to discover new restaurants based on personal preferences. Users may achieve this by looking up a plain list of restaurants based on certain categories, such as type of cuisine, price, and/or reviews. This helps the user find restaurants that suit their tastes, and that they may have not heard of before. In addition, users may discover new restaurants based on location by being able to view restaurants on a map with bubbles that show where the restaurants are. The users can then click on the bubbles to see some information about the restaurant. This will allow the users to discover restaurants in their area that they might not have considered before, and also to decide if discovered restaurants are close enough to visit.

- **Evaluation Goals:**

Our evaluation will address the following evaluation goals:

- How easily can users navigate the existing website interface?
- What factors do users consider when discovering new restaurants?

- **Participant Pool:**

Our participant pool will be people who are looking to try new restaurants. It will focus on students  $\geq 19$ -years-old who are willing to go out to eat on any given day. We will target people who tend to eat out 2 times a week or less. These people will likely have a harder time choosing where they would like to eat due to them not having as much time figuring out what exactly they like. We will isolate a group like this in our call for participation. We will recruit participants primarily by asking people we know, and if needed, asking around UBC. If they do meet the criteria, we will continue the study with them. We aim for at least 10 participants. No formal pre-screening will take place, and instead, we will ask informally, “We are looking for students who are  $\geq 19$  years old who eat out 2 times or less per week.”

- **Protocol:**

The participant will be asked to join a recorded Zoom call (using UBC accounts) that will be stored on Canadian servers for a think-aloud observation study, then to fill in an online questionnaire via UBC Qualtrics afterwards. The recording will be used to ensure the coding sheet is filled out accordingly and for review from other researchers as needed. The participant will be asked to explore the Yelp page through a given scenario and talk us through what factors determine which restaurants they choose. During the observation, we will fill in a coding sheet for quantitative and objective data such as the time to select restaurants and which categories were chosen. Qualitative, subjective data regarding their thoughts will also be recorded. The follow-up survey will contain required quantitative/subjective questions and optional spaces, to expand more about their answers, to provide qualitative/subjective data. Questions will include asking about the most important categories of use and satisfaction of results. Each session should take about 10 - 15 minutes.

- **Evaluation Rationale:**

We decided to use the think aloud observation method because it gives us insight into how a user approaches discovering a restaurant using Yelp. This produced data in the form of screen recordings, audio, and coding sheet answers. Thematic analysis will be used for the

recorded thoughts. This approach will let us see firsthand how smoothly users are able to navigate the website, and which parts of the website users spend the most time on.

To follow-up on the observation, the participant will be asked to fill out a questionnaire with multiple choice and short answers. This will produce data on their satisfaction with the results they found or what they found particularly frustrating, among other things. The data will be subject to visualizations and thematic analysis to be analyzed along with the observation's results. The questionnaire will help further contextualize their actions during the observation and provide insights in how users evaluate Yelp's existing interface.

- **Analysis:**

From observation, users appeared to rely heavily on visual and textual cues (photos of dishes and the menu) to gauge and evaluate a potential restaurant's quality and vibe. These visual elements provided an immediate sense of what to expect and influenced decisions when comparing similar options. A quote by a user, "I chose it because it was highly rated. And it was rated by a lot of people," indicates they were careful to consider both the quality and quantity of reviews and ratings. There were also a few people who checked the negative reviews to identify any shortcomings of the restaurant. Some users noted that they would have liked the reviews higher up on the restaurant pages, while 8/10 participants found different factors like price filters and feature tags helpful in narrowing options (Figure 9).

One of the reoccurring themes that we noticed was poor findability. Many participants seemed to have some standards in mind but did not use the corresponding filters or options for it. This trend can be seen in figure 7, which shows that participants were largely ambivalent about discovering features. In one example, the participant was looking for vegetarian food but did not know about the filter for "vegetarian friendly" restaurants. This then relates to multiple participants commenting on a feeling of the interface being cluttered. In some cases, users were looking to specify business hours but could not locate the feature amongst the large selection of filters. Finally, a lack of clarity in filter meaning contributed to poor findability. As seen in figure 1, a few participants could not understand the pricing filter, and thus, were not able to find the price range they wanted. These issues all contribute to poor navigation.

Another theme was found relating to things users enjoyed. Multiple users mentioned their appreciation for the large number of filters to use while searching. This relates to the goal of important search factors for users. In fact, 6/10 users found that they were able to sort restaurants in ways they wanted to (Figure 3), 8/10 found the large number of filters all useful (Figure 9), and only 1/10 users used no filter at all (Table 1). Relating to the goal of ease of navigation, many users thought that the interface was easy to use, presented well, and that restaurant information was easy to find. The questionnaire found that 10/10 users had no big issues using the browse page (Figure 5). One user also mentioned how they appreciated seeing "the number [and] directions" of the restaurant right up front. A theme of dislikes was also found, with many users struggling to differentiate sponsored posts from real posts resulting in confusion at times, relating to the goal of assessing the ease of navigation. The questionnaire shows that 6/10 users (Figure 4) had difficulties with this while some users didn't see sponsored posts at all. An outlier

user disliked how a new tab opened every time a restaurant was selected instead of staying on the same tab, also relating to the goal of ease of navigation.

- **Conclusions:**

The key strength of the interface is the filter options. In our observations, we noticed most users would interact with the filters when discovering restaurants, as 6/10 users agreed that the available filters on Yelp helped them to narrow down their search range (Figure 2). The filters on Yelp are important to allow users to easily navigate the interface as they directly affect efficiency. However, as seen in the analysis, the existing filters have some weaknesses in findability and learnability which negatively impact how easily users can navigate the interface.

We also found that users rely heavily on photos of dishes when selecting restaurants. In our observations, 9/10 users browsed pictures on the listing (Table 2). In addition to that, reviews and ratings are equally as important to the user. As seen in Table 2, 9/10 and 8/10 users looked for ratings and reviews of restaurants respectively. The users also spent much time reading the reviews of the restaurants. Those two are the most important factors users consider when discovering new restaurants and are important to the effectiveness of the interface.

At the beginning of the study, we were expecting the map feature to be important for users to navigate easily. However, we found that 3/6 users disagreed that the map was useful in finding restaurants (Figure 6) and few users interacted deeply with the map at all. Because our current observation and survey setup were created to observe how, and not if, users interact with the map, we were unable to identify issues with the map feature. Furthermore, users rarely mentioned distance from the restaurant. We assume this is because we asked them to find restaurants in Toronto without giving them a hypothetical home address. Thus, with our current set-up, it is unclear how important the distance factor is when users discover new restaurants.

In brief, the aspects that users consider the most are reviews, ratings, and pictures. Filters are also important, but their use is hindered by poor findability. This extends to other aspects of the interface, which may not be used due to not being communicated properly.

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## **Task Examples and Requirements (Max 1.5 pages)**

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- **Task examples:**

1) John is a 4<sup>th</sup> year university student who is very busy with his schoolwork. He goes out to eat occasionally and is happy to go by instinct when looking for a restaurant. If a place has tasty looking food for him, then that is good enough. He does have some mild considerations however, mainly looking for open restaurants.

When John is hungry, he looks up nearby restaurants and browses lightly until he finds somewhere that is open and looks like it has good food and a decent enough rating. At times, he might have a small preference and looks up specific cuisines such as Italian or Chinese. If he thinks a restaurant looks promising from its description, reviews, or pictures, he takes a closer look at the menu to decide on what he might want. Extensive pictures of the menu items aid greatly in his selection. After selecting a restaurant, he does not change his mind often and will start to go there immediately.

2) Hannah is a first-year university student who loves trying new restaurants when she gets the opportunity to go out with friends. She looks for places that are affordable, have good reviews, and offer a variety of vegetarian options. Hannah enjoys discovering new places in her city but doesn't want to spend too much time researching. She prefers a simple way to compare restaurants to make a quick decision.-

Hannah usually spends 15 minutes or less looking for new restaurants. She first scrolls through photos to see if the restaurant's food options look appetizing. Next, she looks at the restaurant's ratings and number of reviews to ensure the restaurant is popular and liked by others, particularly focusing to see if any negative reviews exist. Hannah also considers that a variety of food options are available since she's vegetarian, but her friends are not. She only wants recommendations based on her specific preferences and gets frustrated when there is too much information at once, making it harder to focus on what matters to her.

- **Requirements:**

Must Do:

- The interface should contain pictures, ratings, and reviews of restaurants (Data requirement)
- Ability to see numbers of reviews and ratings for a restaurant in addition to the reviews and final ratings (Functional Requirement).

Should Do:

- Ability to find filters easily relating to dietary restrictions, business hours, and cuisine (Findability - Usability Goal)
- The interface should be efficient for users to decide on restaurants (Efficiency – Usability goal)

- **Justification for requirements:**

The data and functional requirements for the interface to contain ratings, reviews, their numbers, and pictures of restaurants, then display them to users, is something the design must strive to meet. If these requirements are not met, users like Hannah or John will have a hard time deciding on what restaurant they would like to eat at as they won't have a good frame of reference for what is popular/liked. A lack of final ratings for each restaurant would result in a less efficient experience for Hannah as she'll need to read through individual reviews. If she could only see the final rating and not the number of them, she would have no way of knowing if the restaurant has been vetted by many people. To meet the expectations that Hannah has for recommendations and satisfy this requirement, the design must take steps to display both the average rating and number of ratings for a restaurant in a clear way. In the case of John, pictures, ratings, and reviews are what he uses to decide, so if they are not there and available to see, he would be unable to select a restaurant.

The findability requirement of being able to find filters that the user desires is something the design should strive to meet. If this requirement is not met, users like Hannah will be left frustrated and dissatisfied as they will not be able to find a restaurant that meets their needs or preferences easily. The filter for her dietary restriction, in this case being vegetarian, existing would not be enough if Hannah can't find where the filter is, as we know she tends to get

frustrated with cluttered screens. To meet the expectations that Hannah has for recommendations and satisfy this requirement, the design must take steps to highlight where the filters for dietary restrictions can be found. In the case of John, this requirement lets him filter for his desired cuisine when he wants to and makes sure he does not go to a closed restaurant.

The requirement of efficiency is due to John's need to look for restaurants quickly when he just wants to eat something. An efficient interface will let him more easily find a restaurant and, thus, reduce negative feelings from being made to struggle with an interface while wanting to eat. In Hannah's case as well, an efficient interface will recommend restaurants based on her specific preferences, thus not making her frustrated if irrelevant information was given instead.

# **Appendix A**

## **Figures, Tables, and Evaluation Instruments**

## Appendix A. (no page limit) – goes in same pdf as report

### A.1) Figures and Tables

#### Response Category

Strongly agree   Somewhat agree   Neutral   Somewhat disagree   Strongly disagree   NA

#### Survey Questions

Figure 1: The 'price' filter is clear with its options

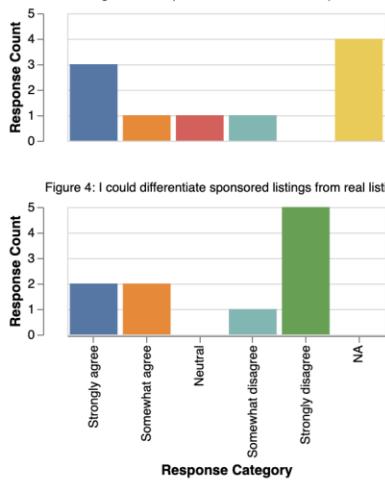


Figure 2: The filters available on Yelp are helpful to narrow down restaurant options

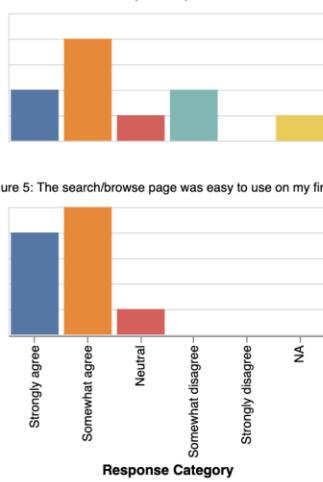


Figure 3: I was able to sort the list of restaurants in all the ways I wanted to

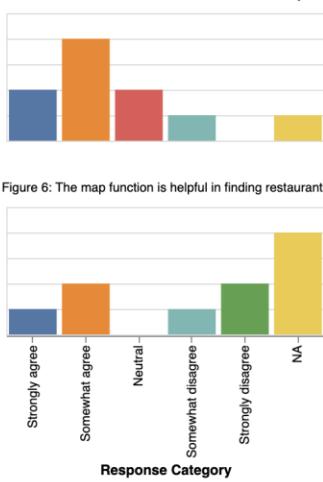


Figure 4: I could differentiate sponsored listings from real listings

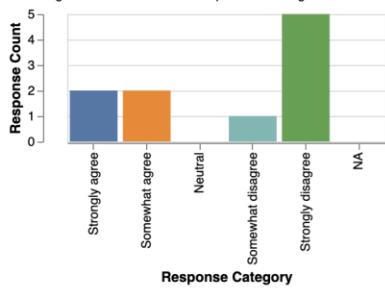


Figure 5: The search/browse page was easy to use on my first try

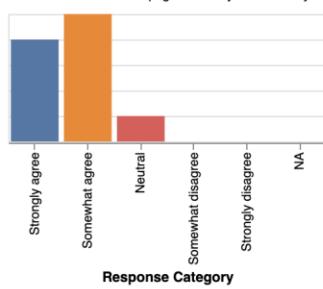


Figure 6: The map function is helpful in finding restaurants

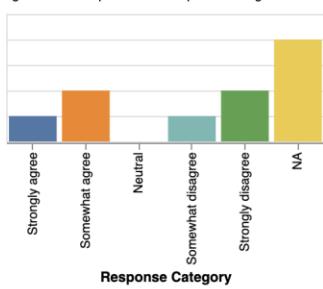
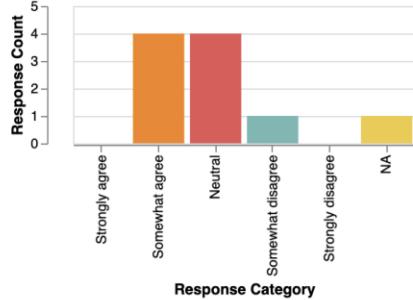


Figure 7: Discovering new features to use on Yelp is easy



The restaurants are sorted by 'Recommended' by default.  
Which option do you think is the most reasonable default sorting?

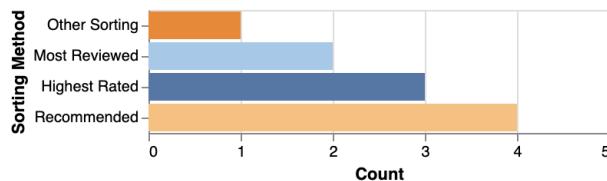


Figure 8: Sorting Method Preference

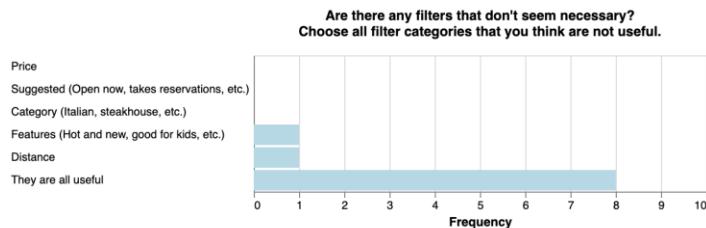


Figure 9: Filters Considered Unnecessary by Participants

Filter	Count
Suggested	<b>5</b>
Price	<b>4</b>
Category	<b>4</b>
Distance	<b>3</b>
Features	<b>2</b>
No filter	<b>1</b>

**Table 1: Counts of Filters Selected**

Action	Count
Checked reviews	8
Checked ratings	9
Browsed using map	2
Browsed pictures on a listing	9
Accessed some part of filter menu	7

**Table 2: Number of people (of 10) per action**

## A.2) Evaluation instruments

Coding Sheet – In the notes section, fill in what they used/searched (if applicable)

Location/address given to observee	N/A	
Selected a restaurant		
Accessed filter menu		
Used price sorting		
Used category sorting		
Used feature sorting		
Used distance sorting		
Used search bar		
Checked reviews		
Checked ratings		
Changed the 'Sort' setting		
Picked a filter off the entries on tile		
Clicked 'more' on the previewed reviews		
Browsed using map		
Hovered the map icons		
Browsed pictures on a listing		
Accessed restaurant's website link from Yelp		
Click on a sponsored listing		
Which part of the listing do they click		Name:      Image:      Background:      More:

	#	Notes:
Overall time taken (minutes)		

Number of restaurants found (can pick one or multiple)		
Number of filters used		
Number of times filters readjusted (after initial set)		
Selected restaurant's recommendation number		
Distance of furthest restaurant selected (km)		
Number of restaurants found using the map		
Number of additional pages (past page 1) visited		
Number of restaurants skipped		

Other comments:

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## Contributions

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Please summarize the individual contributions of each member and the total number of hours they worked last week.

Name	Contribution (1 or 2 sentences)	Work hours
Jesse Woo	Helped perform analysis of data. Helped write for analysis, task examples, requirements, and justifications plus overall edits.	10 hours

Sadia Khan Durani	Helped with thematic analysis, created the figures and a table for the data from the questionnaire, revised previous deliverable sections, wrote a task example, and made overall edits/revisions to the report.	10 hours
Arshvir Bhandal	Helped with thematic analysis, helped write requirements and justification for requirements, helped write data analysis, revised work.	9 hours
Kelsey Chua	Helped with performing thematic analysis, writing the analysis, overall edits	7 hours
Calvin Zhang	Writing conclusion, added references to graphs, combined appendix B	6 hours