What Kinds of Experiences Do you Desired? A Preliminary Study of Desired Experiences of Contributors in Location-Based Mobile Crowdsourcing

ANONYMOUS AUTHOR(S)*

Mobile crowdsourcing enables its users to learn about location-related information from people with diverse experiences and opinions. However, little research investigates the information quality most relevant to the location-related questions expected by the users from the crowd, as well as the experiences users expect the contributors to possess to answer these questions, respectively. We conducted an interview study (N=22) that extracted five information properties of location-based questions - objectivity, relativity, specificity, temporal regularity, and variability. Based on the perception of the characteristic of the requested information characterized by these properties, participants desired one to several kinds of ten main qualities of the information, and of seven main aspects of desired experience from contributors - period of residence, quantity, recency, regularity, variety, professional relevancy, and engagement in commentary, respectively. A follow-up survey study (N=139) quantifies the characteristics of a list of location-related information according to their information properties that respondents perceived from them.

CCS Concepts: • **Human-centered computing** → **Empirical studies in collaborative and social computing**; **Empirical studies in ubiquitous and mobile computing**.

Additional Key Words and Phrases: mobile crowdsourcing, location-based, review, information quality

ACM Reference Format:
Anonymous Author(s). . What Kinds of Experiences Do you Desired? A Preliminary Study of Desired Experiences of Contributors in Location-Based Mobile Crowdsourcing . In . ACM, New York, NY, USA, 10 pages.

1 INTRODUCTION

Mobile crowdsourcing has been commonly leveraged to collect location-related information for various applications, from scientific purpose [20], commercial purposes [5], to supporting local community [4, 14]. Crowdsourcing location-related information enables people to learn from collective information and opinions about specific places from diverse experiences and points of view. However, diversity also inevitably introduce discrepancies among them. While presenting disagreeing opinions may make users find the platform less biased [7], not knowing upon what basis (i.e. the experiences and the knowledge) the provided opinions and/or information is formulated and what relevant experiences the contributor possess to formulate those opinions may not help users know which opinions and information are more applicable to them. Numerous studies have suggested that information seekers judge usefulness and helpfulness of online information based on the perceived information qualities of the encountered information (e.g., [12, 15, 18, 22, 23]), such as reliability, recency, understandability, relevancy, etc., for which information source is one of the crucial basis for making such judgement [21, 26]. Sometimes, information seekers seek information from specific sources, e.g., people with a specific background and/or experiences, to fulfill their specific needs [13, 25, 26]. Nevertheless, there is little understanding about what information qualities are deemed as the most relevant and desirable by users of location-based crowdsourcing platforms (e.g., Google Local Guides[1]), and as a result, what kind of experiences these users would expect the contributors to possess to provide the information of which the qualities fulfill their needs.

[1] Local Guides was launched by Google to garner user contributions to Google Maps, and provides its contributors with various perks and benefits for this work.

Inspired by prior research on matching task workers and crowdsourcing tasks based on the characteristics of the tasks and the workers' activeness, preference, expertise, and cognitive abilities [13, 25], and given that information source is vital to information seekers, in this study, we seek to answer three research questions. RQ1: For users on location-based crowdsourcing platforms, what characteristics do they perceive from various kinds of location-related information; RQ2: what qualities of the location-related information they are seeking do they think matter to them, respectively? And RQ3: what kinds of experiences do these users expect or desire the contributors to possess to provide these kinds of location-related information, respectively?

To answer these questions, we plan to conduct a three-phase study. Currently, we have conducted the first two phases. An interview study and a survey study. Specifically, we conducted semi-structured interviews with 22 participants to obtain preliminary insights for the three research questions. From the interview, we have identified ten information qualities, reliability, temporal relevancy, degree of context, enjoyability, novelty, specificity, understandability, completeness, recency, and objectivity, that participants commonly desired for location-related information. Furthermore, whether these information qualities were desired depended on the characteristics of the information participants perceived, which was characterized by five information proprieties - objectivity, variability, periodicity, relativity and specificity - perceived by the participants. According to the characteristics of the location-related questions and the information qualities they desired for these questions, seven aspects of experiences - length of residence, quantity, recency, regularity, variety, professional relevancy, and engagement in commentary - were expected and desired by the participants that the contributors should possess to answer the questions.

In the second phase, we clarified each of the information properties that users would perceive from various location-related questions via a survey study (N=139). The study showed a list of location-related information respondents would most often wanted to obtain via crowdsourcing. Then it showed how respondents perceived the location-related information items in each of the five properties. We show that that while some location-related information items were perceived as similar in many properties, others were perceived as quite distinct from each other. This may explain why our participants in the interviews expected different aspects of quality for the obtained information and, as a result, desired different kinds of experiences that the contributor should possess to answer these location-related questions.

2 INTERVIEW

2.1 Participants

We conducted semi-structured interviews with 22 participants (12 males; 10 females) who had experiences in seeking and/or providing location-based information online. We recruited the participants through several Facebook Groups aimed for recruiting research participant in our country. Participants were provided with NT$300 as study compensation. Participants' ages ranged from 21 to 50 years old.

2.2 Procedure

In the interviews, we asked participants what kinds of information they had experience in obtaining or would hope to obtain from the crowd on a location-based crowdsourcing platform or online forums, respectively. Then, we asked them what kinds of experience and backgrounds they would expect or desire the contributors on the platforms to possess. We aimed to prompt participants to reflect on the similarities and contrasts in the experiences they desired from the contributors for various kinds of location-related information. Through the comparison and contrasting process, we hoped to identify the key properties of the location-related information they were commonly seeking, the information

Fig. 1. A pile of cards that offered various examples of location-related experiences and information.

qualities they expected from the obtained information, as well as the experiences they desired from the contributors, respectively. To facilitate and diversify these comparisons, we provided a pile of cards (as shown in Figure. 1) that offered various examples of location-related experiences and information. The purpose of these cards was to provide participants with some materials as inspirations or cues that helped them recall their prior experiences in acquiring and seeking the same, similar, or other different but relevant information. The development of cards was iterative–new cards were added to the pile whenever the researchers learned new types of location-related experiences or information that was mentioned in the interview. A total of 23 types of location-based information and 11 types of experiences cards was developed. All the interviews were conducted via online video conferences with screen-sharing, in which participants and researchers viewed the pile of cards on Conceptboard[2], an online collaborative whiteboard software. The interviews were video-recorded and transcribed. Each interview lasted 1.5-2 hours.

2.3 Data Analysis

We conducted a thematic analysis of our interview data using the qualitative analysis software MAXQDA[3]. Generation of the codebook was guided by our research questions - identifying the key properties of location-related information participants would hope to obtain via crowdsourcing, the information qualities they expected from the information, and the aspects of experiences they desired the contributor to possess. To ensure the reliability of our coding process, three researchers first coded interview transcripts from three participants independently and discussed the codes together. The researcher explained the word they chose to use, discussed the similarities and differences in their interpretations, and decided the code schema. For each coded transcript, the coders compared and discussed the discrepancies and clarity of the codes until full consensus was reached. After all the discrepancies were resolved, they updated the codebook.

2.4 Preliminary Insights from the Qualitative Analysis

Our preliminary results from the qualitative analysis highlighted that the characteristic of the requested location-related information was crucial to determining which quality of information participants cared about on the obtained information and what kind of experience participants desired the contributor to possess to offer the requested information. We provide more details below.

[2] Conceptboard is an online whiteboard allowing people to collaborate. https://conceptboard.com/
[3]https://www.maxqda.com/

2.4.1 Key Properties of Location-Related Information. We extracted five key properties of the information that played a crucial role in influencing participant's perceived characteristics of the location-related information:

- *objectivity* - the extent to which the description of the location-related information tended to be objective vs. subjective;
- *relativity* - the extent to which the description of the location-related information item tended to be in relation to or in comparison with the information of the same/similar kind at different locations;
- *specificity* - the extent to which the description of location-related information tended to be applicable to a specific item vs. to general range, including but not limited to location, period;
- *temporal regularity* - the extent to which the description of location-related information tended to change regularly vs. irregularly in time,
- *variability* - the extent to which the description of the location-related information tended to be variable vs. stable.

2.4.2 Desired Kinds of Qualities of Location-Related Information. According to the perceived characteristic of the information, we found that participants desired different kinds of information quality for the obtained information and different aspects of experience of the contributors that they deemed to matter to the usefulness and applicability of the information. In particular, there were ten main kinds of information quality participants commonly mentioned in the interviews, including:

- *completeness* - the extent to which the information incorporates all key aspects of information and is of sufficient breadth and depth for the task at hand;
- *degree of context* - the extent to which context is provided for the information;
- *enjoyability* - the extent to which the consuming of the information object is regarded as enjoyable and fun;
- *novelty* - the extent to which the content of the information is new to the user or different from what the user has known before;
- *objectivity* - the extent to which the information is unbiased and impartial;
- *recency* - the extent to which the information is sufficiently up-to-date for the task at hand.
- *reliability* - the extent to which the information is correct and reliable;
- *specificity* - the extent to which the information is specific to a particular item, topic, location, time appropriate to the user's need;
- *temporal relevancy* - the extent to which the information satisfies the user's need in terms of time;
- *understandability* - the extent to which the information can be comprehended by the user.

2.4.3 Desired Aspects of Experiences from Contributors. In getting the information that fulfilled their various kinds of desired information quality, participants named various aspects of experiences that they thought, if the contributors possessed, made the information they offered more useful and applicable. The seven main aspects of the experience participants often mentioned were:

- *length of residence* - how long the contributor had resided, lived, or stayed around the described information items to be able to observe and encounter the information item:
- *quantity* - how many times the contributor observed and encountered the described information item;
- *recency* - how recently the contributor observed and encountered the information item;
- *regularity* - how regularly the contributor observed and encountered the information item;

- *variety* - at how many different and diverse locations the contributor had observed and encountered the same or similar kinds of information item;
- *professional relevancy* - what kind(s) of professional experience the contributor possessed relevant to the information item and how much the experience was; finally,
- *engagement in commentary* - how often and how proficiently the contributor offered their comments, opinions, and reviews of a location-related information item publicly.

2.4.4 Desired Information Qualities and Desired Experiences from Contributors are Specific to the Information Properties. Notably, participants mentioned a number of specific associations between certain types of location-related information, certain kinds of information quality, and certain aspects of experiences. For example, for information items they perceived to be in both high temporal regularity and high variability, such as crowdedness (e.g., easily crowded during certain periods but within that period still possibly changing rapidly), participants deemed the description a contributor offered as highly desirable if the information was highly recent and informed them of when the location would and would not be crowded, respectively. For these, they mentioned that it would be the most ideal if the contributor had regular and long period of observations of the crowdedness of the area to tell the temporal regularity, and if he or she had visited the place recently to tell its most up-to-date condition. In contrast, for information items they perceived to be in high temporal regularity but low variability, such as traffic congestion and weather in an area, they mainly desired the description of the area to inform them of the periods during which traffic congestion would and would not happen, during which the weather would be easily rainy, sunny, gloomy, etc, respectively. As a result, they mainly desired the contributor to have long and regular observations of the information items, regardless of how recently the observations were.

For information items they perceived as highly subjective (e.g., food, attitudes, atmosphere), they desired the information to be reliable and cover as many aspects and details as possible (i.e., high completeness), such that they could better judge the usefulness of the information. As such, they expected the contributor to have extensive and high quantity of observations, as P20 explained, if the experiences were not extensive enough, the offered information *"could be only a one-time thing, even an outlier"*. They mentioned that it would be even better if the contributor had been engaged in offering commentary; it was because they perceived that this experience would allow the contributor to know which aspects of their subjective experiences users would find more useful and interesting to them. On the other hand, when they perceived the information as also highly relative (e.g., more delicious than it at other restaurants, less crowded than it during other periods), they desired the offered information to also contain more context to describe the information item, and as a result, hoped the contributor to have high variety of experiences so that they were able to make comparisons; even better, they desired the contributor to have the expertise or professional skills related to the information item (e.g., food critic, chef, for food-related information).

Finally, for some information that was perceived to be highly specific, such as Wi-Fi connectivity, opening hours, menus, at a specific location or during a specific period, participants preferred contributors who have visited that specific location and during that specific period many times, assuming that these contributors would more likely know specific details about the place; in contrast, when the requested information was general, such as about an entire region, the participants preferred contributors who have resided in the area for a long time, assuming that these contributors' knowledge of the area was more comprehensive and had larger coverage; it was because they perceived that some information would be exclusive to the residents and unknown or hard to access for visitors, such as secret scenes, shortcuts, parking lots, etc.

To sum up, the interview results showed that participants considered different aspects of qualities and contributors' experiences respectively for different kinds of location-related information. The requested information could be described with five properties, and different combinations of them seemed to correspond to different kinds of information qualities that participants deemed matter to them; consequently, they desired different aspects of location-related experience from the contributors. However, thus far, we still lacked quantitative evidence that confirms the relationship among them. To identify their relationships, yet, we found it desirable to first survey the top list of location-related information items that potential users of a mobile crowdsourcing platform would often need from the crowd, as well as how users perceived the characteristics of various location-related information items. Having such information would allow us to design an online experiment that asks users of their desired information quality and experiences of the contributors for specific location-related items in our next step. We describe the survey in the section below.

3 SURVEY

As mentioned earlier, before we conduct an online experiment to investigate the relationship between the identified factors - information property, information quality, and experience of contributors - we first surveyed location-related information items that would be representative enough (i.e., most frequently sought by users of mobile crowdsourcing platforms, having appeared in the literature of mobile crowdsourcing) to be included in the experiment. We developed an online survey that included location-related information items that: 1) both have been adopted as a crowdsourcing task in the mobile crowdsourcing literature and 2) commonly mentioned in our interview. These information items included food review[16], product supply [10, 14], product price [8, 14], crowdedness [10, 14, 16], event-related information [1, 10, 16], condition of public equipment [9, 14, 24], public issues in a region (pollution, noise, safety, etc.) [3, 19], parking availability [2, 10], scene description [11, 17, 24], and recommended points of interest (POI) in a region [6, 16].

3.1 Procedure

The online survey was implemented using SurveyCake[4] The survey items included: (1) basic demographic information, (2) frequency of looking for the aforementioned location-related information items using a 7-point Likert scale (1=low, 7=high), and (3) perceived characteristic of the information in six properties; the sixth property was *time-specificity*, which we extracted it from the specificity property to make it separate from location specificity). The survey contained 75 questions and took about 15 minutes to complete.

3.2 Participants

The online survey was advertised on a number of Facebook Groups and Pages featured for local residence of a number of cities in our country. We chose to advertise the survey in these Groups and Pages because we assumed people who joined these networks were interested in receiving local-related information. The survey was open between December 2021 and January 2022. We offered a NT$200 raffle for every five responses we received.

3.3 Results

We received in total 199 responses. After data cleaning, 60 responses were classified as invalid, resulting in 139 valid responses. In the final dataset, 56.1% of our respondents were female, 41.7% were male, and 2.2% were not willing to disclose their gender. The participants' ages were between 20 and 56 (M=29.23, SD=7.98).

[4] SurveyCake provides tools to build online questionnaires and data results visualization. https://www.surveycake.com/

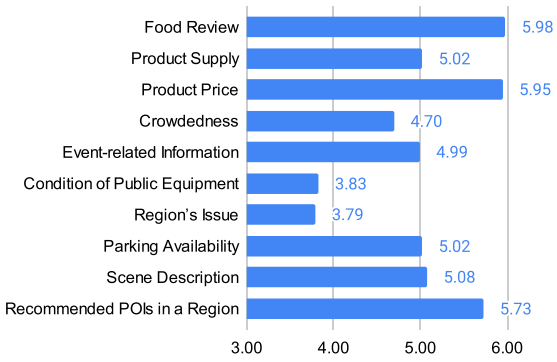

Fig. 2. Frequency of the location-related information respondents wanted to obtain from the crowd

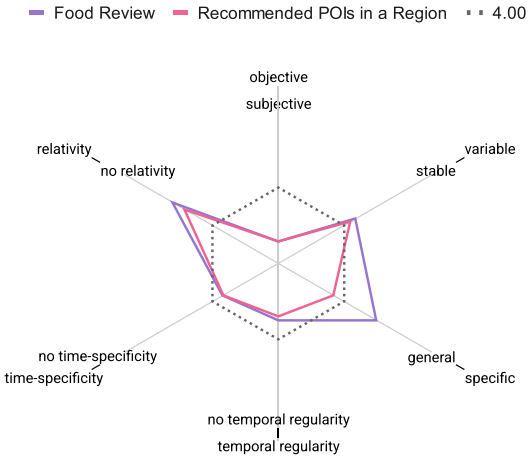

Fig. 3. The scores distribution of food review and recommended points of interest (POI) in a region on 6 properties.

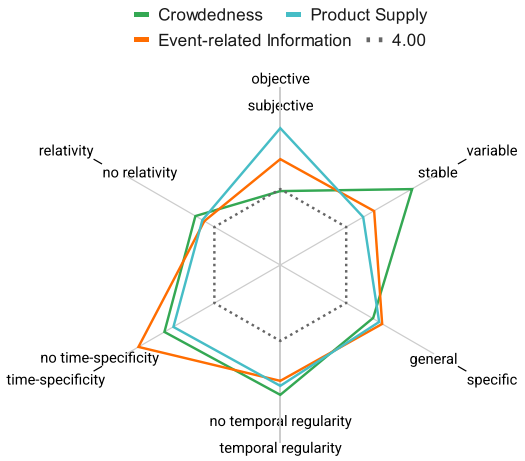

Fig. 4. The scores distribution of crowdedness, event-related information, and product supply on 6 properties.

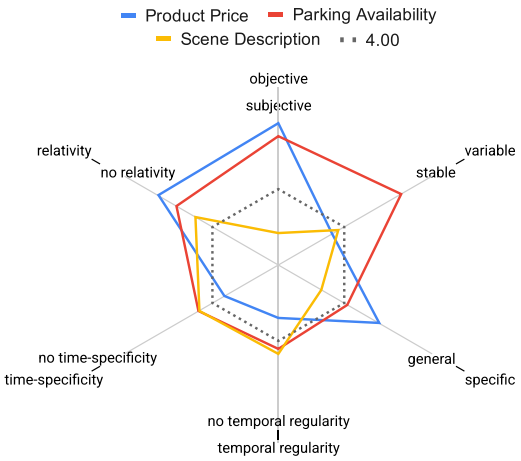

Fig. 5. The scores distribution of product price, parking availability, and scene description on 6 properties.

3.3.1 Most Frequently Sought Location-Related Information Items. As shown in Figure 2), the top three location-based information that our respondents the most frequently wanted via the mobile crowdsourcing platform was: food review (5.98), product price (5.95), and recommended POIs in a region (5.73). In contrast, public issues in a region (3.79) and condition of public equipment (3.83) were wanted the least frequently wanted from the platform.

3.3.2 Characteristics of the Frequently Sought Location-Related Information Items. Next we examined how the respondents perceived the characteristics of each of the frequently sought location-based information item in the six properties. The results are shown from Figure 3 to Figure 5, which included all information items but the two least sought information. The average scores of all information items are shown in Table. 1. These information items were displayed in different figures according to their similarity to one another in their perceived characteristics. Specifically,

Table 1. The Average Scores of Every Information Item on Six Properties.

	Objectivity	Variability	Specificity	Temporal Regularity	Time-specificity	Relativity
Food Review	2.94	4.25	4.73	3.63	3.77	4.91
Product Supply	5.19	4.38	4.76	4.88	4.93	4.28
Product Price	5.29	3.72	4.79	3.54	3.73	5.24
Crowdedness	3.96	5.50	4.60	5.06	5.14	4.43
Event-related Information	4.58	4.63	4.81	4.78	5.73	4.24
Condition of Public Equipment	4.54	4.39	4.11	3.48	3.91	4.13
Public Issues in a Region	4.00	4.75	3.27	3.31	3.40	4.46
Parking Availability	5.03	5.29	4.08	4.15	4.32	4.83
Scene Description	3.12	3.87	3.48	4.25	4.29	4.40
Recommended POIs in a Region	2.93	4.14	3.75	3.54	3.76	4.63

food review and recommended POIs in a region (Figure. 3) were similar to each other in that they both were perceived as in low objectivity (i.e., highly subjective) and in high relativity, respectively. On the other hand, they were perceived to in neutral temporal regularity.

In contrast, crowdedness, product supply, and event-related information were similar to one another at least in some aspects (Figure 4) but were also unique in one particular aspect. For example, all the three information items were perceived as medium to slightly high relativity, in high specificity, and in high temporal regularity, respectively. However, product supply received especially high objectivity; crowdedness received especially high variability; and event-related information received especially high time-specificity.

The rest of the information items were perceived as distinct from all of the other items, shown in Figure 5. For example, parking availability was the only item perceived as highly variable, objective, and relative at the same time; scene description was perceived as slightly high in relativity, time-specificity, and temporal regularity, but particularly low in objectivity and specificity, respectively. Finally, product price was perceived as highly objective, relative, and specific, but as particularly low in variability, time specificity, and temporal regularity, respectively.

4 CONCLUSION AND FUTURE WORK

Both our interview and survey results showed that while some information items were perceived as similar in many aspects, more types of information items were perceived as distinct from each other. This, according to the interview results, is likely to make users to expect different aspects of quality for the obtained information and, as a result, desired different kinds of experiences that the contributor should possess to answer these location-related questions. To proceed to answer our research questions, i.e. our next step is to conduct an online experiment to clarify and verify the relationship between information property, information quality, and experiences of the contributor, such that we can obtain a better understanding of what kinds of contributors the mobile crowdsourcing platform should assign location-related tasks to to fulfill the information seekers' expected and desired information quality.

REFERENCES

[1] Elena Agapie, Jaime Teevan, and Andrés Monroy-Hernández. 2015. Crowdsourcing in the Field: A Case Study Using Local Crowds for Event Reporting. In *Third AAAI Conference on Human Computation and Crowdsourcing*. https://www.aaai.org/ocs/index.php/HCOMP/HCOMP15/paper/view/11595

[2] Fabian Bock, Sergio Di Martino, and Antonio Origlia. 2020. Smart Parking: Using a Crowd of Taxis to Sense On-Street Parking Space Availability. *IEEE Transactions on Intelligent Transportation Systems* 21, 2 (Feb. 2020), 496–508. https://doi.org/10.1109/TITS.2019.2899149 Conference Name: IEEE Transactions on Intelligent Transportation Systems.

[3] Matthias Budde, Andrea Schankin, Julien Hoffmann, Marcel Danz, Till Riedel, and Michael Beigl. 2017. Participatory Sensing or Participatory Nonsense? Mitigating the Effect of Human Error on Data Quality in Citizen Science. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 1, 3 (Sept. 2017), 39:1–39:23. https://doi.org/10.1145/3131900

[4] Yung-Ju Chang, Chu-Yuan Yang, Ying-Hsuan Kuo, Wen-Hao Cheng, Chun-Liang Yang, Fang-Yu Lin, I-Hui Yeh, Chih-Kuan Hsieh, Ching-Yu Hsieh, and Yu-Shuen Wang. 2019. Tourgether: Exploring Tourists' Real-time Sharing of Experiences as a Means of Encouraging Point-of-Interest Exploration. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 3, 4 (Dec. 2019), 128:1–128:25. https://doi.org/10.1145/3369832

[5] Chia-En Chiang, Yu-Chun Chen, Fang-Yu Lin, Felicia Feng, Hao-An Wu, Hao-Ping Lee, Chang-Hsuan Yang, and Yung-Ju Chang. 2021. "I Got Some Free Time": Investigating Task-execution and Task-effort Metrics in Mobile Crowdsourcing Tasks. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. 1–14. https://doi.org/10.1145/3411764.3445477

[6] David Dearman, Timothy Sohn, and Khai N. Truong. 2011. Opportunities exist: continuous discovery of places to perform activities. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '11)*. Association for Computing Machinery, New York, NY, USA, 2429–2438. https://doi.org/10.1145/1978942.1979297

[7] Sun-Jae Doh and Jang-Sun Hwang. 2009. How Consumers Evaluate eWOM (Electronic Word-of-Mouth) Messages. *CyberPsychology & Behavior* 12, 2 (April 2009), 193–197. https://doi.org/10.1089/cpb.2008.0109 Publisher: Mary Ann Liebert, Inc., publishers.

[8] Y. F. Dong, S. Kanhere, C. T. Chou, and N. Bulusu. 2008. Automatic Collection of Fuel Prices from a Network of Mobile Cameras. In *Distributed Computing in Sensor Systems (Lecture Notes in Computer Science)*, Sotiris E. Nikoletseas, Bogdan S. Chlebus, David B. Johnson, and Bhaskar Krishnamachari (Eds.). Springer, Berlin, Heidelberg, 140–156. https://doi.org/10.1007/978-3-540-69170-9_10

[9] Ge Gao, Yuling Sun, and Yongle Zhang. 2020. Engaging the Commons in Participatory Sensing: Practice, Problems, and Promise in the Context of Dockless Bikesharing. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*. Association for Computing Machinery, New York, NY, USA, 1–14. https://doi.org/10.1145/3313831.3376439

[10] Kapil Garg, Yongsung Kim, Darren Gergle, and Haoqi Zhang. 2019. 4X: A Hybrid Approach for Scaffolding Data Collection and Interest in Low-Effort Participatory Sensing. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (Nov. 2019), 90:1–90:28. https://doi.org/10.1145/3359192

[11] Jorge Goncalves, Simo Hosio, Denzil Ferreira, and Vassilis Kostakos. 2014. Game of words: tagging places through crowdsourcing on public displays. In *Proceedings of the 2014 conference on Designing interactive systems (DIS '14)*. Association for Computing Machinery, New York, NY, USA, 705–714. https://doi.org/10.1145/2598510.2598514

[12] Morten Hertzum. 2002. The importance of trust in software engineers' assessment and choice of information sources. *Information and Organization* 12, 1 (2002), 1–18. https://doi.org/10.1016/S1471-7727(01)00007-0

[13] Danula Hettiachchi, Niels van Berkel, Vassilis Kostakos, and Jorge Goncalves. 2020. CrowdCog: A Cognitive Skill based System for Heterogeneous Task Assignment and Recommendation in Crowdsourcing. *Proceedings of the ACM on Human-Computer Interaction* 4, CSCW2 (Oct. 2020), 110:1–110:22. https://doi.org/10.1145/3415181

[14] Thivya Kandappu, Nikita Jaiman, Randy Tandriansyah, Archan Misra, Shih-Fen Cheng, Cen Chen, Hoong Chuin Lau, Deepthi Chander, and Koustuv Dasgupta. 2016. TASKer: behavioral insights via campus-based experimental mobile crowd-sourcing. In *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp '16)*. Association for Computing Machinery, New York, NY, USA, 392–402. https://doi.org/10.1145/2971648.2971690

[15] Shirlee Ann Knight. 2005. Developing a Framework for Assessing Information Quality on the World Wide Web. (2005), 14.

[16] Yefeng Liu, Todorka Alexandrova, and Tatsuo Nakajima. 2013. Using stranger as sensors: temporal and geo-sensitive question answering via social media. In *Proceedings of the 22nd international conference on World Wide Web (WWW '13)*. Association for Computing Machinery, New York, NY, USA, 803–814. https://doi.org/10.1145/2488388.2488458

[17] Shigeya Morishita, Shogo Maenaka, Daichi Nagata, Morihiko Tamai, Keiichi Yasumoto, Toshinobu Fukukura, and Keita Sato. 2015. SakuraSensor: quasi-realtime cherry-lined roads detection through participatory video sensing by cars. In *Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp '15)*. Association for Computing Machinery, New York, NY, USA, 695–705. https://doi.org/10.1145/2750858.2804273

[18] Felix Naumann and Claudia Rolker. 2000. Assessment Methods for Information Quality Criteria. (Oct. 2000).

[19] Sangkeun Park, Sujin Kwon, and Uichin Lee. 2018. CampusWatch: Exploring Communitysourced Patrolling with Pervasive Mobile Technology. *Proceedings of the ACM on Human-Computer Interaction* 2, CSCW (Nov. 2018), 134:1–134:25. https://doi.org/10.1145/3274403

[20] Rajib Kumar Rana, Chun Tung Chou, Salil S. Kanhere, Nirupama Bulusu, and Wen Hu. 2010. Ear-phone: an end-to-end participatory urban noise mapping system. In *Proceedings of the 9th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN '10)*. Association for Computing Machinery, New York, NY, USA, 105–116. https://doi.org/10.1145/1791212.1791226

[21] Soo Young Rieh and Nicholas Belkin. 1998. Understanding Judgment of Information Quality and Cognitive Authority in the WWW. *Journal of The American Society for Information Science and Technology - JASIS* 35 (1998).

[22] Markus Schaal, Barry Smyth, Roland M. Mueller, and Rutger MacLean. 2012. Information quality dimensions for the social web. In *Proceedings of the International Conference on Management of Emergent Digital EcoSystems (MEDES '12)*. Association for Computing Machinery, New York, NY, USA, 53–58. https://doi.org/10.1145/2457276.2457287

[23] Besiki Stvilia, Les Gasser, Michael B. Twidale, and Linda C. Smith. 2007. A framework for information quality assessment. *Journal of the American Society for Information Science and Technology* 58, 12 (2007), 1720–1733. https://doi.org/10.1002/asi.20652 _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1002/asi.20652.

[24] Heli Väätäjä, Teija Vainio, Esa Sirkkunen, and Kari Salo. 2011. Crowdsourced news reporting: supporting news content creation with mobile phones. In *Proceedings of the 13th International Conference on Human Computer Interaction with Mobile Devices and Services (MobileHCI '11)*. Association for Computing Machinery, New York, NY, USA, 435–444. https://doi.org/10.1145/2037373.2037438

[25] Junjie Wang, Ye Yang, Song Wang, Chunyang Chen, Dandan Wang, and Qing Wang. 2021. Context-aware Personalized Crowdtesting Task Recommendation. *IEEE Transactions on Software Engineering* (2021), 1–1. https://doi.org/10.1109/TSE.2021.3081171

[26] Stephan Winter and Nicole C. Krämer. 2014. A question of credibility – Effects of source cues and recommendations on information selection on news sites and blogs. *Communications* 39, 4 (Nov. 2014), 435–456. https://doi.org/10.1515/commun-2014-0020 Publisher: De Gruyter Mouton.