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Yang Lei

Xiling Cui

Waiman Cheung

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(Work in Progress)

Yang Lei*, Southern University of Science and Technology, China, leiy@sustech.edu.cn
Xiling Cui, Hong Kong Shue Yan University, China, cuixiling@gmail.com
Waiman Cheung, The Chinese University of Hong Kong, China, wcheung@cuhk.edu.hk

ABSTRACT

Microtask crowdsourcing is a relatively new work form enabled by information technologies. For both practitioners and academics, understanding the turnover intention of the users, requesters and crowd workers respectively, of microtask crowdsourcing is very important. However, compared with the relatively large literature on requester, studies focusing on worker crowd workers are limited. Therefore, in this study, we investigate the crowd workers' intentions to leave the microtask crowdsourcing. The research goal is to analyze the motivations of crowd workers systematically and identify those factors that influenced their turnover intention. Based on perceived value and justice perspectives, a research model is developed. The proposed hypotheses will be tested using data from Amazon Mechanical Turk.

Keywords: crowdsourcing, turnover intention, perceived value, perceived justice, satisfaction.

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*Corresponding author

INTRODUCTION

The development of information and communication technologies (ICT) has not only changed people's daily lives but also the way how they work. *Crowdsourcing*, defined as "the practice of obtaining needed services and content by soliciting voluntary contributions in the form of an open call from a large network of individuals rather than from an organization's employees or suppliers" (Deng, Joshi, & Galliers, 2016, p. 280), has become a new type of work form. It changes the nature of the work: rather than signing a contract with an organization and clocking in office every day, individuals could conduct work anywhere and anytime, and have the autonomy to choose the jobs they like to complete. Among the three types of crowdsourcing classified by Howe (2008), namely microtask crowdsourcing (MC), creative crowdsoucing, and inducement prize contests crowdsourcing, MC is one of the most expanding trends (Bratvold, 2011), where micro tasks usually are easily completed within a few minutes and compensated with tiny monetary rewards (examples of the micro tasks are survey, product categorization, business feedback, and tagging, etc.) (Deng et al., 2016).

Understanding the success of ICT has been a goal of IS scholars for decades. Prior studies suggest that it is the users' turnover that determines long-term viability of an ICT and its success (Bhattacherjee, 2001). Compared with acquiring new users to initially adopt an ICT, retaining the existing users may cost far less (Bhattacherjee, 2001). Different from traditional ICT that usually involve one type of users, the MC platform contains two types of users –*requesters* releasing micro tasks, and *crowd workers* conducting these tasks. Compared with the large body of research conducted from the requester perspective (Finnerty, Kucherbaev, Tranquillini, & Convertino, 2013; Harris, 2011; Kittur et al., 2013), prior studies pay less attention to the crowd workers. Specifically, although there are some studies focusing on the crowd workers' motivation to initially participate in MC platforms to work (Kaufmann, Schulze, & Veit, 2011; Zheng, Li, & Hou, 2011), the determinants of their turnover intention of MC platform are still underexplored. The turnover intention of the crowd workers is defined as the intention to leave the MC platform and high turnover has been pointed out as one of the most important challenges of MC platforms (Hossain, 2012). Without knowing the antecedents of crowd workers' turnover intention, MC platforms cannot build an effective motivating incentive structure to sustain workers (Hammon & Hippner, 2012). Thus, it is crucial for practitioners and academics to understand what factors influence the turnover intention of crowd workers.

The turnover intention of crowd workers of MC platform may be influenced by both requesters and platform characteristics, as crowd workers are not only interacting with the requesters for tasks but also the platform for information. On the one hand, crowd workers are vulnerable to be exploited by requesters because requesters have the power to determine whether to pay the workers or not after they finished the tasks. Therefore, crowd workers are more likely to leave a platform if their overall perception on requesters on the platform is not fair enough. On the other hand, the characteristics of the MC platform itself may also influence the worker satisfaction that is an important factor leading to turnover intention (Chen, Yen, & Hwang, 2012; Seol, Lee, Yu, & Zo,

2016). Therefore, it is important to investigate the turnover intention of crowd workers of MC platforms from both the requester and platform perspectives.

In addition, crowd workers on the MC platform have different identities. Some of them are full time workers, whose income wholly comes from completing micro tasks, while some others do it only for enjoyment or skills training. These different identities of crowd workers may further influence the relationships between the above-mentioned factors and workers' affective responses, which in turn influence their turnover intention. Therefore, it is interesting to explore along this line.

In this paper, we propose a research model to examine what factors influence crowd workers' turnover intention of MC platforms, based on the cognitive-affective model. The cognitive-affective model argues that human behavior is influenced by both cognitive and affective factors (Te'eni, 2001). It has been widely used to study the continuance intention in IS discipline (i.e. Hong, Tai, Hwang, Kuo, & Chen, 2017; H.-W. Kim, Chan, & Chan, 2007). In the context of MC, we propose that workers can first form cognitive judgments based on their experience with their requesters and the MC platforms, which in turn influences the workers' affective response. Finally, the affective response drives the workers' behavior (turnover intention). In addition, the crowd workers' identity is proposed to moderate the relationship between workers' cognitive perception and their affective responses.

LITERATURE REVIEW

Mircrotask Crowdsourcing and Turnover Intention

MC is an open source form of micro tasks for micropayment (Deng et al., 2016). It is a relatively new market for businessmen and academics to look for labor force and for individuals to earn money. Prior studies have investigated the MC from different dimensions, for example, the importance of the platform's designs to meet stakeholder needs (Kajino, Arai, & Kashima, 2014), the importance of compensation strategy to help requesters to ensure the quality of answered tasks (Finnerty et al., 2013; Kittur et al., 2013), and the importance of governance with thechallenges in managing large and external groups of people handling a variety of tasks (Schenk & Guittard, 2011). These studies are usually conducted from the perspective of the platforms or requesters.

There are also a few studies adopting the perspective of task workers, another key stakeholder. For example, Zheng et al. (2011) explore the workers' motivation to participate in the crowdsourcing. They find that intrinsic motivations are more important than the extrinsic ones, while contest characteristics are crucial for intrinsic motivations. Kaufmann et al. (2011) study the crowd workers' motivations to participate in Amazon Mechanical Turk (MTurk). They find the similar results that intrinsic motivations dominate the extrinsic ones, of which task related factors, such as task autonomy, play an important role. However, prior studies have mainly focused on the motivations in leading individuals to initially participate in such a new work form. Little attention has been paid to the workers' continuous usage turnover intention, which has been found to be more important than initial adoption to determine the success of an IT (Bhattacherjee, 2001). In addition, how different types of workers affect the relationship between workers' cognitive perceptions and affective responses that influence their turnover intention is unclear through the literature. People should consider more for the workers if they care about MC's long-term impact on society (Deng et al., 2016).

The Cognitive-Affective Model

Predicting human behavior has drawn scholars' attention in many disciplines. Prior studies have found that it is not only the cognitive factors but also the affective ones matter (Cui, Lai, & Lowry, 2016). A basic idea behind is that affect and cognition take place through a dual-process system that comes together in determining natural human behavior (Chaiken & Trope, 1999).

Among the cognitive factors, perceived value of IT has been studied as an important dimension (Y. H. Kim, Kim, & Wachter, 2013; Kuo, Wu, & Deng, 2009). Perceived value is defined as "consumer's overall assessment of the utility of a product (or service) based on perceptions of what is received and what is given" (Zeithaml, 1988, p. 14). With higher perceived value, the individuals' affective responses will be more positive. In addition, in marketing and organizational context, perceived justice has been recognized as another important cognitive factor, which may lead to affective responses (Sindhav, Holland, Rodie, Adidam, & Pol, 2006). Many studies have explored the relationship between justice and its behavioral consequence of users (Smith & Bolton, 2002). For example, Zhao, Lu, Zhang, and Chau (2012) find that perceived service providers' justice is positively associated with user satisfaction, which ultimately increases the users' intention to use the service in the future.

User satisfaction has been widely studied as the affective response to the cognitive perception (Zhao et al., 2012). In behavioral IS studies, it has been found that satisfaction results from the users' evaluation of their experience with IT (Melone, 1990). According to the expectation-confirmation theory, customers have expectation towards an IT before their use and evaluation after. If customers' evaluation is better than their expectation, they are satisfied; on the contrary, they are dissatisfied if the evaluation is not

as good as their expectation. In addition, user satisfaction is suggested to be an important dimension of IT success, and has been found to play an important role in decreasing turnover intention for a variety of IT, such as e-learning systems (Roca, Chiu, & Martínez, 2006), and mobile service (Zhou, 2013).

Research Model And Hypotheses

Based on the literature review and cognitive-affective model, we build a research model, as shown in Figure 1. The perceived platform value and perceived justice on requesters reflect workers' cognitive judgment with the experience while completing micro tasks in the platform, interacting with platform interface and their requesters. Platform satisfaction and microtask work satisfaction reveal the workers' affective responses to the experience. Turnover intention reflects the workers' behavior driven by the cognitive and affective responses. Therefore, the model hypothesizes that workers' cognitive judgments, including perceived platform values and requesters' justice, lead to their affective responses, including platform satisfaction and work satisfaction, respectively. The worker identity is regarded as a moderator between these relationships. Platform satisfaction and work satisfaction in turn determine the workers' turnover intention. The hypotheses are presented below.

Figure 1. Research Model
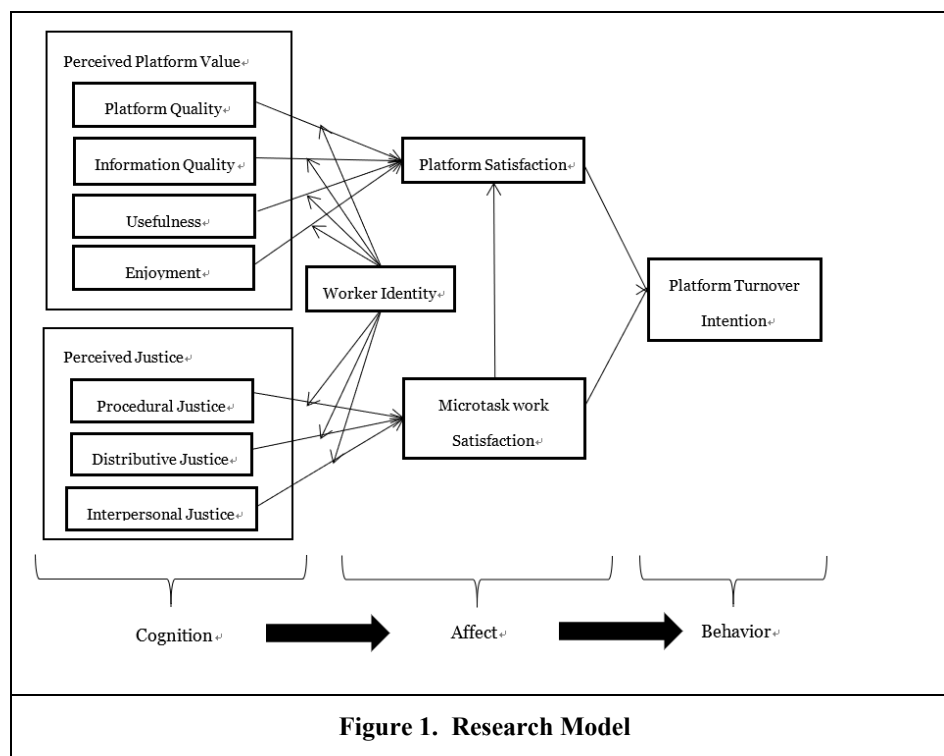
Perceived value and platform satisfaction

Prior studies have documented a positive relationship between perceived IT value and customers' satisfaction (Y. H. Kim et al., 2013; Kuo et al., 2009). We believe such a relationship can be generalized to perceived platform value and platform satisfaction in our study. Perceived platform value includes many dimensions. The first dimension is platform quality (also known as system quality), which refers to the stability of a system, for example, the consistency of the system interface, ease of use, response rates in interactive systems, quality documentation, and sometimes, quality and maintainability of the program code (Seddon, 1997). Prior studies have found a positive relationship between system quality and user satisfaction (Chiu, Hsu, Sun, Lin, & Sun, 2005). The second dimension is information quality, referring to the timeliness, relevance, and accuracy of information generated by a platform. Poor information quality may undermine workers' experience because they need to spend more efforts and time on searching, which results in worse satisfaction with the platform. Prior studies have documented a positive relationship between information quality and user satisfaction (Wixom & Todd, 2005). The third dimension is perceived usefulness that positively affects user satisfaction (Calisir & Calisir, 2004; Joo, Lim, & Kim, 2011). According to the expectation-confirmation theory, the more usefulness users perceive, the more satisfaction they are. For example, if workers find they can indeed earn monetary rewards on the MC platform, they are more satisfied with the platform. The fourth dimension is perceived enjoyment, which refers to the enjoyment of using an IT. Prior studies have also documented a positive relationship between perceived enjoyment and satisfaction (Lin, Wu, & Tsai, 2005). Therefore, we make the following hypotheses:

H1: Platform quality (H1a), information quality (H1b), perceived usefulness (H1c), and perceived enjoyment (H1d) are positively associated with platform satisfaction.

Perceived justice and work satisfaction

Extending from equity theory (Adams, 1963), justice provides a useful perspective for understanding the relationship between workers and their work satisfaction. In the management discipline, various studies have explored the effects of perceived justice of the organizations on job satisfaction (i.e. Gillet, Colombat, Michinov, Pronost, & Fouquereau, 2013; Maxham III & Netemeyer, 2002).

The justice has been categorized into three dimensions: interactional justice, procedure justice, and distributive justice. The first dimension is interactional justice, which refers to the fairness of interpersonal treatment that the workers received (Bies & Shapiro, 1987). Prior studies have found that interactional justice positively affects job satisfaction (Zhao et al., 2012). In the context of MC, workers are interacting with requesters. Fair treatment in such interactions can influence the evaluation of the workers' work satisfaction. The second dimension is procedure justice, referring to the fairness of policies, procedures, and criteria (Maxham III & Netemeyer, 2002). The importance of considering this dimension of justice has been suggested by prior studies, and it has been found to positively influence job satisfaction (Zhao et al., 2012). On MC platform, if the workers feel that their answers to the tasks are evaluated fairly by requesters, they are more likely to be satisfied with their work on the platform. Lastly, distributive justice refers to whether the outcomes are comparable to the inputs (Sindhav et al., 2006). If workers perceive that their monetary rewards are equal to their time and efforts spent, their perception of distributive justice is high, and thus they are more satisfied with their work. Prior studies have also documented a positive relationship between distributive justice and work satisfaction (Daileyl & Kirk, 1992). Therefore, we make the following hypotheses:

H2: Perceived interactional justice (H2a), perceived procedure justice (H2b), and perceived distributive justice (H2c) are positively associated with work satisfaction.

Relationship between two types of satisfaction

As the platform and requesters are two separate entities, the satisfaction with each entity should be viewed distinctly. The evaluation of the platform is influenced by the evaluation of the requesters in the platform. As the evaluation of requesters may vary from experience to experience, workers may have an overall evaluation of all the requesters they encounter on the platform, which influences their evaluation of the platform. If workers are not satisfied with most of the tasks they accomplish, their evaluation of the platform tend to be low. On the other hand, if workers are more satisfied with the tasks, they are more likely to be satisfied with the platform as they may think consider the reasonable requests as part of the platform.

H3: Work satisfaction is positively associated with platform satisfaction.

Worker satisfaction and turnover intention

Satisfaction plays an important role in leading to workers' subsequent behavior (Oliver, 1980). Prior studies have found a positive relationship between satisfaction and continuance usage of IT, and a negative relationship between satisfaction and turnover intention (Tett & Meyer, 1993; Zhao et al., 2012). In the context of MC, if the workers are more satisfied with the platform, they are more willing to participate in the tasks on the platform in the future instead of leave the platform. In addition, work satisfaction also influences the turnover intention of the platform. If the work satisfaction is high, workers may be less likely to leave with the reasonable requesters on the platform. Moreover, a stable relationship between workers and requesters, results from the high work satisfaction, can also encourage the workers to stay.

H4: Platform satisfaction (H4a) and work satisfaction (H4b) are negatively associated with turnover intention.

Worker identity moderator

Crowd workers engage in the MC platform with different purposes. For example, some workers are taking part-time jobs, motivated by the willingness to help others, while some are taking full-time jobs to earn money. These different purposes of the workers with different identities lead to different expectations of them. On the one hand, full-time workers, who take micro tasks as their only jobs, may be more sensitive to whether the requesters are fair or not. On the other hand, part-time workers, who are motivated by helping others or improving their skills, may concern more about the platform design and information provided. According to the expectation-confirmation theory, if users' expectation toward an IT is confirmed, they are more satisfied with the IT and then are more likely to engage in the future (Bhattacherjee, 2001). Therefore, the work identity may have moderating effects

between the perceived platform value and platform satisfaction, and the perceived justice and work satisfaction. Therefore, we hypothesize:

H5a: The effects of perceived platform value on platform satisfaction are greater for part-time workers than for full-time workers.
H5b: The effects of perceived justice on work satisfaction are greater for full-time workers than for part-time workers.

Measurement
To measure the constructs in our research model, validated items used in the literature were adapted in this study. All items were adapted to fit the MC context. The measurement scales of platform quality and information quality were adapted from Zhou (2013) and Kang and Lee (2010). Perceived usefulness measurements were adapted from Davis (1989), and perceived enjoyment measurements were adapted from Seol et al. (2016). The three justice measurements were adapted from Colquitt (2001) and Zhang, LePine, Buckman, and Wei (2014). To measure the two types of satisfaction, four items are adapted from Bhattacherjee (2001) to measure platform satisfaction, and five items are adapted from Mak and Sockel (2001) and Mitchell, Smyser, and Weed (1975) to measure the workers' work satisfaction on MC platform. Lastly, five items were adapted from Bhattacherjee (2001) and Zhou (2013) to measure workers' turnover intention of MC platform. Thus, a total of thirty-four items were used to measure all the constructs in the research model. For each item, a seven-point Likert scale was used with anchors from"1=strongly disagree" to "7=strongly agree"
.

Conclusion and Ongoing Work
This study aims to explore what factors influence crowd workers' turnover intention of MC platform. Based on the cognitive-affective model, we propose a conceptual model to understand how perceived platform value and perceived justice influence workers' turnover intention through satisfaction. In addition, we are interested in studying the moderating effect of worker identities.

In the next step, we will collect empirical data to test our research model. As the biggest MC platform, MTurk provides us an opportunity to collect a large sample to test our hypotheses. The well designed questionnaires will be distributed to workers, and each participant will receive 2 dollars (MTurk suggest the monetary rewards should be 6$ per hour). In addition, in order to alleviate the common method bias, which is usually a serious problem in survey study, we are going to adopt a three-wave data collection method. That is, at t1, we will be hiring workers to report their assessments of the four perceived platform value constructs and three perceived justice constructs. At t2, we will hire the same workers in t1 to report their overall work satisfaction and platform satisfaction. At t3, the same workers will be hired to report their platform turnover intention, their demographic information, and their work identities (part-time or full-time workers). Each phrase will be lagged around one week.
Then, structural equation modelling would be adopted for examining the model and testing our hypotheses. We hope that this study could broaden our knowledge on turnover intention of crowd workers. First, by proposing the conceptual model, this study provides a comprehensive picture of how the platform and requesters influence crowd workers' turnover intention of MC platform. Future research on such a two-side market could follow the same idea to consider not only the requesters and platforms but also the workers. In addition, the classification of worker identities could provide implications to both platforms and requesters on how to improve worker satisfaction and reduce their turnover intention according to their different identities.

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