



Interlinked Motivation Model to Use Mobile Crowdsourcing Platforms Among Low-Income Citizens

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ABSTRACT

Crowdsourcing is an initiative implemented by the Malaysian government to support its National Key Result Area (NKRA) agenda to improve the lives of citizens with low household income in the B40 group. Crowdsourcing activities are done on mobile crowdsourcing platforms that enable workers to perform micro tasks at any time for a fixed payment. However, without active and constant participation from the crowd, this initiative might not be successful. This paper describes a preliminary study in identifying motivation factors for participating in mobile crowdsourcing platforms. This study identified intrinsic and extrinsic motivation factors that can attract crowds to participate in mobile crowdsourcing platforms. Technology efficacy factors that interlink with motivation factors were also identified in this study. The preliminary study employed the qualitative method where in-depth interviews were conducted among 30 crowdsourcing participants in Peninsular Malaysia. The findings of this study are the basis for a motivation model that can attract crowdworkers from among the B40 group of household-income earners to participate in crowdsourcing to procure and perform available micro-tasks. The findings will also help improvise mobile platforms for crowdsourcing.

Keywords: Crowdsourcing, interlinked motivation model, mobile crowdsourcing platform

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INTRODUCTION

Crowdsourcing is being widely used by companies and organisations to help them improve their operation and management process. Following the evolution of crowdsourcing, crowdsourcing platforms have been implemented to attract communities to register as crowdworkers to perform jobs and tasks made available on crowdsourcing platforms by job providers. Crowdsourcing is an alternative means undertaken by various

industries of securing workers for jobs and tasks with the benefit of faster completion of jobs. According to Lieberstein, Tucker and Yankovsky (2012), crowdsourcing is the act of taking a job from a job provider and outsourcing it to unknown parties sourced from a large group of workers through open calls. The act of outsourcing jobs or tasks to an undefined group of crowdworkers is a potential problem-solving tool both for the profit and non-profit sectors Brabham (2008).

Crowdsourcing has four components: crowdworkers, crowdsourcing platform, crowdsourcing task and crowdsourcer or job provider. Crowdworkers are the group of workers who perform tasks needed to be completed by job providers. They go through lists of jobs on a crowdsourcing platform to search for suitable tasks that match their qualification and skill. The main reason for the participation of the crowdworkers in performing a task is to increase their income (Molina Romo, 2014). The crowdsourcing platform is a website that works as a medium for enabling job matching and hiring workers. Most job providers interact directly with a crowdsourcing platform to advertise their tasks. Typical crowdsourcing tasks are translation, transcription, data entry and validation, research, report writing and image tagging. These tasks have to be completed in a specific time as requested by the job provider. Job providers are agencies or individuals who provide tasks for the crowd. They usually outsource tasks in order to improve their operation, management or business.

The success of completing a job or task provided by job providers depends on how crowdworkers deliver their skills and abilities. The quality of the task performed by crowdworkers depends on the reason for crowd participation. Some workers are motivated to work and participate in crowdsourcing activities because of the payment offered and they ensure that the task is completed. However, the quality of the task cannot be guaranteed (Rogstadius et al., 2011). For low-income earners, crowdsourcing generates extra income (Schmilinsky, n. d.), while other crowdworkers might be participating in crowdsourcing activities for personal satisfaction. These reasons, self-satisfaction and income generation, are referred to as intrinsic and extrinsic motivation for participation in crowdsourcing activities.

Other than helping to reduce workload, crowdsourcing helps to generate income for lower-income citizens, especially those among the B40 group whose income per month is below RM4000. Addressing the research gap in crowdsourcing is essential especially with the launch of the crowdsourcing initiative for Malaysia under Digital Malaysia, which is led by the Multimedia Development Corporation (MDeC). In October 2014, eRezeki was introduced (eRezeki Programme, 2015) as a digital programme to help the B40 group generate income. Some crowdsourcing platforms such as Amazon Mechanical Turk have a large number of crowdworkers. This encouraged the Malaysian government to make crowdsourcing one of the initiatives in Malaysia's National Key Result Areas (NKRA) and led it to collaborate with MDeC to develop eRezeki, which is located in almost all states in Malaysia. However, MDeC is currently facing challenges attracting workers to crowdsourcing platforms. According to Badlisham Ghazali, MDeC's Chief Executive Officer, introducing crowdsourcing in Malaysia is seeing "more challenges than anything else." Some of the tasks made available come with payment but some do not, and this curbed crowd interest in taking up tasks.

In order for crowdsourcing to become a credible option among job seekers in Malaysia, the factors that can motivate their participation in crowdsourcing need to be identified.

Motivation Model

A motivation model for crowdsourcing was built to guide companies or organisations in managing and improving crowdsourcing platforms and help job providers improve the quality of jobs provided to crowdworkers through better rewards in order to attract more participants to use crowdsourcing platforms. Deci and Ryan (2008) developed the Self Determination Theory (SDT), which specifies two motivations i.e. intrinsic and extrinsic motivation that guide individuals in accepting assignments and completing them. Individuals who possess intrinsic motivation perform tasks that give them satisfaction in terms of fun and service towards the community. Kaufmann, Schulze and Veit (2011) proposed a motivation model that consists of motivation factors. The proposed motivation model was tested on the crowdworkers using the platform, Mechanical Turk. Figure 1 shows the combined model proposed by Kaufmann et al. (2011):

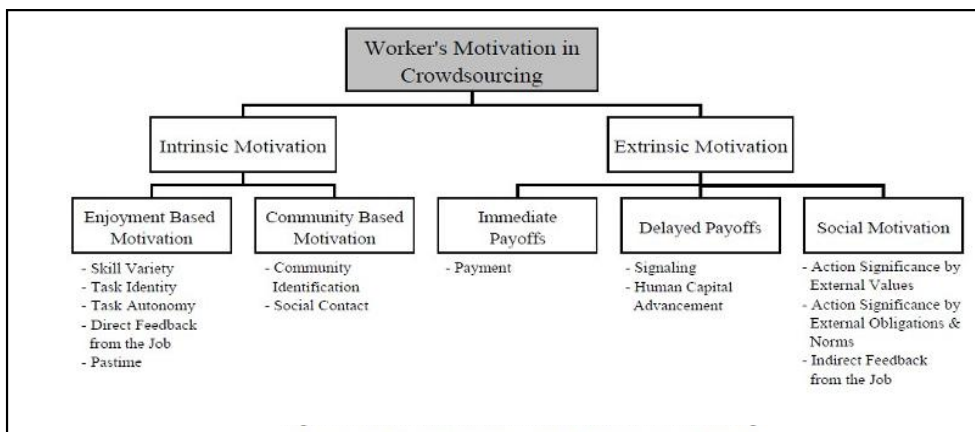


Figure 1. Combined model for worker's motivation in crowdsourcing

The motivation model categorises motivation into intrinsic and extrinsic motivation. It breaks down intrinsic motivation to enjoyment-based motivation and community-based motivation, while extrinsic motivation is classified into immediate payoff, delayed payoff and social motivation.

Intrinsic Motivation

Intrinsic motivation can be defined as motivation that originates from the individual. This motivation drives the individual to be involved in a particular task or work; the individual is self-inspired. Kaufmann et al. (2011) stated that intrinsic motivation can be enjoyment-based or community-based. In crowdsourcing activities, some workers are attracted to perform the tasks provided by job providers simply for the fun of it (Hippel & Krogh, 2003), while others seek to serve the community (Leimeister, 2010).

One reason workers participate in crowdsourcing is task variety (Kaufmann et al., 2011). Workers can make use of the crowdsourcing platform to try different skills in different tasks

offered by the job provider. The motivation of the workers might be higher if they get to participate in different types of task that can motivate them to use different skills. They may also desire task autonomy, being motivated to join the crowdsourcing platform to express their creativity (Hackman & Oldham, 1976). Task autonomy in crowdsourcing is seen in the freedom enjoyed by crowdworkers to express their creativity. Participants are stimulated (Lakhani & Wolf, 2005) to be more creative if the task requires them to go beyond their skills. Another reason for interest in participating in crowdsourcing is to meet new people (Brabham, 2010). Crowdsourcing provides the opportunity to make new friends (Hosseini, Phalp, Taylor, & Ali, 2014) who share the same interests.

Extrinsic Motivation. Extrinsic motivation drives human behaviour (Lakhani & Wolf, 2005) in participating in crowdsourcing through the promise of a payment, incentive or reward. Extrinsic motivation can be defined as the motivation to achieve a separable outcome (Ryan & Deci, 2002). This motivation originates mostly from factors affecting the individual that are beyond his own control or activation. Crowdworkers may be driven to perform tasks because of someone else or because they seek future returns, rather than to satisfy their own inner needs.

Extrinsic motivation (Kaufmann et al., 2011) may be categorised as immediate payoff, delayed payoff and social motivation. Immediate payoff is the reason that many take part in crowdsourcing. They aim to receive the monetary reward or incentive offered by the job provider. Crowdworkers seek to increase their monthly income, and it could be their primary or secondary income (Lakhani & Wolf, 2005). Workers usually receive an immediate payment after performing the task (Kaufmann et al., 2011). Karger, Oh and Shah (2014) stated that delaying payoff may reduce participant motivation to participate in new tasks. Hosseini et al. (2014) categorised the giving of an incentive for performing crowdsourcing tasks under extrinsic motivation.

Workers who are not focussed on payment do not mind responding to delayed payoffs. Payment for work may be late, but they are focussed only on future opportunities. Delayed payoff can be divided into two categories, signalling and human capital advancement (Kaufmann et al., 2011). Signalling refers to workers who joined the crowdsourcing platform in order to demonstrate their skills and performance to catch the notice of a job provider who might be interested to offer them a job (Weiss, 1995).

Hosseini et al. (2014) stated that social incentives are included in extrinsic motivation. Workers might be joining crowdsourcing platforms because they want to be recognised by their peers (Mao, Yang, Li, & Harman, 2013). Participants may also be seeking public recognition (Estellés-Arolas & González-Ladrón-de-Guevara, 2012; Bozzon, Brambilla, Ceri, & Mauri, 2013; Kazai, 2011) in wanting to be known through the network of workers and job providers on crowdsourcing platforms. This type of recognition will indirectly help the crowd receive new tasks from job providers.

Technology Efficacy. Self-efficacy is defined as “how well one can execute courses of action required to deal with prospective situations” (Bandura, 1986). Betz and Luzzo (1996) stated

that self-efficacy is an important element in modern psychology and it is presented in Social Cognitive Theory, which states that people can be more motivated and participated longer in performing tasks if they possess self-efficacy. Technology efficacy is rooted from the self efficacy construct. It generally refers to one's ability to achieve or complete a task using technology (Compeau & Higgins, 1995). In this study, we examine technology efficacy effect in influencing the intrinsic and extrinsic motivations towards using crowdsourcing applications.

Research Approach

The qualitative method was chosen to conduct the preliminary data collection as crowdsourcing is considered a new phenomenon in Malaysia, thus this was deemed a good method for collecting first-hand information of the phenomenon. The government initiative of introducing crowdsourcing in Malaysia was intended to improve the average income of B40 groups (PM Najib Announces More Digital Malaysia Initiatives, 2014). This method was also chosen as it was believed that it could facilitate understanding of the motivation factors for participation in crowdsourcing.

Data Collection

In this phase, data were collected using the semi-structured interview method. The interview sessions were held with crowdsourcing platform users from three centres in northern, southern and eastern Peninsular Malaysia who were between the ages of 18 and 45 in order to identify the factors that motivated them to participate in crowdsourcing. The three centres in Shah Alam, Kedah and Terengganu were identified by MDeC as crowdsourcing platforms that provided activities and training for crowds in January 2016. The reason for using the semi-structured interview as the preliminary method was because the results from the interview would give deeper understanding of the motivation factors and this would help in developing an interlinked motivation model. The questions in the interview were constructed based on the motivation factors proposed in the Kaufmann model (Kaufmann et al., 2011).

Data Analysis

The interview data retrieved from 30 interviewees were translated and transcribed. The questions and answers were in the Malay language. Open coding was used to derive themes for the motivation factors identified from the interview data. The themes were then classified into factors that were then used to construct an interlinked motivation model.

Model Validation

Five expert reviewers were identified from the existing crowdsourcing platforms in Malaysia to validate the proposed interlinked motivation model, but only three managed to complete the model validation. These experts were chosen based on their experience in using and managing the crowdsourcing platforms as well as education level.

Findings

There were 30 participants interviewed where 53% were female and the rest were male. 31% is the highest percentage of participants in the age group of 31-35 years old. For education, participants with a diploma held the highest percentage compared with those who had SPM qualification (70%), while 55% of the participants earned between RM1100 and RM1500. All the interview participants owned a smartphone and 60% stated that they were skilled Internet users, with 50% of the respondents using the Internet more than 5 hours per day.

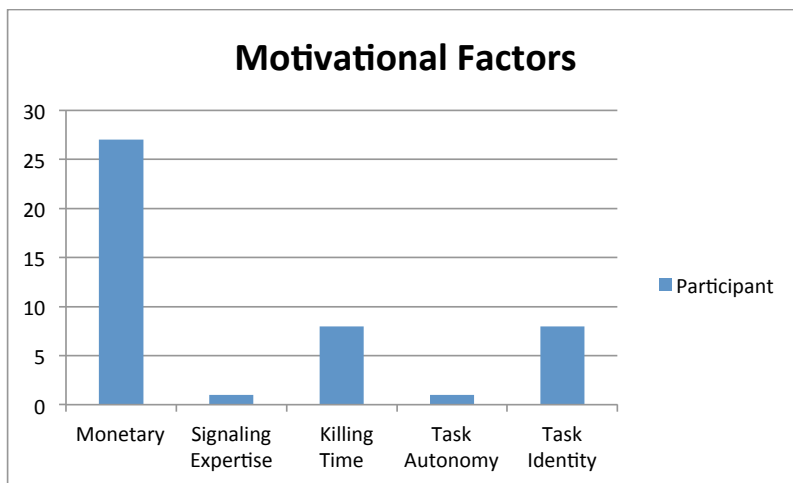


Figure 2. Motivation factors

Extrinsic Motivation

Based on the data collected during the interview sessions as shown in Figure 2, almost all the participants mentioned that money was the main factor that motivated them to participate in crowdsourcing, making monetary concerns a strong factor under extrinsic motivation for participating in crowdsourcing. Below are some of the responses from the participants.

Main motivation is of course income. Second.... I think it is still income.

(Participant 3)

I join crowdsourcing platform because I want to generate income and increase it (income).

(Participant 22)

Some of the workers participating in crowdsourcing activities aimed to earn additional income. There were also crowdworkers who performed crowdsourcing tasks as a part-time job as they were labelled low-income citizens who were among the B40 group. By participating in crowdsourcing activities, they were able to earn an additional income. Most crowdworkers are paid based on the difficulty level of the task as motivation to keep participating in the activities.

Monetary motivation includes reward motivation, as coupons rather than cash was sometimes offered as payment for tasks completed. The participants stated that they sometimes received coupons that could be used to buy groceries.

At least I get vouchers. Even though they also offer money as payment, I choose vouchers. Sometimes I can get a RM20-voucher that can be redeemed in Giant, Jusco and other outlets. I target a number of vouchers I can get in a month and use them for groceries and home appliances.

(Participant 3)

Other than the monetary factor, signalling expertise was also a factor, as pointed out by one participant. The interviewee stated that the reason for participating in the crowdsourcing platform was to be identified and recognised as a worker in the crowdsourcing market. However, this factor was not chosen as a motivation factor based on the experts' recommendation as only one participant had mentioned it.

I have long-term expectations for participating in crowdsourcing. I want to be known as a crowdsource worker and I want to build my own profile in the crowdsourcing market.

(Participant 17)

Intrinsic Motivation

Other than extrinsic factors, intrinsic factors were also mentioned by the participants as motivation for participating in crowdsourcing. Under the category enjoyment-based motivation factors, three factors were mentioned by the participants: killing time, task autonomy and task identity. As shown in Table 1, eight respondents stated that by participating in crowdsourcing, they could utilise their free time very well.

I participate in crowdsourcing to fill free time and also to generate income.

(Participant 1)

Definitely to kill time, when we do not have any work to do, we can perform these tasks anywhere.

(Participant 17)

As stated by Hackman and Oldham (1976), crowdworkers are allowed to express their creative ideas; this freedom is known as task autonomy. In the interviews, task autonomy was mentioned by one respondent, who noted that crowdsourcers were given authority and freedom in performing their tasks. They were free to contribute their ideas regarding the.

The motivation is actually independent. No people will scold us if we make a mistake when performing the task.

(Participant 17)

Another motivation related to intrinsic factors was task identity. Based on task identity in this study, eight participants stated that the idea of performing an activity online motivated them to participate in crowdsourcing. Several participants were attracted to the way tasks or work was presented and they enjoyed completing the tasks.

I really love activities related to the computer, and that motivates me to participate in crowdsourcing.

(Participant 16)

I joined crowdsourcing because I love activities that are conducted online. It motivated me to join the crowdsourcing platform.

(Participant 17)

Technology Efficacy

Technology efficacy was mentioned by the respondents as an interlink for moderating intrinsic and extrinsic motivation in encouraging workers to participate in crowdsourcing activities. Technology efficacy referred to computer training.

Computer training assists users in performing the given task and at the same time, helps to improve users' skill in using computers and the platform.

(Participant 2)

This underscores the importance of technology efficacy in controlling user motivation for participating in crowdsourcing. Users need to have at least a basic knowledge of technology to enable them to perform crowdsourcing activities.

Interlinked Motivation Model

Based on the data collected from the interview, an Interlinked Motivation Model for intention to use a crowdsourcing platform among the B40 group was proposed (see Figure 3).

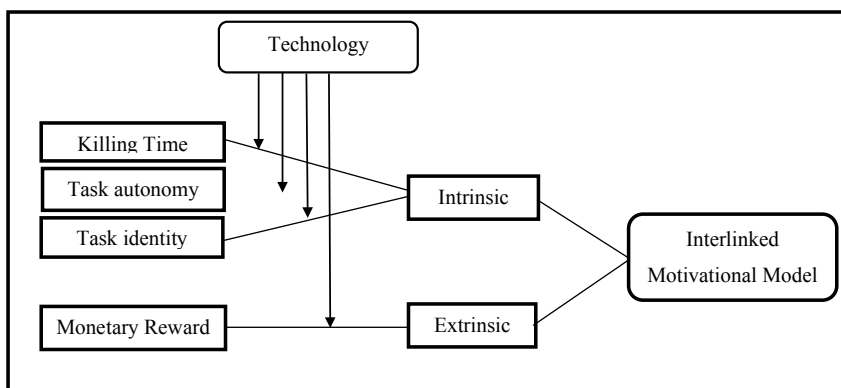


Figure 3. Interlinked motivation model

CONCLUSION

In general, monetary reward was stated as an important motivation that drove the participants to crowdsourcing. However, intrinsic motivation factors such as killing time, task autonomy and task identity were also important to current crowdsourcing platform users. This study showed that crowds not only participated in crowdsourcing activities just to generate income but also because they enjoyed performing various kinds of tasks.

The model proposed in this study has not yet been implemented in crowdsourcing. The data extracted from the interviews were for identifying current motivation factors in crowdsourcing. It is recommended that future studies test the proposed interlinked motivation model in order to help efforts to enhance participation in crowdsourcing among low-income citizens.

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