

## A Preliminary Study for Critical Success Factors of Micro Sourcing in Malaysia

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**Abstract** - Micro sourcing is the act of outsourcing small or micro task to the crowd. During recent years, commercial micro sourcing has become a successful business model. Micro sourcing initiative in Malaysia is still nascent. The implementation is targeted to B40 group; those with low income household. This study is attempted to identify the critical success factor of micro sourcing initiative on the industry level and to identify the weights of each critical success factors in order to determine the priority of each of them. Interview has been conducted with Micro sourcing to Generate Income for the B40 committee member. Analytic hierarchy process (AHP) was used to set critical success factors priority. Results show the reputation system, the ease of use of technology and provide training to the micro workers as the most imperative critical success factors related with success of micro sourcing in Malaysia. In the future, this study should involve the participation from stakeholders such as micro workers, platform owner and organizations.

**Keywords** - Micro sourcing, B40, AHP, Uplift Income, Malaysia, job provider, micro workers, platform

### I. INTRODUCTION

Micro sourcing can be considered as the latest trend in outsourcing [1]. It rises as the new online distributed problem solving and production model in which networked people collaborated to complete a task [2]. In addition, it has the potential to be problem solving tool for government and the non-profit sector [3]. It is the outsourcing model to meet the demand of employer for completing smaller tasks in the short time instead of completing bigger tasks. Thus, it allows small business and large business by hiring skilled workers and pay for specialize task or job either for a limited or part time basis.

The total worldwide micro sourcing market is still small and nascent but it is expected to growth fast [4]. Multimedia Development Corporation (MDeC) who lead the Digital Transformation Program by developing one sub project called "Micro sourcing to Generate Income for the B40" will be responsible to plan and implement micro sourcing specially to B40 group – those with house hold income less than RM2,300 per month [4]. The aim of the project is to uplifts the quality of life among the citizens [4]. Furthermore, the objectives are to generate income and to offer digital access to all levels of society, especially the bottom 40 percent of the society. Since micro sourcing in

Malaysia is only at the infant stage, there are limited studies conducted in this area. The research so far focused on the SWOT analysis, micro sourcing business process and micro sourcing strategic framework [5,6,7]. The Thus, this study is carried out to examine the critical success factor (CSF) for micro sourcing initiatives in Malaysia. By having the critical success factors in the implementing the micro sourcing initiative, it helps the stakeholders to thrive and also providing goals for successful micro sourcing implementation in Malaysia. This paper first introduces the reader to the concepts of micro sourcing and AHP method, the methodology followed by results and discussions.

### II. LITERATURE REVIEW

Micro sourcing can be defined as the art of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call [8]. Meanwhile, Hobfeld et al. [9] defined micro sourcing as an activity of outsource a job to a large, anonymous crowd of workers, the so-called human cloud, in the form of an open call. Globally, some of the known crowd sourcing platforms are Mechanical Turk, CrowdFlower and SamaSource.

Micro sourcing involves three stakeholders; the platform (websites), organizations (job provider) and micro workers. These stakeholders interact with each other through the website. Job provider will provide the task to platform. Platform facilitates work process such as hiring, collaboration or bringing together jobs. Micro workers are the available group or pool of individuals who are qualified to complete certain task in a specific employment situation [1].

In Malaysia, uplift the B40 initiative is introduced under social dimension [4]. To uplift the B40, a programme called Micro sourcing to Generate Income for the B40 is created. It is defined as the distribution of small and discrete tasks to a group of networked users via digital means [4]. There are several factors that contribute to the implementation of micro sourcing in Malaysia. Today, most outsourcing market is largely driven and served by very large companies. Hence, SMEs and individuals do not have access to these outsourced capabilities. Moreover, project-based work is increasing which both companies and outsources pressure on thus contributes towards the growth of

micro sourcing in Malaysia. Currently, Malaysia has a large number of latent workforces who are potential micro sourcing workforce for example homemakers, retirees and senior citizens, unemployed graduate part time workers, prison, under employed and disable. Other factors are ninety two percent of adult in 2005 to 2008 has strong language abilities such as English, Malay, Arabic, Chinese and Tamil, high degree of knowledge to Islamic affairs and last but not least has good connectivity through Internet and mobile phones [4]. The ICT penetration in Malaysia is as shown in Table 1 below.

TABLE I. ICT PENETRATION IN MALAYSIA

INFRASTRUCTURE	SUPPLY	CONSUMPTION	
81% national fixed line and wireless broadband penetration rate in populated areas	Over 3,000 ICT companies in Malaysia	63% Internet user in Malaysia population	e-Commerce RM1.97 billion in 2011
Mobile penetration rate is 128.7%	More than 5,500 IPs developed by MSC Malaysia Status Companies	39.1 (11.2 mil) Face-book penetration rate	M-commerce RM467 mil

CSF can be defined as the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization [10]. In other words, critical success factor specify key areas of performance that are needed for the organization to accomplish its mission [11]. Identifying CSF will helps micro sourcing implementation on track towards aims and goals, well-focused and avoids wasting effort and resources on less important areas. Thus, to ensure micro sourcing implementation is able to achieve its goals, Sharma [3] has proposed crowd sourcing critical success factor model which consists of five peripheral factors that affect the motive alignment of the crowds which the main determinant to the success of the crowd sourcing initiatives. The five factors are Vision and Strategy, Human Capital, Infrastructure, Linkages and Trust and External Environment. Table II below shows the description of the five factors.

TABLE II. CROWD SOURCING CRITICAL SUCCESS FACTORS MODEL

Factors	Description
<b>Vision and strategy</b>	Micro sourcing vision allows the initiatives to be perceived as a valuable. Clearly vision along with ideas, goals and objectives are important to the crowd because they would choose the initiative that gives aspirations to participate in it [3]
	Selecting and clearly expressing the purpose of the initiatives is essential in order to engaging online users that can give meaningful inputs according to the desired outcome [12]

<b>Human capital</b>	In business area, coordinating human capital is essential because several people work together, and their output is bigger than what they produce individually [13]
	Crowd with different background, skills and abilities will lead to successful micro sourcing initiatives [12]
	Workers should head for qualifies tasks in order to maximize his income [14]
	In order to enable good participation of the crowd in the micro sourcing initiative, providing education and vocational training to the micro workers is required [3]
<b>Infrastructure</b>	Technological infrastructure refers to the sophistication and reliability of communication technology [15]. Thus, it should be cheap and easy to use without prior training
	Research and development should be part of the infrastructure because it leads to the betterment of human capital [3]
<b>Linkage and trust</b>	Trust can be increased by building frameworks for crowds to share their professional and personal background [16]
	Transparency communication defined as clarity in the communication between firm, platform and participations
	Knowledge sharing refers to the activities of transferring or disseminating knowledge communicated between worker and employer [17]. Sharma [3] also argues that proper linkage contribute manageable and efficient knowledge transfer
<b>External environment</b>	Involvement of governance committee ensures IT decisions are in support of business strategies and encourage the right behaviour through IT
	Mirafshar [12] found that large numbers of participants are willing to do different tasks. Hence, by having variety of tasks and workers, micro sourcing initiatives can attract crowd which are motivated to have tasks associated with their diverse motivational aspect.

Analytics hierarchy process is a quantitative method for ranking decision or prioritizes alternatives and selection from multiple criteria [19]. In other words, it can be used to compare and rank the alternatives and assist the decision maker in making a choice. Thus, it is suitable to be used to prioritize the CSF for micro sourcing implementation in Malaysia.

### III. METHODOLOGY

In order to collect the data, interview has been conducted with the personnel in the committee that is responsible to develop the strategic plan for micro sourcing implementation in Malaysia. The crowd sourcing critical success factor model proposed by Sharma [3] was used as the basis of the research to get in-depth information on the CSF of micro sourcing implementation in Malaysia. The respondent was also

asked to weight to CSF for micro sourcing. Then, AHP analysis was used to identify the weightage for each of the CSF.

#### IV. RESULTS AND DISCUSSIONS

There are four phases in the AHP method. First is structuring a decision problem and selection of criteria. Based from the crowd sourcing critical success factor model proposed by Sharma [3], the following CSFs are presented.

TABLE III. CRITICAL SUCCESS FACTOR FOR MICRO SOURCING

<b>Vision and strategy</b>	Clear vision and purpose
	Implement rewards system
	Proper vision statement
<b>Human Capital</b>	Crowd possesses skills
	Diversity of crowd
	Provide education
<b>Infrastructure</b>	Ease of use of technology
	Research and development
<b>Linkage and trust</b>	Transparent communication
	Reputation system
	Knowledge sharing
<b>External Environment</b>	Governance
	Set rules and regulatory
	Task associated with crowd

Second phase is priority setting of the factors by pairwise comparison (weighing). The relative priority of the factors in rated using 1-9 AHP scale [20] as shown in Table IV.

TABLE IV. AHP SCALE

<b>Numerical Rating</b>	<b>Verbal Judgements of Preferences</b>
1	A is equally preferred to b
2	A is equally to moderately preferred over B
3	A is moderately preferred over B
4	A is moderately to strongly preferred over B
5	A is strongly preferred over B
6	A is strongly to very strongly preferred over B
7	A is very strongly preferred over B
8	A is very strongly to extremely preferred over B
9	A is extremely preferred over B

The next phase is pairwise comparison of factor on each category (scoring). Then, the ratings were normalized and averaged. Table V shows the summary of local weights.

TABLE V. SUMMARY OF LOCAL WEIGHT

<b>Category</b>	<b>CSFs</b>	<b>Local Weights</b>
Vision and Strategy	Implement reward system	0.767

	Proper vision statement	0.148
	Clear vision and purpose	0.085
Human capital	Provide training	0.703
	Diversity of crowd	0.207
	Crowd possess skills	0.0090
Infrastructure	Ease of use of technology	0.569
	Research and development	0.431
Linkage and trust	Reputation system	0.693
	Knowledge sharing	0.211
	Transparency communication	0.096
External environment	Set rules and regulatory	0.604
	Task associated with crowd	0.326
	Governance	0.070

In the final step, the factors scores are combined with the category weights to produce an overall score for each factor. Table VI shows the global weights based on the CSF ranking.

TABLE VI. CSFs RANKING WITH GLOBAL WEIGHTS

<b>CSFs</b>	<b>Global weights</b>	<b>Categories</b>	<b>Rank</b>
Reputation system	0.297	Linkage and trust	1
Ease of use of technology	0.143	Infrastructure	2
Provide training	0.121	Human capital	3
Research and development	0.108	Infrastructure	4
Knowledge sharing	0.090	Linkage and trust	5
Set rules and regulatory	0.070	External environment	6
Transparency communication	0.041	Linkage and trust	7
Task associated with crowd	0.037	External environment	8
Diversity of crowd	0.036	Human capital	9
Implement rewards system	0.025	Vision and strategy	10
Crowd possesses skills	0.016	Human capital	11
Governance	0.008	External environment	12
Proper vision statement	0.004	Vision and strategy	13
Clear vision and purpose	0.003	Vision and strategy	14

From table VI, it can be seen that reputation system has the highest ranking with global weight of 0.297. In micro sourcing environment, workers and job provider

are connected through platform. Hence, in order to attract new workers and sustain existing ones, the platform has to look for solution to reduce the perceived risks. By having reputation system, micro workers efforts can be recorded. Additionally, by having reputation system, workers will be rewarded in term of stars, scores and others based on their efforts. This is believed to increase the trust of micro workers towards platform and motivated them to accomplish task with better quality. Besides micro workers and platform, job provider is also the main actor in micro sourcing initiative. They will be responsible to produce the volume of micro task in the market. Without enough volume, there will not be enough jobs available for micro workers to sustain the industry. In Malaysia, there is a wide range of firms, public agencies, local and international that can be tapped as micro sourcing job providers for local market. Thus, to ensure the success of micro sourcing initiatives, job provider should also have their reputation system so that their contribution towards micro sourcing implementation can be better appreciated and the trust towards the whole micro sourcing can be increased.

The second ranking of CSF for micro sourcing is ease of use of technology. Tasks in micro sourcing can be completed under flexible conditions, for example, the micro workers can work at their own time and location. To complete the tasks, basic Internet infrastructure connected devices such as application-capable phones, tablets, notebooks or personal computers are required. Since the micro sourcing initiatives is targeted to the B40 group (low skill), it is important to provide the ease of use of technology so that micro sourcing can be sustain for a long time. In Malaysia, government has invested in various programs in rural areas, as well as at selected urban areas to increase people's access to the Internet. These programs, such as setting up public telecentres and building telecommunication towers, are intended to reduce the digital divide between rural and urban areas, and also increase access to Internet for the under-served sections of the society. The entire infrastructures are ready to be used by the micro workers. In addition, data from the Ministry of Rural and Regional Development or Kementerian Pembangunan Luar Bandar dan Wilayah (KPLBW) shows that most of the B40 households have mobile phones. Some of them have PCs at home while those who do not own PC or have Internet connection are able to access Internet at community centres and cyber cafes. Therefore, most of the B40 households can participate in micro sourcing using mobile phones and PCs to communicate with micro sourcing platforms.

From Table VI, it can be seen provide training is at the third rank. Training is necessary to ensure sustainability of any industry. This is particularly pertinent when considering the employability gap that is being seen today, where graduate can be deemed as non-employable due to skills gaps. As the micro sourcing initiative is targeted at certain groups of micro

workers especially the B40 group, skills training for these groups is a must since 52.3% of people in the B40 group have no education certificate and most of them have low to moderate competency in computer and Internet skills, as well as English proficiency.

At the fourth rank is research and development. The micro sourcing industry in Malaysia is still at its infancy stage. Therefore, lots of questions arise from potential role players from job provider, micro workers, platform and the enablers on the security and the sustainability of the industry. Proper regulatory and monitoring frameworks to govern the industry will provide confidence to public and private sectors, organizations and individuals to participate in the industry. Proper regulatory and monitoring frameworks will also create a healthy ecosystem with proper marketing, enforcement, security and documented procedure. Thus, research and development is one of the important CSF in ensuring the success of micro sourcing initiative in Malaysia.

At the fifth place as shown in Table VI is knowledge sharing. Micro sourcing requires the participation from job provider, micro workers and platform. In ability to ensure they can work together, knowledge sharing is very important. Job provider should be able to spell out clearly the types of job that can be offered to the B40 and promoting new way of doing work by adopting micro sourcing. Micro workers require guidelines on how to complete the task with quality. Meanwhile, platform should collaborate with other platform so that the capability to complete the task is increased. At the same time, everyone needs to communicate so share and disseminate information and knowledge so that they can complete the tasks efficiently and in more manageable way.

From the findings, the CSFs for micro sourcing initiatives in Malaysia can be concluded as Figure 1 below.

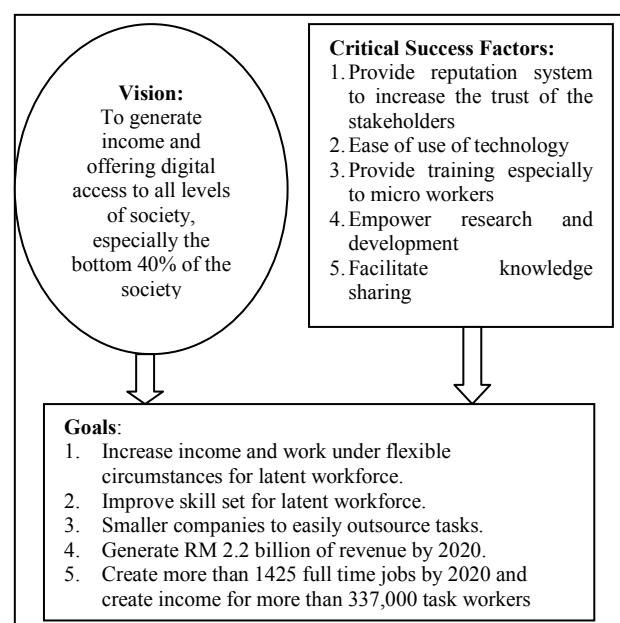


Figure 1. CSFs for Micro Sourcing Initiative in Malaysia

## V. CONCLUSION

This study is carried out to assess the CSF for micro sourcing initiative in Malaysia. The results had revealed that CSF in micro sourcing can be categorized into five categories namely vision and strategy (clear vision and purpose, implement reward system, proper vision statement), human capital crowd possesses skills, diversity of crowd and provide training), infrastructure (ease of use technology and research and development), linkage and trust (transparency communication, reputation system and knowledge sharing) and external environment category (involvement governance, set rules and regulatory and task associated with crowd). By using AHP method, reputation system has found to have the most imperative factor with a global weight of 0.297 followed by ease of use technology with the global weight of 0.143 and training with 0.121 of global weight reading.

Micro sourcing trends has developed remarkably in the last few years. Still, it is new in Malaysia. For the preliminary study, the analysis of the CSF is only focusing at the industry level rather than organizational, operational or individual level. Thus, in the future, it is recommended that the other levels to be taken into consideration. In addition, the viewpoints from multiple stakeholders such as the workers, platform operators and job provider will add the value to the results.

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