Understanding Vendor Selection in Crowdsourcing Marketplace: A Matter of Vendor-Task Fit and Swift Trust

*Research-in-Progress*

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**Abstract:** With the development of global crowdsourcing marketplace, clients now search for online vendors that meet their various requirements. In spite of this popularity, little research to date examines how clients make the vendor selection decision. In that vendor selection in outsourcing has long been an important IS research topic, this issue is worthy of investigation in the similar but different crowdsourcing marketplace. Based on previous literature, we propose the concept of vendor-task fit in this study and test its relationship to vendor selection. In addition, we posit that swift trust also influences client decisions. Our research model is being tested through a field study of the leading Chinese-based crowdsourcing platform zhubajie.com. Contributions will shed light on the phenomenon of crowdsourcing marketplace, especially, vendor selection issues.

**Key Words:** Crowdsourcing marketplace, vendor selection, vendor-task fit, swift trust, competence, reputation
Virtual Crowdsourcing Communities

Introduction
The vendor selection problem in outsourcing has been an abiding issue in IS research and practice (Cao et al. 2007; Cao and Wang 2007; Lacity and Hirschheim 1993). Vendor selection is one of the most critical steps, so much so that the success of outsourcing process is largely dependent on successful choice of vendors (Wadhwa and Ravindran 2007). There are a number of reasons that make vendor selection difficult for clients, especially in terms of IT projects. One pitfall leading to outsourcing failure is that clients have minimal knowledge about outsourcing methodologies, especially in the vendor selection process (Power et al. 2004). Crowdsourcing, which is the latest incarnation of outsourcing, also suffers from the vendor selection problem, especially since the crowdsourcing marketplace (CM) has undergone rapid transformation in the last decade or so.

Crowdsourcing has been well established as a credible vehicle for outsourcing work through its format of an open call to an undefined, albeit implicitly large community (Doan et al. 2011; Howe 2006; Rouse 2010). Currently, crowdsourcing is being used across a variety of different settings for sundry purposes, ranging from simple tasks such as letter writing and graphics design to complex R&D innovation (Erickson 2012). Within this wide range of applications, the focus of this study is on the crowdsourcing marketplace, which is a virtual community or online intermediary within which clients broadcast task requirements and provide certain monetary rewards for vendors to participate in completing tasks or competing for the rewards (Sun et al. 2012; Zogaj et al. 2014). Examples of this type of CM include odesk.com, elance.com, innocentive.com and numerous others worldwide. For further clarification in this paper, we next define the key roles in the CM context, shown as table 1. A CM is a trusted online intermediary ensuring that online vendors successfully complete the task requests and online clients pay for the charges. The crowdsourcing client is an entity that initiates the crowdsourcing process by submitting a task request and specifying the acceptance criteria. Crowdsourcing vendors are members of the crowd who bid for the job, undertake the execute tasks, and gain monetary reward from the clients for their work.

<table>
<thead>
<tr>
<th>Crowdscourcing Marketplace</th>
<th>A trusted intermediary ensuring that online vendors successfully complete the task requests and online clients pay for the charges</th>
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</thead>
<tbody>
<tr>
<td>Client</td>
<td>An entity that initiates the crowdsourcing process by submitting a task request and specifying the acceptance criteria</td>
</tr>
<tr>
<td>Vendor</td>
<td>Members of the crowdsourcing marketplace that execute tasks and gain monetary reward from the clients for their work</td>
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</table>

Table 1. Definition of Key Roles in Crowdsourcing Marketplace

Bearing the risks and difficulties in mind, how will the website features in the CM influence a client’s choice of certain vendors? At the moment it is uncertain because there are clear gaps in our understanding of crowdsourcing intermediaries, especially the client decision making processes based on CM website features. Research on crowdsourcing and its various applications is still in its inception in IS field (Zogaj et al. 2014). Seeing the complexity of the matter, online vendor selection in the CM is certainly worthy of investigation.

In order to pursue the logic of our study, it is first important to define the scope of the study. Among sundry crowdsourcing applications, in particular, a CM, there are clear-cut differences in practice between the contract and contest models. The contest model allows client to specify the reward and choose the best solution (no bids are solicited), while the contract model allows the client to choose the vendor based on qualifications and proposals for work. In the latter mode, the vendor undertakes the task with an agreed reward and specific time limit to finish the work. In fact, there is a contest element in the contract model but it occurs before the work is actually done. Our belief is that in the contract model, selection is a competitive process among the vendors, and client’s choice of the vendor is based on his or her evaluation of the vendor-task fit and swift trust, which are the two main foci of this study. Vendor-task fit as perceived by the client is proposed to be an important factor influencing vendor selection. In the mean time, swift trust which is developed prior to repeated interactions is introduced to be a second factor affecting client decisions. Therefore, this paper aims to answer the following research questions:
RQ1: What are the factors influencing client’s vendor selection decision in the crowdsourcing marketplace? And how important are these factors?

RQ2: Is swift trust a significant antecedent of vendor selection in the crowdsourcing marketplace?

The objective of the study is to derive and empirically test a theoretically grounded model of such factors leading to vendor selection. For this purpose, we drew from the previous literature that might help understand the outsourcing relationship between client and vendor, in particular, swift trust and person-job fit theories. Therefore, our model, derived by integrating relevant perspectives, aims to advance our theoretical understanding of vendor selection in the CM context as well as offer practical insights for client’s vendor selection decision making process.

The rest of the paper is organized as follows. We begin with a conceptual framework and background of the study. Then, the paper presents the research model and hypotheses. Next, the research methods and measurement instrument are shown. Last, we conclude the paper with potential contributions and limitations.

Conceptual Framework and Background

Vendor-Task Fit

Theories of “fit” have appeared in research domains such as industrial organizational psychology, human resource (HR) management and information systems (Chatman 1989; Edward 1991; Goodhue and Thompson 1995; Kristof-Brown et al. 2005) Although there are numerous conceptualizations of fit, the purpose of this study is to focus on the Vendor-Task Fit (VTF) in the CM context.

The literature that speaks most about the fit that is analogous to VTF in the present study is the organizational behavior (OB) literature stream on person-job (PJ) fit. Applicant recruitment and assessment have long been important research areas for HR management and OB, among which, person-job (PJ) fit is one major theoretical framing. In practice, PJ fit analysis is an integral part of strategic planning in organizations. It provides for a comprehensive analysis of organizational tasks and responsibilities. The main purpose of conducting such an analysis is to understand who the right person to get the work done properly is. Previous literature provides three perspectives on PJ fit (Carless 2005; Edward 1991). First, PJ fit in traditional job recruitment is the match between the individual and the demands of a specific job. Second, it refers to the match between employee needs and intrinsic rewards supplied by the job. Third, it refers to the congruence between job requirements and employee personality traits. The constellation of PJ fit theories posits job satisfaction, low job stress, motivation, individual performance, and retention as outcomes that are positively affected by PJ fit (Kristof 1996; Murray 1938).

VTF is more than analogous to PJ fit. In both cases, human characteristics are compared to job requirements to analyze the fit. In the CM context, vendors are similarly evaluated with a focus on whether a given vendor can accomplish a particular task or solve a specific problem. VTF in our context is defined as the degree to which a client feels the vendor matches with his or her task requirements posted on a CM.

Swift Trust

Creating a trust-based relationship also helps reduce the perceived risk for the client. A trust-based relationship between the client and vendor add extra value to the business relationship and undermines the propensity of the vendor to engage in opportunistic behavior. In a long run, vendors can be lead to understand that keeping a client as a potential long term customer could generate even more profitable contracts. The CM is not only able to help manage risks, but also is a proven way to help build trust. There are several mechanisms through which this occurs. Online feedback system and authentication helps mitigate the adverse selection risks. The authentication process requires vendors to upload real names as well as qualifications, a check that aids the client in verifying whether the information provided in the proposal or bid is true or not. In this way, the vendor will be less able to cheat or claim to be able to do more than they really can in order to get the job. Online feedback systems give the client the option to evaluate the vendor after the transaction is complete. Therefore, if the client feels the vendor is not
behaving well in any sense, the client’s negative feedback will add to the poor reputation associated with the vendor. In addition, *status reports* are a CM-provided feature of the website that acts as a monitoring system to alleviate moral hazard risks. Status reports are updates submitted by vendors with a record of work completed, progress made and plans for upcoming weeks. Through reading the reports, the client is able to measure the progress made by the vendor, a process which has a homologous mechanism in the physical world. Last but not least, if the vendor cannot deliver the service on time and transaction problems occur, the CM will play the role of *mediation*, and hopefully arbitrate a fair solution for both parties. Above all, the online vendors are in a business relationship, and it’s in their interest to maintain credibility with the CM to attract future clients.

The CM can build trust in the online setting even without a prior history between the client and vendor. In fact, one can easily argue that trust is even more important when outsourcing in virtual environment where clients and vendors communicate mainly through information and communication technologies and are often geographically dispersed. Swift trust that has developed prior to the client-vendor interaction explains, we believe, the selection behavior of the client (Meyerson et al. 1996; Xiaojuan Ou et al. 2014). In most cases the client has no prior working experience with the online vendors but starts engaging in trusting behavior only after the client choose a certain vendor. But certain kinds of swift trust can occur earlier, especially when institutions warranty the transaction. Institution-based trust is among the five factors believed to influence the formation of swift trust: role-based trust, rule based trust, third-party recommendation-based trust, dispositional trust, and category-based trust (Kramer 1999; Robert et al. 2009).

In this paper, we only examine the third-party recommendation-based trust, otherwise known as institution-based trust, because of its relevance to the crowdsourcing marketplace. Crowdsourcing intermediaries can facilitate outsourcing and transactions in many ways, but one of the main roles of the crowdsourcing intermediary is to help build trust in the crowdsourcing setting. Institution-based trust is trust that is based on guarantees and recommendations from third parties (Shapiro 1987; Zucker 1986). Such trust transference which refers to the generalization of impression about one entity to related entities has been shown to occur in the online context (Hamilton and Sherman 1996; Stewart 2003). Institution-based swift trust can be built in crowdsourcing marketplace because it is an effective mode of trust creation when clients and vendors have no previous history and come from different social and cultural backgrounds.

To reduce uncertainty and build trust, the crowdsourcing intermediary needs not only to provide a reliable and secure environment with fair and open rules and procedures but also to accredit client/vendor who register online and encourage benevolent transaction norms.

**Vendor’s Competence**

In that the concept of competence has been widely used in management, especially in HR assessment and evaluation (Boavitzis 1982; Yeung 1996), the importance of identifying worker capabilities is not new. As early as Taylor’s arguments, reported in *Shop Management* (Taylor 1911), worker competence has been seen as a problem. Taylor conducted “time and motion studies” to enable managers to identify the element of workers’ competence; he did this by restructuring it into rules, laws and formulas. Based on these descriptions of competence, Taylor demonstrated that managers could set up training to improve worker competence and performance. Later, competency test, rather than intelligence test, is proposed to be used for predicting an employee’s performance or job success (McClelland 1973). Besides, competency models are thus a detailed description of behaviors that articulate how employees are effective in a defined work setting (Mansfield 1998). In Bassellier et al.’s study (2003), IT competence is defined as “the set of IT-related knowledge and experience that a business manager possesses” (p. 317).

Traditionally, the rationalistic approach (Sandberg 2000) to competence sees it as a specific set of attributes known as KSAs, i.e. knowledge, skills, and abilities. Competence on vendor side of the traditional outsourcing context has not received enough attention in the IS literature (Nevo et al. 2012). On client side, Levina and Ross (2003) distinguished three types of operational capabilities: (1) client-specific capabilities, (2) process capabilities, and (3) human resource capabilities. Jarvenpaa and Mao(2008) studied capabilities of the subcontractors in the “subcontractor-primary vendor” relationship
and identified relevant factors that can help sustain subcontractor relationship with the primary service provider. Such studies have provided insights for the current study, but operational capabilities are not sufficient to capture the nature of vendor competence. We adopted the KSAs dimensions for construct conceptualization. Hence, similarly in this study, vendor’s competency is defined as a *trilarity*, including the knowledge, skills and ability of the vendor as perceived by the client to finish a certain task.

In order to be selected, vendors need to pay attention to their KSAs. First, vendors need to show their knowledge or specialty as it relates to the tasks, i.e., the body of information that can be applied directly to the performance of a given task. It can be presented the CM by the authentication process, such as their education background, certificates, qualifications, etc. Although knowledge is a key part of competence, it is not sufficient to represent the whole (Bassellier et al. 2003; Orlikowski 2002). Second, vendors need to demonstrate their skills in completing the tasks proficiently, i.e., skills such as the manual, verbal or mental manipulation of tools or other resources. For example, the programming languages a vendor has mastered become necessities for certain software development tasks. Third, the vendors need to prove that he or she has the ability to meet the requirements of a client. i.e., the powers to perform the required job function and carry out relevant activities.

**Research Model and Hypotheses Development**

Setting forth vendor-task fit as a key determinant of choice of vendor, the study first intends to examine the test the relationship between vendor-task fit and vendor selection. Extensions to the theoretical model and consistent with previous literature on swift trust, the paper explore the possible mediating role of swift trust on vendor selection. Figure 1 depicts the research model for the study. Hypotheses are developed according to the path in this model.

**The Relationship between Vendor Preference (VP) and Vendor-Task fit (VTF)**

Vendor preference is defined as the degree of client’s willingness to choose the vendor to perform his or her task. Vendor preference is greatly decided by the user evaluation of the vendor-task fit. The more the client feels the vendor fulfills his or her requirements, i.e., the better the fit, the more preference the client has for a given vendor.

*H1: Client evaluation of vendor-task fit will positively influence his or her vendor preference.*

**The Relationship between CSTV and VP**

Trust has been argued as a critical factor in stimulating purchases over the internet (Ba and Pavlou 2002; Gefen 2000; Jarvenpaa et al. 2000; Pavlou and Gefen 2004), as well as outsourcing relationships (Goo et al. 2009; Langfield-Smith and Smith 2003). The quickly formed client swift trust on vendors (CSTV) is important in the client evaluation of vendor preference. Trust serves as the lubricant that not only reduces complexity and uncertainty, but also produces more positive effects on the client decision-making process.
making in the E-commerce environment. Therefore, it is hypothesized that the swift trust will influence the client’s vendor preference.

\[H2: \text{Client swift trust on vendors will positively influence client’s vendor preference.}\]

**Perceived Vendor Competence**

Vendor competence has a positive effect on his or her performance at the CM. From the perspective of client, the perceived vendor competence will influence the evaluation of the vendor preference. Vendor with higher perceived competence is more likely to be chosen by the client. In other words, the higher the perceived vendor competence, the higher the vendor preference.

\[H3: \text{Client evaluation of vendor preference will be positively affected by the perceived vendor competence.}\]

Previous literature has identified the factors influencing trust in interpersonal relationships (Gefen et al. 2003; Mayer et al. 1995; Vance et al. 2008). Competence, which is a broader concept than ability, will have the same effect on trust as well. It is thus hypothesized that high perceived vendor competence will help form the client swift trust on the vendor.

\[H4: \text{Client swift trust on vendors will be positively affected by the perceived vendor competence.}\]

**Perceived Online Reputation**

Reputation systems are considered as an important component of online communities, facilitating good behavior and cooperation among loosely connected and geographically dispersed economic agents (Dellarocas 2003; Resnick et al. 2000), who were in most cases up to this point, strangers on the internet. A vendor’s online reputation in this study is defined as the collective opinions and feedback on the vendor, typically based on the evaluation of the vendor’s previous work history and record.

A common aspect of many online transactions is feedback. As mentioned earlier, feedback systems are thought to be an authentic reflection of the vendor’s trading behaviors and impressions left on previous clients the vendor has worked with. In the e-commerce context, online reputation has been argued to have an effect on the user’s intention to purchase.

In the CM context, a vendor’s online reputation is a valid reference point for the client’s selection process. This is because the client should be able to form a belief about the vendor based, in part, on reputation and to make judgments. We argue that vendor’s online reputation has a positive influence on vendor preference.

\[H5: \text{Client evaluation of Vendor preference will be positively affected by vendor's perceived online reputation.}\]

Besides, as mentioned earlier, client swift trust on vendors is based on the third party mechanism such as feedback. Previous research also found the effect of feedback mechanism on buyer’s trust in sellers (Ba and Pavlou 2002).

\[H6: \text{Client swift trust of the vendor will be positively affected by a vendor’s perceived online reputation.}\]

**Research Method**

Data to empirically validate the hypotheses were collected through a filed study of clients on a CM in China. Over the last decade, China’s CM has undergone a rapid development. One of the leading players in the Chinese crowdsourcing marketplace, Zhubajie.com, was established in 2006 and will serve as our data source.

**Instrument Design**

To gather data from appropriate respondents, we adopted the recall method found in the marketing literature: this method helps respondents effectively retrieve information stored in their long term memory (Bagiozzi and Silk 1983; Bradburn 2004). Thus the instrument was designed to solicit a respondent’s perceptions of a recent sourcing experience with an online vendor. The survey included two parts. The first part measured the respondent’s perceptions of a vendor they have worked with. We asked the client to write down the vendor’s name they have chosen and the task name in order to assess the validity of their responses. The second part was focused on their recall of experiences with the vendor that
turned in the worst bid. They were invited to recuse themselves if they do not remember details about the worst bid.

Measures were adapted wherever available in accordance with previous literature. As for the measurement of VTF, we adopted a subjective fit perspective. Different approaches to measuring fit have been demonstrated in the literature, including subjective fit, objective fit, and engineering fit. Studies of subjective fit directly measure how well two components match (Venkatraman 1989). Table 2 shows the measurement instruments. A back translation approach (Hoskisson et al. 2000) is adopted since the instruments are first developed in English and then translated into Chinese.

<table>
<thead>
<tr>
<th>Construct #</th>
<th>Items</th>
<th>Sources</th>
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<tbody>
<tr>
<td><strong>Vendor-Task Fit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTF1</td>
<td>I feel this vendor suits my needs well.</td>
<td>(Cable and Judge 1996; Kristof-Brown et al. 2005; Piasentin and Chapman 2006)</td>
</tr>
<tr>
<td>VTF2</td>
<td>I think this vendor will satisfy my requirements to complete my task.</td>
<td></td>
</tr>
<tr>
<td>VTF3</td>
<td>I think this vendor meets my selection criteria.</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived Vendor Competence</strong></td>
<td></td>
<td>(Sandberg 2000; Edward, 1991)</td>
</tr>
<tr>
<td>PVC1</td>
<td>Based on my assessment, I feel the vendor has the skills, abilities, and knowledge to complete my task.</td>
<td></td>
</tr>
<tr>
<td>PVC2</td>
<td>After assessing the vendor, I feel this vendor’s skills, abilities and knowledge meet my requirements for the task I posted.</td>
<td></td>
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<tr>
<td>PVC3</td>
<td>The vendor’s skills, abilities, and knowledge match well with my needs in this task</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived Vendor Reputation</strong></td>
<td></td>
<td>(Pavlou and Gefen, 2004; Ba and Pavlou, 2002)</td>
</tr>
<tr>
<td>PVR1</td>
<td>This vendor has a good online reputation.</td>
<td></td>
</tr>
<tr>
<td>PVR2</td>
<td>This vendor has received good feedback from previous transactions.</td>
<td></td>
</tr>
<tr>
<td>PVR3</td>
<td>This vendor is consistently rated well by the online clients.</td>
<td></td>
</tr>
<tr>
<td>PVR4</td>
<td>This vendor has received positive comments in the marketplace.</td>
<td></td>
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<tr>
<td><strong>Client Swift Trust on the Vendor</strong></td>
<td></td>
<td>(Robert et al. 2009)</td>
</tr>
<tr>
<td>CSTV1</td>
<td>Seeing zhubajie.com as a trustworthy crowdsourcing marketplace, I would be comfortable giving this vendor my full trust.</td>
<td></td>
</tr>
<tr>
<td>CSTV2</td>
<td>Given that zhubajie.com is a trustworthy crowdsourcing marketplace, I am confident in working with this vendor.</td>
<td></td>
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<tr>
<td>CSTV3</td>
<td>Believing that zhubajie.com is a trustworthy crowdsourcing marketplace, I feel I would have no problem contracting with this vendor.</td>
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<tr>
<td><strong>Vendor Preference</strong></td>
<td></td>
<td>(Murray and Haubl 2011)</td>
</tr>
<tr>
<td>Overall, how strongly or weekly do you prefer the vendor? (9-Strongly Preferred, 1 Weakly Preferred)</td>
<td></td>
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</table>

Table 2. Questionnaire Item

**Data Analysis Technique**
Partial least squares (PLS) will be used to validate the measurement model and test the structural model. PLS is suitable for this study for the following reasons. First, PLS is well-suited for exploratory work and for prediction when the research theories are in early stages of development (Gefen and Straub 2005; Gefen et al. 2000). Second, PLS readily handle both formative and reflective constructs whereas covariance based SEM that all constructs have some reflective items for requires MIMIC modeling. Third, PLS does not require normally-distributed input data (Ringle et al., 2012; Gefen et al., 2011).

**Data Collection**

The data collection is conducted with the cooperation with zhubajie.com. We used client contact information on the task descriptions posted by the client to recruit vendors. For compensating the participants, 20 RMB was offered as an incentive. We confined our study of task type to IT projects only since it has been an area that IS researchers have long been paying attention to.

**Conclusion and Contribution**

Based on the theory of vendor-task fit and swift trust, this paper plans to test a research model on vendor selection in crowdsourcing marketplace. We are now conducting a preliminary data analysis of the pre-test. In addition, this research model needs to be further tested in a larger scale study which is being undertaken with the cooperation with zhubajie.com.

Our paper will be able to make several theoretical contributions to IS literature. First, it conceptualizes the role of vendor-task fit in the crowdsourcing marketplace. The HR literature already has abundant research on person-job fit in organization and individual level and our related construct VTF. This definition should be able to help understand the ongoing vendor selection problem in both the outsourcing and crowdsourcing context. Adopting a subjective fit perspective, we developed and validated the instrument for gathering data on the constructs.

Second, this study contributes to the trust literature by introducing swift trust as an important lens to better understand client evaluation of vendor preference. Previous literature has employed institution-based trust as an important factor in e-commerce and we extend this via swift trust, which applies mainly through its institution-based trust impact on the crowdsourcing marketplace.

**Acknowledgements**

This work was supported by National Natural Science Foundation of China (NSFC) grants 71171131 and China Scholarship Council.

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