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JOB APPLICANTS' USE OF ONLINE JOB BANKS: THE IMPACT OF TRANSACTION COST FACTORS AND PSYCHOLOGICAL VARIABLES

CHIA-HUNG HSIEH, CHIA-YI CHENG, AND SHU-CHEN WU
Ming Chuan University, Taiwan, ROC

In this study, we investigated the effects of transaction cost factors and psychological variables on job seekers' use of online job banks. Participants were 366 job applicants in Taiwan. The research results showed that information completeness, trust, and the asset specificity of online job banks had a significantly positive effect on job applicants' attitudes toward them. Of all the factors at play, asset specificity was found to have the strongest effect on job applicants' attitudes. We conclude that when job applicants establish a strong asset specificity relationship with online job banks, it enhances their attitude toward future job bank use.

Keywords: job bank, information completeness, trust, asset specificity, attitude, transaction cost factors, psychological variables.

Because of the popularity of the Internet and the low costs of online recruitment, job agent websites (job banks) have become the most common method for employers to find job applicants (Lin, 2010; Walker, Feild, Giles, Armenakis, & Bernerth, 2009). Applicants can find out about the latest job vacancies or job-related information, and apply for positions by posting a job application or resume. In 2011, 53.4% of job applicants in Taiwan used online job banks to search for jobs (Wu, 2011). The largest job bank has a database of 200,000 firms and 5.14 million job seekers. Previous researchers have addressed several aspects of job bank functions or services, including the interface, functionality, search suggestions, job descriptions, resume databases, and test services (Levine, 1969;

Chia-Hung Hsieh, Department of Business Administration, Ming Chuan University; Chia-Yi Cheng, Department of Risk Management and Insurance, Ming Chuan University; Shu-Chen Wu, College of Management, Ming Chuan University.
Correspondence concerning this article should be addressed to: Chia-Hung Hsieh, Department of Business Administration, Ming Chuan University, 250 Zhong-Shan North Road, Sec. 5, Taipei, Taiwan, ROC. Email: **chhsieh@mail.mcu.edu.tw**

Ullman & Huber, 1974; Williams, 2000). However, there are several unexplored aspects of job applicants that have recently attracted the attention of researchers from other disciplines (Bhattacherjee, 2002; Wu, 2011). An investigation of these issues in the context of job banks is important because job bank firms need to understand what services or features are attractive to job applicants. Furthermore, previous researchers (Ullman & Huber, 1974; Williams, 2000) have focused primarily on the establishment of online job bank systems. Very little research has been conducted on job applicants' psychological variables and the use of job banks for reducing transaction costs in job applications.

In this study, we sought to extend transaction cost theory (TCT) by addressing the gaps concerning job applicants' use of online job banks. We investigated the impact of four dimensions (information completeness, trust, asset specificity, and attitude toward use), and examined the effects of different demographic variables on job applicants' attitudes toward using job banks. Our results may be of use to both recruitment firms and job applicants.

Literature Review

The Effects of Information Completeness

The concept of information completeness is derived from TCT, and it is an indication of the information volume held by two parties who are involved in a transaction. Williamson (1991a, 1991b) suggested that because of the dynamic effects of both human factors and the transaction environment, a market transaction may become difficult, resulting in a transaction cost. The relationship between human factors and transaction environment factors is complicated. The total cost of a transaction includes both explicit and implicit costs. The explicit cost is the total financial cost of acquiring the product/s. The implicit cost includes information searching costs (i.e., human activities that seek information and create transaction behavior, such as searching the Internet, field visits, and meetings), moral hazard costs (opportunism, self-interest seeking with guile), and specific holdup costs (Chiou & Droge, 2006). Therefore, the variables in this study are based on the implicit costs of TCT, including information completeness, trust, and asset specificity (investments in physical or human assets that are dedicated to a particular supplier and whose redeployment entails considerable switching costs).

Transaction cost analysis (TCA) belongs to the New Institutional Economics paradigm. Coase's (1937) initial proposition was that firms and markets are alternative governance structures that differ in their transaction costs. TCA has generated considerable interest in other academic disciplines (beyond economics), including sociology, political science, organization theory, contract law, business strategy, corporate finance, and marketing. Over the past two decades, Williamson

(1975, 1985, 1996) has added considerable precision to Coase's general argument by identifying the types of exchanges that are more appropriately conducted within firm boundaries than within the market. Williamson's framework rests on the interplay between two main assumptions of human behavior (i.e., bounded rationality and opportunism) and two key dimensions of transactions (i.e., asset specificity and uncertainty). Rindfleisch and Heide (1997) provided a synthesis and integration of TCA. A particular manifestation of recent interest in TCA is a large number of empirical applications. Much of the empirical work has been conducted in managerial fields.

Regarding information completeness, Cober, Brown, and Levy (2004) suggested that information exposure in online recruitment is more effective than that in newspapers and magazines. Online recruitment allows for better communication quality for both firms and job applicants. The main reason is that the simple webpages of online job banks provide both a searching function and specific career opportunities for job applicants (Williams, 2000). Thus, the information completeness of their product is the key to the successful operation of these websites (Angehrn, 1997). Similarly, Ducoffe (1996) found that the information provided by websites influences users' attitudes. Based on the above, we suggest that it is important for job applicants to have access to the maximum amount of job-related content or information so that they can apply for the most desirable jobs in the shortest time. Information completeness will, therefore, enhance job applicants' attitudes toward the use of job banks, and thus, it was hypothesized that:

Hypothesis 1: Information completeness in online job banks will positively affect job applicants' attitude toward use.

The Effects of Trust

Morgan and Hunt (1994) divided trust into two categories. The first, belief, refers to the confidence of one party involved in the transaction in the reliability and honesty of the other party. The second is the behavioral intention to depend on others or the natural inclination to do so. According to Kini and Choobineh (1998), trust means the belief in a system's capability, reliability, and safety in high risk conditions. However, from the perspective of moral hazard in TCT, as Internet use becomes more widespread and as consumers encounter higher risks when using the Internet, reliable websites will attract increasing attention. Van der Heijden, Verhagen, and Creemers (2003) explored factors that influence consumers' intentions to purchase online at an electronic commerce website. They investigated online purchase intention using two different perspectives: a technology-oriented perspective and a trust-oriented perspective. They found that the trust-antecedent (perceived risk) and the technology-antecedent (perceived ease of use) directly influenced attitudes towards purchasing online.

In their study of trust factors, Walczuch and Henriette (2004) suggested that trust factors in online purchasing include the website customers' cognitive factors, experience factors, and knowledge factors. Likewise, Bhattacherjee (2002) indicated that the factors of trust include capability (expertise, information, and so on), integrity (justice of transaction and information use), care (problem solving and concern), and familiarity with websites. However, perceived website security has been found to positively influence consumers' trust and attitudes toward websites (Keen, 1997). Therefore, we suggest that if job applicants believe that a job bank's service quality is reliable, job applicants will be more willing to provide personal information to the job bank so that the job bank can find a job for them. In contrast, if job applicants are concerned about the possible exposure of their confidential information and/or the safety and reliability of the firm, then their use intention will be lower. Therefore, it was hypothesized that:
Hypothesis 2: Trust in job banks will positively affect job applicants' attitudes toward use.

The Effects of Asset Specificity

According to TCT, another important variable is asset specificity. Chiou and Droge (2006) suggested that asset specificity means that the buyers and sellers invest in specific tangible or intangible assets after the accomplishment of a transaction. When a specific transaction does not exist, the holding asset value will be lowered or will disappear. In other words, asset specificity is the investment necessary for maintaining certain specific transaction relationships. A cost will be associated with changing the transaction subjects. For example, the asset specificity creates mutual dependency because there are considerable switching costs involved in replacing a job bank. A job applicant may not be fully satisfied, but still will not want to switch job banks because of asset specificity. In terms of the asset specificity of job banks, job applicants mainly use them to search for jobs (Wu, 2011). It is likely that they will first become familiar with the system's interface, service content, or data searching capabilities, and will then provide a personal resume in order to construct and select their job search conditions. In this way, job applicants invest their personal time and effort in job banks. If they intend to switch to a different job bank, they will not be able to effectively transfer the original familiar system rules or personal information into the system of the new job bank. Thus, they must invest further time and effort, which will result in transaction costs. For job applicants, if they have constructed asset specificity (e.g., in formulating a resume or taking a personal evaluation test) in a job bank and they cannot transfer their investment to other job banks, they will face higher transfer costs and, therefore, have a lower intention to use other job banks.

Thus, we suggest that when job applicants construct asset specificity in job banks, it means that they have spent a certain amount of time becoming familiar with the system and services of those job banks, constructed a resume, and experienced network interaction. Once they are familiar with the job banks and perceive the convenience of the services, their attitude toward the use of job banks with asset specificity will be enhanced. Therefore, it was hypothesized that:

Hypothesis 3: Asset specificity of job banks will positively affect job applicants' attitude toward use.

Method

Participants

The research center of the largest online job bank in Taiwan administered a survey to a random sample of graduating university students (junior and senior years) and graduate students (first and second years following graduation) in Taiwan who intended to search for full-time or part-time jobs. In total, 366 valid samples were collected. Most of the respondents were female (59.6%) university students (78.7%).

Measures

Self-administered questionnaires were used for all measures. Where possible, established scales were used to measure the latent constructs in this study. Participants were asked to rate their intention to use job banks using a 5-point scale with options ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The measures were adapted from the theories discussed in the literature review, based on TCT. Measures included the following 26 items: information completeness, five items (Angehrn, 1997; Cober et al., 2004; Williams, 2000); trust, six items (Bhattacherjee, 2002; Keen, 1997; Morgan & Hunt, 1994; Walczuch & Henriette, 2004); asset specificity, eight items (Chiou & Droge, 2006; Chiou, Hsieh, & Yang, 2004; Williamson, 1991a); and attitude, seven items (Eagly & Chaiken, 1993; Feldman & Lynch, 1988; Herr, Kardes, & Kim, 1991; Rosenberg & Hanland, 1960). The demographic variables of gender and educational level were used as the measurement indicators (Kotler, 2002).

Factor Analysis and Reliability

To evaluate the validity of questions for each factor used to assess the independent variables, factor analysis was conducted. A principal components factor analysis of this study was conducted via oblique rotation analysis and independence among factors was not assumed. Factor loading values greater than .5 indicate high convergent validity. To analyze the reliability of scales, we

calculated Cronbach's alpha coefficients using SPSS version 17.0. Alpha values greater than .7 indicate high reliability.

Multivariate Analysis of Variance and Analysis of Variance

When searching for positions using job banks, applicants take into account transaction costs, which affect their attitude or behavior while selecting job banks. We used the 5-point Likert scale to measure how information completeness, trust, and asset specificity affect job applicants' attitudes (only one dependent variable). In this study, we assumed that job applicants' consideration of the job bank factors (information completeness, trust, and asset specificity) would positively affect their attitude toward job bank use. A multivariate analysis of variance (MANOVA) was performed to test the research hypotheses. In addition to verifying the effects of different demographic variables on job applicants' psychological variables, analysis of variance (ANOVA) was used to test the different relationships.

Results

Means, standard deviations, and correlations for the study variables are shown in Table 1. Variables with factor loadings of less than .4 should be deleted and not included in further factor analyses. We found that information completeness with a loading of five items is above .860 (Cronbach's $\alpha = .894$), trust with a loading of six items is above .860 (Cronbach's $\alpha = .893$), asset specificity with a loading of eight items is above .733 (Cronbach's $\alpha = .867$), and attitude with a loading of seven items is above .833 (Cronbach's $\alpha = .918$). The factor loadings of items for all four constructs are above .5 and all variables were therefore retained for further analysis (Sethi & King, 1994). The Cronbach's α for all four constructs was above .7, indicating all factors had high levels of consistency and the scale had a high level of reliability (DeVellis, 1991; Nunnally, 1978).

Table 1. *Means, Standard Deviations, and Correlations for Variables*

Variables	*M*	*SD*	Information completeness	Trust	Asset specificity	Attitude
Information completeness	3.787	.840	1			
Trust	3.596	.821	.497**	1		
Asset specificity	3.399	.850	.370**	.573**	1	
Attitude	3.817	.788	.420**	.517**	.465**	1

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

In this study, we focused on testing the causal relationships among constructs suggested in the research model. These relationships were supported by the multiple regression analysis we conducted using SPSS version 17.0, which proved useful for testing relationships among constructs.

According to the results of the multiple regression analysis shown in Table 2, the explained power of the effect of transaction costs and psychological factors when using job banks on job applicants' attitude toward use is 40.0%. Information completeness, trust, and asset specificity positively and significantly influence attitude toward use. Therefore, our hypotheses were supported. Asset specificity has the strongest effect on job applicants' attitudes toward use (β = .363, $p < .001$), followed by trust (β = .304, $p < .001$), and then information completeness (β = .115, $p < .01$).

Table 2. *Test of Between-subjects Effects According to Attitude*

Multi-regression model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	β	Std. error			
Information completeness	.109	.052	.115	2.113	.035*
Trust	.299	.055	.304	5.474	.000***
Asset specificity	.324	.040	.363	8.120	.000***
R^2 = .400					

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

In addition to verifying the effects of different demographic variables (gender and education) on job applicants' psychological variables (attitude toward use), an ANOVA was performed and the results partially supported the research model (see Tables 3 and 4). The ANOVA results are shown in Table 3 and it was found that job applicant gender did not have a significant influence on attitude toward use. However, different educational levels did influence trust and attitude toward use (F = 4.341, $p < .01$). Post hoc tests revealed that junior students' attitudes toward use of job banks is significantly lower than those of senior students, first year graduate students, and second year graduate students (see Table 4).

Table 3. *ANOVA Results for of Gender and Education Differences*

Between groups	Dependent variables	Sum of squares	df	Mean square	F	Sig.
Gender	Information completeness	.555	1	.555	1.002	.318
	Trust	.036	1	.036	.069	.793
	Asset specificity	.514	1	.514	.809	.369
	Attitude	.104	1	.104	.206	.650
Education	Information completeness	2.717	3	.906	1.642	.179
	Trust	6.586	3	2.195	4.341	.005**
	Asset specificity	3.535	3	1.178	1.869	.134
	Attitude	.609	3	.203	.400	.753

Note. ** $p < .01$.

Table 4. *Scheffé Multiple Comparison Post Hoc Tests*

Dimension	(I)	(J)	Mean difference (I-J)	Std. error	Sig.	Post hoc
Trust	(1) Junior	(2) Senior	-.16667*	.08383	.048*	(1) < (2)
						(1) < (3)
						(1) < (4)
		(3) Graduate 1	-.44643*	.14664	.003**	
		(4) Graduate 2	-.28000*	.11643	.017*	
	(2) Senior	(1) Junior	.16667*	.08383	.048*	(2) > (1)
		(3) Graduate 1	-.27976	.14714	.058	
		(4) Graduate 2	-.11333	.11706	.334	
	(3) Graduate 1	(1) Junior	.44643*	.14664	.003**	(3) > (1)
		(2) Senior	.27976	.14714	.058	
		(4) Graduate 2	.16643	.16786	.322	
	(4) Graduate 2	(1) Junior	.28000*	.11643	.017*	(4) > (1)
		(2) Senior	.11333	.11706	.334	
		(3) Graduate 1	-.16643	.16786	.322	

Note. * $p < .05$, ** $p < .01$.

Discussion

In this study, we probed into job applicants' perceived transaction costs and psychological factors when using job banks, and found that information completeness, increased trust, and high asset specificity tend to positively affect job applicants' attitudes toward use. Our findings have important theoretical implications for online job banks. Employers who list vacancies with job banks should provide complete recruitment information as well as immediate and precise job vacancy content to ensure job applicants' continuous use (Walker et al., 2011). This point is emphasized by Chiou et al. (2004), who suggested that the firms' support service and trust are the most important factors influencing customers' satisfaction. Therefore, job banks should provide reliable, high quality services to job applicants to increase their trust, and thereby enhance the frequency of use and positively impact the attitude of users. In addition, when using job banks, job applicants must first become members and post their resumes within the bank; thus, they construct asset specificity with those job banks. With relation to this, Chiou and Droge (2006) emphasized the importance of asset specificity.

Furthermore, our findings have important practical implications for online job banks. We found that the influence of asset specificity is significantly greater than that of either trust or information completeness. We believe this is because once job applicants access job banks they become familiar with the operating system and save their personal information within the bank. When they intend to search

for jobs in the future, they treat the firms registered to online job banks as their target prospects. Therefore, employers who list vacancies with online job banks should provide special promotions or other benefits to loyal customers. The result of diverse and customized services is that asset specificity between job applicants and online job banks will be more pronounced. Finally, since gender was not found to affect the variables of interest in this study, online job banks do not have to provide customized service based on use by male or female applicants. However, as regards educational level, since university students just beginning their education are not facing the job market immediately, their trust in online job banks is relatively lower. Therefore, constructing perceived trust is critical for online job banks.

There were limitations to this study in that since we focused on the recruitment of job banks, the influences of other recruitment channels on job applicants' attitudes were not considered. This is because online job banks were the main focus. In future studies, researchers could delve into other recruitment channels, such as newspapers, job fairs, and teacher referrals, to explore job applicants' psychological variables. Future researchers may also test the model using other variables, such as the type of job being applied for, which can also be considered as a criterion of online job banks for strategic planning.

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