Predicting On-line Knowledge-transfer Intention: a comparison of the theory of reasoned action and the theory of planned behavior

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Abstract: This paper designed a interactive loop for triggering knowledge transfer. This paper tests the ability of two technology behavior theory model – the theory of reasoned action and the theory of planned behavior-in predicting on-line knowledge-transfer intention. In addition, a comparison of the two theories is conducted. Data were collected from web-based surveys of NKNU (n=385) by using self-administered questionnaires. These results suggest that the theory of planned behavior provides the best fit to the data and explains the highest proportion of variation in online knowledge-transfer intention.

Keywords: On-line knowledge-transfer, Knowledge-transfer intention, Theory of reasoned action, Theory of planned behavior, Lisrel

1. Introduction
Knowledge transfer can be done by working together, communicating, learning by doing or based on group decision making procedure. Knowledge transfer is an integral part of professional learning life. It represents the transmission of knowledge and the appropriate use of the transmitted knowledge[1]. The goal is to
promote knowledge sharing[2], collaboration and networking. It can involve accessing valuable or scarce resources, new expertise, and new insight, cross fertilization of knowledge. Collaboration implies the ability to connect diverse assets into unique capabilities in pursuit of new opportunities mainly for professional growth.

2. Literature Review

2.1 Knowledge Transfer

Knowledge transfer is a process by which relevant information is made available and accessible for practicing, planning, and policy-making through interactive engagement with audiences. It is supported by organized materials and a communications strategy that enhances the credibility of the professional community and reinforces key messages from interactions[3-5]. The knowledge can be either tangible or intangible[6]. Knowledge transfer is the act transferring knowledge from one individual to another by means of mentoring, training, documentation, and other collaboration [7]. Unstructured intangible experiences and knowledge are usually difficult to represent and instantiate, which engenders the hardship of knowledge transfer and sharing.[8] The clearest case is patterns. Patterns offer a general vehicle for sharing requirements engineering experience. Patterns enable knowledge transfer at the level of practical experience. [9] The linkage providing is also major environment structure for knowledge transfer, no matter regions or nations.[10]

2.2. Theory of reasoned action

The theory of reasoned action regards a knowledge worker’s behavior as determined by the worker’s behavioral intention, where behavioral intention is a function of ‘attitude toward the behavior’ and ‘subjective norm’ [11]. The theory predicts intention to perform a behavior by knowledge worker’s attitude toward that behavior rather than by worker’s attitude toward a product or service. Also, a worker’s intention to perform a certain behavior may be influenced by the normative social beliefs held by the worker. As an example, a worker might have a very favorable attitude toward having a discussion before formal meetings. However, the intention to actually held the discussion may be influenced by the worker’s beliefs about the appropriateness (i.e. the perceived social norm) of holding a discussion in the current situation (group-conducting project or solo project) and her/his motivation to comply with those normative beliefs[12]. The theory of reasoned action is concerned with rational, and systematic behavior [11, 13]. This assumption has been widely criticized. Sheppard, Hartwick, and Warshaw [14] argue that researchers are often interested in situations in which the target behavior is not completely under the worker’s control. However, as observed by Sheppard et al., actions that are at least in part determined by factors beyond individuals volitional control fall outside the boundary conditions established for the model (p. 326). For example, a worker may be prevented from transferring knowledge online if the worker perceives the information process as too complex or if the worker does not possess the resources necessary to perform the considered behavior. Such considerations are incorporated into the theory of planned behavior [15, 16]. In comparison with the theory of reasoned action, the theory of planned behavior adds ‘perceived
behavioral control (PBC)’ as a determinant of behavioral intention.

2.3. Theory of planned behavior
The theory of planned behavior is therefore an extension of the theory of reasoned action. PBC can be conceptualized as the worker’s subjective belief about how difficult it will be for that worker to generate the behavior in question. The concept of PBC has been considered in relation to a number of research settings. In investigating consumer complaint behavior Stephens and Gwinner [17] use the term ‘secondary appraisal’ as a conceptualization of a consumer’s perceived ability to deal with an unsatisfactory experience (e.g., file a complaint). Shim et al. [18] have proposed and tested an online purchase intentions model, which includes the concept of PBC. In studying unethical behavior Chang [13] has applied both the theory of reasoned action and the theory of planned behavior and thus included PBC in the investigation. In building a conceptual model of arbitrator acceptability Posthuma and Dworkin [19] included PBC among a number of other key concepts adapted from, e.g., control theory and organizational justice theories.

The theory of reasoned action and the theory of planned behavior are both displayed in Figure 1 (Model 1). In Figure 2, the theory of planned behavior model was illustrated (Model 2). In addition to investigating the ability of theory of reasoned action and the theory of planned behavior in predicting consumer online knowledge transfer BI, we also test whether the inclusion of a path from SN to attitude (Model 3) will improve the predictive power of online knowledge transfer BI as it has been indicated by other studies [13, 20]. All arrows in Fig. 1 therefore represent Model 3. The prediction of actual behavior was not included in our research design.

3. Methodology
3.1. Data collection
The data presented in this paper were collected from online (web-based) surveys of National Kaohsiung Normal University using self-
administered questionnaires. The sample (n = 385) was collected among e-learning platform in May 2006.

3.2 Measurements

Multiple item scales were developed for each of the four constructs shown in Figure 1, 2 , and 3. SN (subjective norm) was measured by obtaining the respondents’ level of agreement to the following two statements: (1) members of my friends think that it is a good idea to transfer knowledge via the Internet and, (2) most of my friends and acquaintances think that learning via the Internet is a good idea. A five-point Likert scale (1=disagree totally; 5=agree totally) measured respondents’ level of agreement to the two statements. The two statements were derived from Thompson et al. [21]. PBC was measured by five items representing respondents’ perceptions of the ease of online knowledge transferring as well as possible obstacles related to online knowledge transferring. The included items (refer to the Appendix) were derived from literature concerning PBC [13, 20]. Attitude toward online knowledge transferring was measured by two items representing respondents’ overall evaluation of the attractiveness of carrying out online knowledge transferring. A five-point Likert scale (1=disagree totally; 5=agree totally) measured respondents’ level of agreement to the following two statements: (1) online knowledge transfer is attractive to me in my daily work and, (2) knowledge transfer via the Internet is well suited to the way in which I normally works. Online knowledge transfer BI was measured by obtaining the response to the following two questions (items): (1) How likely is it that over the near future you will transfer knowledge via the Internet? A seven-point semantic scale (1=not likely at all; 7=very likely) measured the response. (2) How large a part of your knowledge transferring do you intend to carry out via the Internet over the near future? A seven-point scale ranging from 0% to more than 100% was applied.

The applied constructs and measurements are all displayed in the table 1.

<table>
<thead>
<tr>
<th>Table 1. Items used to measure the constructs in surveys</th>
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<tbody>
<tr>
<td><strong>Subjective norm of knowledge transfer</strong></td>
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<tr>
<td>(SN1) members of my friends think that it is a good idea to transfer knowledge via the Internet</td>
</tr>
<tr>
<td>(SN2) most of my friends and acquaintances think that learning via the Internet is a good idea</td>
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<tr>
<td><strong>Attitude toward online knowledge transfer</strong></td>
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<tr>
<td>(A1) online knowledge transfer is attractive to me in my daily work</td>
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<tr>
<td>(A2) knowledge transfer via the Internet is well suited to the way in which I normally works</td>
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<tr>
<td><strong>Perceived behavioral control</strong></td>
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<td>(PBC1) In general, online knowledge transfer is very complex</td>
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<tr>
<td>(PBC2) It is hard to find the needed knowledge when searching information via the Internet</td>
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<tr>
<td>(PBC3) With online knowledge transfer, it is difficult to get informations</td>
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<tr>
<td>(PBC4) In general, online knowledge transfer yields few problems for me</td>
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<td>(PBC5) It is difficult to receive information transferred via the Internet at home</td>
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<tr>
<td><strong>Online grocery buying intention</strong></td>
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<tr>
<td>(BI1) How likely is it that over the near future you will transfer knowledge via the Internet?</td>
</tr>
<tr>
<td>(BI2) How large a part of your knowledge transferring do you intend to carry out via the Internet over the near future?</td>
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</table>

4. Results

4.1 Initial model considerations

Conducting an exploratory factor analysis showed that the hypothesized discrimination between constructs was generally maintained in both
experiments. All relevant factor loadings were also significant (p<0.01). These initial model considerations indicate that the constructs do exist and that they are tapped by the measures (scales) used.

4.2. Model specification
The model in Figure 1 was translated into a LISREL model consisting of a measurement part (confirmatory factor analysis) and a structural equation part (simultaneous linear regression). The relationships between the variables were estimated by maximum likelihood estimation. The model in Figure 1 was tested using a two-stage analysis[22]. First, the measurement model is developed by conducting confirmatory factor analysis. Next, the structural equation paths are estimated to test the three proposed models. To investigate which structural equation model best explains the sample covariance, we conducted nested-model comparisons[13, 23]. The theory of reasoned action (Model 1) is nested within the theory of planned behavior (Model 2) by setting the path to zero from PBC to BI [13]. Setting the path to zero from SN to attitude nests the theory of planned behavior within Model 3. Chi-square difference tests are calculated in order to analyze possible significant improvements in the model fit. Possible improvements in the proportion of variation in BI explained by the constructs included in Models 1, 2, and 3 are also considered.

4.3. Confirmatory factor analysis
All four scales were tested simultaneously in one confirmatory factor analysis model. In this model, each scale item is only allowed to load on one factor and cannot cross-load on other factors. The results of the confirmatory factor analysis, including the standardized factor loadings, construct reliabilities, and proportion of extracted variance, were also calculated. All factor loadings were significant (p<0.05) which demonstrate that the chosen generic questions for each latent variable reflect a single underlying construct. The reliabilities and variance extracted for each variable indicate that the model was reliable and valid. All construct reliabilities exceed, or are close to, 0.70 [24]. Variance extracted estimates were all above 0.5 (most were above 0.50). The reliabilities and variance were computed using indicator standardized loadings and measurement errors [18, 22].

4.4. Structural equation results
The results of the structural equation modeling revealed that the χ² for all the estimated models (Models 1 to 3) had a p<0.01 indicating that the models fail to fit in an absolute sense. However, since the χ²-test is very powerful when n is large, even a good fitting model (i.e., a model with just small discrepancies between observed and predicted covariances) could be rejected. Thus, several writers[25] recommend that the χ² measure should be complemented with other goodness-of-fit measures. The values of the goodness-of-fit index (GFI) were for all the estimated models above 0.94, which indicate a good absolute model fit. The point estimates of RMSEA were between 0.082 and 0.110, which for all the estimated models indicate a reasonable fit of the model in relation to the degrees of freedom. The Bentler and Bonett normed fit index (NFI) showed values above 0.95. These values suggest an acceptable improvement of fit over the null model. In addition, the values of the comparative fit index (CFI) were above 0.95 for all the
This page contains a section on evaluating models for predicting online knowledge transfer. It also discusses the theories of reasoned action and planned behavior. The reference section includes several scholarly works cited.


