How Coaligned Stakeholder Support Enhances End User’s Perceived ERP Performance? The Pivotal Role of ERP Identity

Jeffrey C. F. Tai  
National Chiayi University  
jeffreyctai@mail.nctu.edu.tw

Kai Wang  
National University of Kaohsiung  
kwang@nuk.edu.tw

Hsin-Lu Chang  
National Chengchi University  
hlchang@nccu.edu.tw

Abstract

Completely involving end users in ERP projects is more difficult than that in IS development projects. End users possess less cooperation motivations in ERP post-implementation when diversified stakeholder groups strengthen their perceived boundaries with other ERP team members. This study argues that end user’s social identity toward the ERP project team (i.e., end user’s ERP identity) plays a pivotal role in resolving these issues. Based on social identity theory, we posit end user’s ERP identification affects ERP use-related activities and perceived performance impact of ERP due to ingroup favoritism. According to self-categorization theory, we contend that consistent support from ERP stakeholder groups facilitates high-quality interactions and formation of shared goals between end users and other team members. This study conducted a mail survey to validate the proposed model based on responses from 175 Taiwanese companies that have implemented ERP. The results showed that all the five hypotheses received empirical support. The conclusion and implications are offered.

1. Introduction

Enterprise resource planning (ERP) systems are large-scale, integrated, and packaged software applications that support information flows, business processes, and data analytics and reporting within and between organizations. They are purchased or leased from vendors in the form of commercial packages with best practices built-in. Organizations often need to adapt their business processes or configure/customize the ERP systems in order to eliminate ERP misfit [30]. Because IT departments do not possess all the required knowledge and capabilities for ERP implementation, ERP projects typically involve diversified stakeholder groups, such as consulting firms, ERP vendors, and top management [29]. Stakeholder diversity hence becomes a unique and important issue for the management of ERP projects [26].

Past research indicated that stakeholder diversity in team composition can cause management dilemmas. Multiple stakeholder identities create natural boundaries and thus divide an ERP project team into several subgroups [15]. This inevitably leads to an “us” versus “them” antagonism between end users and other team members, thus reducing the end users’ motivations to cooperate with others in ERP implementation [12]. In addition, not all of the end users can be involved in the ERP project until the post-implementation stage [23]. They thus are less likely to “buy in” all the changes determined in the ERP implementation stage; neither do they have chances to establish mutual relationships with other project team members. As a result, end users typically lack motivations to participate in post-implementation adaptations [39].

Because end users’ engagement in ERP post-implementation can affect the impact of ERP on individuals’ performance [23], it is important to enhance their motivation for cooperation in the stage of ERP post-implementation. The enhancement can be done through managing the problems caused by stakeholder diversity and lack of end user implementation participation. In social psychology, the social identity approach has been developed to analyze the role of self-conception in group membership, group process, and intergroup relations [32, 35]. The approach asserts that individuals tend to exhibit intragroup favoritism and intergroup discrimination based on social categories, even though they only had limited interactions before. Therefore, this study contends that end users’ attitudes toward the adopted ERP system and the extent of his/her cooperation in ERP post-implementation can be largely improved when they are socially identified with the ERP project team (hereafter, ERP identity). As such, the primary objective of this study is to examine how ERP identification enhances end users’ perceived performance impact of ERP?

2. Social identity Theories
There are two strands of social identity theories. One is social identity theory (SIT), which deals with how social identity affects intergroup behavior (e.g., prejudice, discrimination, intergroup conflict, and group cohesiveness). The other is self-categorization theory (SCT), which is concerned about how categorization underpins social identity and why the associated group and intergroup phenomena occur. The following sections will review and discuss the relevant literature of both theories since they will assist the development of our research hypotheses.

2.1. Social identity theory (SIT)

Tajfel [32] introduced the concept of social identity and defined it as “[an] individual’s knowledge that he belongs to certain social groups together with some emotional and value significance to him of this group membership” (p. 292). A group denotes a social category (e.g., nationality, political affiliation, organization, or work group) and exists psychologically if three or more people construe and evaluative themselves in terms of shared attributes that distinguish them collectively from other people. As such, social identity is a self-definition of category membership in the individual’s mind. Once a specific social identity becomes salient, it describes and prescribes an individual’s attitudes as a member of that group. That is, what one should think and feel and how one should behave. In addition, due to one’s need for self-esteem, social identity rests on intergroup social comparisons, which seeks to confirm or establish ingroup-favoring evaluative distinctiveness between the ingroup members and the outgroup members [1]. Accordingly, group members, motivated by their social identity, tend to adopt behavioral strategies in order to achieve or maintain ingroup-outgroup comparisons that favor their ingroups. Earlier social identity literature primarily focuses on specifying how beliefs about the nature of relations between groups (e.g., status, stability, permeability, and legitimacy) influence the way individuals pursue positive social identity [32, 33]. These developments are known as the social identity theory of intergroup behavior [35].

2.2. Self-categorization theory (SCT)

Self-categorization theory (SCT), or social identity theory of the group, focuses on the cognitive dimension of the social identity approach [35]. SCT explains how categorization of self and others underpins social identification and associated group and intergroup phenomena. Specifically, SCT posits that people cognitively represent a category or group as a prototype. A prototype consists of a set of attributes (perceptions, attitudes, feelings, and behaviors) that simultaneously capture the similarities within the group and the differences between the group and people who are not in that group. As such, social categorization of self and others into ingroup and outgroup accentuates the target to the relevant ingroup or outgroup prototype. In this process of depersonalization, targets are no longer conceived as unique individuals, but rather as embodiments of the relevant prototype. Therefore, social categorization of the self (i.e., self-categorization) cognitively assimilates an individual to the ingroup prototype and thus depersonalizes self-conception. Such transformation of self brings self-perception and behavior in line with the contextually relevant ingroup prototype. This depersonalization effect also underlies group phenomena, such as normative behavior, positive ingroup attitudes and cohesion, cooperation and altruism, emotional contagion and empathy, shared norms, and mutual influence.

In the IS literature, SIT and SCT have been applied to examine the interactions between a specific user and the members of an ingroup or outgroup. For example, Gefen and Ridings [12] examined how users' identification with the IT group affects their beliefs and behaviors. The authors posited that users' acceptance of the IT system increases when they believe that the inter-group boundary between them and the IT group is reduced and when they believe that they share values with the IT group. The authors also argued that such beliefs increase when the IT group is perceived to be responsive to users' requests. Similarly, several research applying SIT posited that users with social identification toward a social networking site (SNS) tend to possess greater extent of we-intention to use its services [5, 44]. These studies illustrated that SIT and SCT have gained increasing attention in the IS field.

3. Research hypotheses and model

Based on SIT and SCT, this study posits that end users’ identification toward ERP team can affect their perceptions of the introduced ERP system and post-implementation behaviors. Thus, a research model is formulated, as depicted in Figure 1.
3.1. Perceived performance impact of ERP

End users play a pivotal role in the post-implementation of ERP system. The extent of their system use also directly affects realized benefits of the system [39]. It is thus critical to evaluate ERP success by assessing the degree to which end users agree on the impact of ERP on their task performance. In this study, an individual’s perceived performance impact of ERP represents the surrogate of ERP success. Gattiker and Goodhue [11] indicated that the key benefits of ERP systems include higher quality data for decision-making, efficiency gains in business processes, and better coordination among different units or users. These benefits involve the improvements of end users’ task effectiveness, productivity, and performance, which are captured by the construct of perceived performance impact of ERP in this study [20].

3.2. ERP use-related activities

From the technology assimilation perspective, end users interact with the adopted ERP system and adapt any elements of the whole task-technology-individual work system in order to maximize the realized benefits [21]. Therefore, this study follows Barki et al. [3, p. 174] and defines ERP use-related activities as the set of behaviors an end user undertakes to interact with the ERP system in order to accomplish his/her tasks as well as to adapt, change, or modify any elements of his/her task-technology-individual system. ERP use-related activity includes three dimensions: technology interaction, task-technology adaptation, and individual adaptation. Technology interaction refers to the behaviors an end user performs to interact with the ERP system so as to accomplish tasks such as problem solving, decision making, or customer service [7]. Individual adaptation reflects the modifications an end user makes in order to adapt to the ERP system. The adaptation activities include learning through communicating with others as well as independent exploration behaviors of an end user. Task-technology adaptation represents behaviors directed at changing or modifying how the ERP system is deployed and used in an organization and includes activities such as technology adaptation, operational adaptation, and organizational adaptation [30].

Past literature indicated that many organizations that have installed ERP systems fail to diffuse them throughout the organization’s daily use [20]. Researchers thus suggest that ERP use should be examined in terms of an iterative, cumulative, and virtuous process involving activities of business adaptation and system configuration and tailoring [21]. End users are the major participants of the system-in-use, and their engagement should directly affect the effectiveness of situated learning required for continuously improving the installed systems [38]. Their ERP use-related activities hence are critical to the appropriation and post-implementation adaptations of the installed ERP systems. Specifically, technology interaction reflects an end-user’s effort to appropriate the features and functions of the installed ERP system. Such use activity allows end users to develop operational learning, thereby increasing the appropriation of ERP for facilitating their task performance [21]. Individual adaptation and task-technology adaptation represent an end-user’s effort to eliminate performance gaps after an ERP system goes live. These activities increase end users’ conceptual understanding about the embedded rules of the installed ERP systems, which can trigger subsequent business adaptations, system configurations, or system tailoring, if misfits between the actual and the modeled business processes are found [14]. With these efforts, it is easier for end users to achieve task-technology-individual fit with the adopted ERP system. As a result, the end users should perceive greater impact of ERP on their task performance.

\[ H_1: \text{An end user’s ERP use-related activity has a positive impact on his/her perceived performance impact of ERP.} \]

3.3. End User’s ERP identity

Lack of effective participation in ERP implementation reduces end users’ motivations to accept the system and engage in further adaptations [38]. End users may thus be less willing to adopt ERP systems because their requirements are not adequately addressed. Neither will they trust ERP project teams or ascribe credibility to the system-in-use because there are little communications and negotiations between them and other ERP stakeholders (e.g., software vendors, consultants, and the IS department) during the implementation stage to enhance relational quality [23]. Under such circumstances, there is a strong need to increase end users’ motivations to engage in ERP-related IS activities at the post-implementation stage.

Based on social identity theory, the ERP project team can be conceived as a social group composed of various stakeholders associated with ERP implementation or post-implementation. ERP identity thus can be defined as an end user’s social identification toward the ERP team when he/she
possesses the knowledge of the team membership, together with the value and emotional significance attached to that membership. Following Ellemers et al. [8], this study assesses ERP identity in terms of cognitive, evaluative, and emotional dimensions. Cognitive ERP identity reflects an end user’s self-categorization of his/her membership in the ERP team. Evaluative ERP identity represents an end user’s self-esteem about the ERP team, capturing a positive or negative value connotation attached to this group membership. Emotional ERP identity refers to a sense of emotional involvement with the ERP team, reflecting an end user’s affective commitment toward the group. Although past studies indicated that merely self-categorization is sufficient to induce people to behave in terms of their group membership, this is not necessarily the case for members of natural groups (e.g., gender) [8]. Therefore, this study adopts all of the three dimensions to fully capture the essence of an end user’s ERP identification.

In addition, self-categorization theory posits that individuals are motivated to act according to the group prototype when a specific social identity associated with the group becomes salient to them [17]. Prototypes are attributes that characterize groups and distinguish them from other groups. These attributes include beliefs, attitudes, feelings, and behaviors, which are formed based on the principle of maximizing intragroup similarities as well as intergroup differences. Because group members are exposed to similar social information, their prototypes are relatively consensual and shared. Prototypes hence render certainty to group members and confer them confidence about how to behave in and what to expect from their social worlds. As such, group members become depersonalized and tend to perceive and act similarly owing to the desire of uncertainty reduction [17].

Because an individual may possess various social identities, this study posits that an end user tends to perform prototypically when his/her ERP identity is brought into active use (i.e., salient) [25]. Specifically, cognitive ERP identity refers to that an end user is cognitively identified with the ERP team. He/she thus regards the act of supporting or promoting the ERP project as prototypical, which is also shared with other ERP team members. With such shared norm, the end user tends to perform the ERP-use related activities so as to reduce the feeling of uncertainty during the implementation process. Besides, evaluative ERP identity suggests that the end user is characterized by his/her positive evaluation about the shared norm. The end user thus tends to engage in the ERP use-related activities in order to enhance status or respect in the ERP team [36]. Finally, the presence of affective ERP identity means that ERP use-related activities are morally validated by ERP project team members. Hence, the end user tends to affectively commit to and perform the prototypical behavior. As a result, this study contends that an end user tends to perform greater extent of ERP use-related activities when he/she possess salient ERP identity.

\[ H_2: \text{An end user’s ERP identity has a positive impact on his/her ERP use-related activity.} \]

In ERP projects, end users typically have little interaction with other stakeholder groups (e.g., software vendors, consultants, and IS personnel) before engaging in the project. This creates perceived boundaries between them and other project team members. Gefen and Ridings [13] indicated that an intergroup boundary detracts from end users’ assessment that their use of the installed system will be well supported by outgroup members. Such boundary in turn decreases end users’ beliefs about the perceived performance impact of the system.

ERP identity provides an end user with a pivotal social cue for reducing uncertainty and managing expectations associated with the ERP project. The greater the extent of an end user’s cognitive ERP identity, the lower the degree of perceived boundaries between the end user and other ERP team members. Further, individuals tend to form a positive bias and ascribe positive attitudes to their group because the group membership can enhance their self-esteem or status [13, 28]. The presence of evaluative ERP identity hence suggests that an end user ascribes positive performance impact of ERP, which is similarly with other ERP team members. Therefore, this study posits that:

\[ H_3: \text{An end user’s ERP identity has a positive impact on his/her perceived performance impact of ERP.} \]

3.4. Coaligned stakeholder support

People typically belong to several social categories and hence have a variety of social identities. For a social categorization to affect behavior, it must be psychologically salient as the basis for perception and self-conception. Oakes [25] indicated that a social category becomes salient when it is accessible (accessibility) and can account for either similarities or differences among people (structural fit) or why people behave as they do (normative fit).

In this study, the ERP project team is an accessible social category for end users and is composed of participants from various stakeholder groups (e.g., software vendor, consultants, and IS personnel).
Such diversity divides an ERP project team into several subgroups, creating perceived boundaries between the end user and other group members, thus decreasing the salience of end users’ social identification toward the ERP project team [15]. To make ERP project team a social category that has optimal fit to end users, the differences resulting from diversified stakeholder groups (social categories) must be reduced. This can be achieved by increasing cooperative contact among the members of different subgroups so as to blur the existing boundaries [16].

One possible way to reduce intergroup boundary is through de-categorization, which reduces the salience of distinct membership categories through differentiation and personalization of between-group contact [4]. Differentiation allows distinctions to be made among outgroup members, and personalization creates perceptions of the uniqueness of outgroup members. The goal of these arrangements is a more interpersonally oriented and non-category-based form of responding. Individualization of outgroup members, therefore, makes the outgroup category less useful and less often used.

Intergroup boundary also can be reduced by means of re-categorization, which transforms the members’ perception of group boundaries from “us and them” to a more inclusive “we” [10]. This can be achieved by changing group boundaries and by creating a superordinate identity (i.e., common identity). The tension between recategorized representations can be reduced once they are included in the superordinate group. In so doing, intergroup bias can be reduced while ingroup versus outgroup conflict be resolved.

Because end users need support from various stakeholders when they engage in ERP post-implementation, this study suggests a new construct, coaligned ERP stakeholder support, to capture the consistency of the supporting efforts from software vendors, consultants, key users, IT department, and top management [38, 41]. Due to the aforementioned social identity interventions, we argue that coalignment of ERP stakeholder support can mitigate the salience of ingroup-outgroup boundary between end users and other stakeholders due to its effect of decategorization and recategorization. On the one hand, support from top management, key users, IT department, and software vendors make end users feel that they are treated just like a part of these stakeholder groups. The stereotypical outgroup perceptions that end users originally hold based on the vocational group boundaries hence can be de-emphasized due to such cooperative interactions. On the other hand, consistent support from various stakeholder groups makes end users feel that such effort for facilitating ERP success is stereotypical in dealing with ERP affairs. Moreover, cooperative interactions foster communication of shared goals between end users and other ERP stakeholder groups. Therefore, the common identity (i.e., the ERP project team) between end users and other ERP stakeholder groups can be reinforced by coaligned ERP stakeholder support. The ERP project team, as the superordinate group, thus becomes a psychologically salient self-categorization that is more situationally accessible to end users.

H4: Coaligned ERP stakeholder support has a positive impact on an end user’s ERP identity.

Organizational socialization literature suggests that one can learn social experiences by interpreting the responses of others in situated social interactions [37]. In such socialization processes, one learns what is valued and what is expected of a novice by the organization and behaves in an acceptable manner. Coaligned stakeholder support represents cooperative interactions between end users and other ERP stakeholder groups. Such cooperative interactions allow end users to clarify the functionalities and business processes of the installed ERP system and learn about the embedded business logics and mindsets inherited from software vendors or top management [14, 22]. As such, end users tend to perform the necessary supporting efforts in the ERP project due to their internalization of the behaviors exhibited by other ERP stakeholder groups, whether identification toward the ERP project team exists or not [42]. Accordingly, this study suggests that coaligned stakeholder support can facilitate end users to perform ERP use-related activity.

H5: Coaligned stakeholder support has a positive impact on an end user’s ERP use-related activity.

4. Method
4.1. Survey procedure and sample

A cross-sectional mail survey was administrated to collect data from large and medium-sized Taiwanese firms. Mail survey was adopted because it is more economic than face-to-face interview. Also, online survey was not considered in this study because most corporate directories of Taiwanese firms provide only postal information rather than email accounts of the chief executives. A draft questionnaire was developed based on measures identified in the literature. After compiling the English version of the questionnaire, the draft questionnaire items were translated into Chinese and verified for translation accuracy by two MIS professors. The Chinese
version of the questionnaire was then pretested by several ERP experts for face and content validity, resulting in minor wording modifications.

The final version of the questionnaire was distributed to 2000 firms randomly selected from the directory of Top 5000 Largest Firms in Taiwan, published by China Credit Information Services, Ltd. Because this research examines individual user’s use-related activities and perceived performance impact of ERP, the cover letter of the questionnaire asked the firms to distribute the questionnaire to end users of their ERP projects. In addition, the cover letter also reminded the recipients that for each effective and complete response returned, there will a donation of NT$30 to the Chinese Red Cross Foundation.

A total of 265 responses were collected, among which 175 were valid for subsequent analysis, yielding an effective response rate of 8.75%. Typically, the response rate of Taiwanese empirical studies is around 10–20% [e.g., 40]. Further, in the returned responses, 15 failed to deliver to destinations, 17 were filled with incomplete answers, and the remaining surveys were discarded since the responding firms did not implement ERP systems. As such, the low response rate of our research does not seem to be particularly exceptional. The characteristics of the responding firms are depicted in Table 1. Two-third of our samples are manufacturers, and the rests are services and financing companies. Since manufacturers represent over half of the 5000 largest companies in Taiwan, the relatively higher ratio of manufacturing firms in our sample does not seem to be unreasonable.

### Table 1. Sample Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>Manufacturing</td>
<td>120</td>
<td>68.5</td>
</tr>
<tr>
<td></td>
<td>Wholesaling and retailing</td>
<td>9</td>
<td>5.1</td>
</tr>
<tr>
<td></td>
<td>Transportation</td>
<td>5</td>
<td>2.9</td>
</tr>
<tr>
<td></td>
<td>Information and communication</td>
<td>7</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>Banking and financial</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>Electricity</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>Service</td>
<td>11</td>
<td>6.3</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>17</td>
<td>9.7</td>
</tr>
<tr>
<td>Revenue (NT$)</td>
<td>Less than 0.1 Billion</td>
<td>11</td>
<td>6.4</td>
</tr>
<tr>
<td></td>
<td>0.1 – 1 Billion</td>
<td>87</td>
<td>59.3</td>
</tr>
<tr>
<td></td>
<td>1 – 5 Billion</td>
<td>51</td>
<td>29.4</td>
</tr>
<tr>
<td></td>
<td>5 – 10 Billion</td>
<td>14</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>Greater than 10 Billion</td>
<td>10</td>
<td>5.8</td>
</tr>
<tr>
<td>Number of employees</td>
<td>Less than 50</td>
<td>23</td>
<td>14.9</td>
</tr>
<tr>
<td></td>
<td>51 – 200</td>
<td>76</td>
<td>43.4</td>
</tr>
<tr>
<td></td>
<td>201 – 1,000</td>
<td>56</td>
<td>32.0</td>
</tr>
<tr>
<td></td>
<td>Greater than 1,000</td>
<td>20</td>
<td>9.7</td>
</tr>
</tbody>
</table>

Given the low response rate of this study, we also performed a non-response test to rule out the possibility that the answers of responding firms differ from the potential answers of those firms that did not answer. Following Armstrong and Overton [2], we compared the sales and employee number of two groups of responding firms divided by dates of return using the independent sample t test. The results showed that the two groups were not significantly differed (p=0.847 and p=0.310, respectively). Therefore, non-response bias should not be a serious problem in this study.

### 4.2. Measures

The operationalization of research constructs was conducted by using validated items from prior research. Table 2 (shown in the Appendix¹) lists the operational definitions, measurement scales and major references of each research construct. All the constructs were measured in terms of five-point Likert scale. Based on Kositanurit [20], this study utilized three items to measure ERP performance. These items reflectively assessed the extent of end users’ agreement on that the ERP system “helps them more effective”, “has a positive impact on their job productivity”, and “is an important aid to their job performance.”

This study adapted Barki et al.’s [3] IS use-related activity to measure ERP use-related activity, which comprises technology interaction, task-technology adaptation, and individual adaptation as the underlying dimensions. These dimensions do not co-vary and interchange with each other and the direction of causality is from the dimensions to the higher-order factor [27]. Thus, ERP use-related activity was operationalized as a second-order formative construct. Besides, this study adapted the scale in [3] and utilized five, five, and four items to assess the three dimensions, respectively.

Based on SIT, ERP identification was operationalized as comprising three dimensions: cognitive identity, evaluative identity, and affective identity. It was found that the three dimensions were related and the direction of causality is from the higher-order factor to them [8]. Thus, ERP identification was designed as a second-order reflective construct. Besides, this study adapted [8] and utilized three, three, and two items to assess the three dimensions, respectively.

Last, we suggested that top management, key users, IT department, and software vendors are key stakeholders of the ERP team. By adopting the fit-as-covariation approach, we operationalized coaligned stakeholder support as reflecting an internal

¹ Due to space limitation, the appendix was not provided in this paper. Please contact the first author for the information.
consistency of the four dimensions [38]. Thus, coaligned stakeholder support is formulated as a second-order reflective construct. In addition, this study adapted existing scales and utilized three, five, six, and five items to measure support from IT department [12], key users [43], top management [41], and vendors [41], respectively.

5. Results

This study began the data analysis by validating the measurement quality of the research constructs. Because some of the constructs were formative and operationalized in terms of second-order factors, we adopted exploratory factor analysis (EFA) to assess individual item reliability, convergent validity, and discriminant validity. This study then utilized the partial least squares (PLS) approach to analyze construct interrelationships and test the proposed research hypotheses. PLS provides the ability to model formative latent constructs with small- to medium-sized samples [6]. By using ordinary least squares as the estimation technique, PLS performs an iterative set of factor analyses and a bootstrap procedure to estimate the significance of the paths. In this study, we used SmartPLS 2.0 (M3) Beta for the analysis.

5.1. Measurement model

This study adopted exploratory factor analysis (EFA) to assess the underlying factor structure of the measurement items. We performed KMO and Barlett’s test of sphericity to assess sampling adequacy of this study. The KMO value obtained was 0.857, which was greater than the recommended value of 0.8 [19]. The significance of Barlett’s test of sphericity was 0.000, which also satisfies the recommended criterion [19]. The results indicated that at least some correlations existed among the measurement items for generating coherent factors, which also implied that the items were suitable for EFA. In addition, a varimax rotation method was performed and latent root criterion, scree test, and percentage of variance explained were utilized to determine the number of latent variables in EFA. Ten factors were obtained in the analysis and accounted for 76.9% of total variances. In addition, individual item reliability was examined by observing the item-to-construct loadings and a factor loading of .71 and above indicates that 50 percent or more of the variance in the item is shared with the latent construct [18]. Discriminant validity was examined by observing the cross-loadings among the indicators of the constructs. Discriminant validity was judged as held when (1) each item’s correlation with its own construct is greater than its cross-correlation with other constructs, (2) the value of the square root of the AVE of each construct is larger than the correlations of this construct with all other constructs, and (3) correlation between pairs of constructs is below .90 [13]. We also assessed convergent validity of each research constructs by examining the reliability of constructs (Cronbach’s alpha) and average variance extracted (AVE) by constructs [9]. Based on the above validation procedures, we purified the measurement scales for subsequent analyses. All the mentioned information was provided in Table 3 and Table 4 in the Appendix of this paper.

5.2. Structural model

Before performing the PLS analysis, we first computed the composite factor scores for each of the dimensions of the second-order constructs and set the scores as the indicators of the respective constructs. We then adopted the bootstrap procedure with 200 resamples to generate t-statistics and standard errors of the path coefficient estimates. Path coefficients were interpreted as standardized beta weights in a regression analysis, and their values and the extent of significance could be utilized to assess whether research hypotheses gained empirical support. Figure 2 shows the path coefficients and explained variances of the constructs.

As shown in Figure 2, the R-square values of ERP identity, ERP use-related activities, and ERP performance range from .335 to .377. The results indicate that the variances of the endogenous variables were well explained by the corresponding antecedents. In addition, all of the five hypotheses gain significant empirical support, as indicated by the significant path coefficients in Figure 2.
5.3. Discussion

In ERP projects, the role end users play have changed from participants who communicate system requirements with developers to passive ones who only accept the implemented commercial-off-the-shelf packaged software. Stakeholder diversity of ERP project team further increases users’ perceived boundaries with other team members. These problems would reduce end users’ motivations and efforts expended to participate in post-implementation of ERP project, in turn, decreasing the potential benefits of ERP for them.

Our results shed lights to Wagner and Newell’s [39] viewpoint about how to develop effective user participation in the post-implementation of ERP so as to garner user interest and assistance for improving performance impact of ERP. Specifically, this study suggests that these problems can be mitigated by coaligned stakeholder support in ERP projects. When various stakeholders support and respond to end users consistently, two kinds of social influence processes emerge, namely, social identification and socialization.

On the one hand, end users develop social identification toward the ERP project team (H₄), making the team become a salient social category in which consistent supporting efforts are regarded as prototypical to deal with ERP affairs. End users thus become more willing to engage in ERP use-related activities during the post-implementation stage (H₂) and ascribe greater performance impact to the ERP system (H₃).

On the other hand, coaligned stakeholder support facilitates socialization of end users through cooperative interactions between various stakeholders and end users. End users thus learn that supporting ERP projects are normative and are expected of them. As such, they tend to engage in ERP use-related activities in greater extent, further improving their task-technology-individual fit (H₅) and resulting in positive impact of ERP on their tasks (H₆).

Past ERP research typically examined the role of socialization in knowledge management, which is pivotal to continuous improvements in the post-implementation of ERP [24]. In addition to socialization, our research demonstrates that social identification is also a critical social process that can enhance end users’ proactive engagement in the post-implementation of ERP, thereby, improving performance impact of ERP on end users. Accordingly, we assert that ERP managers should pay more attention to the social contagion effect of end users’ ERP identification. Our research offers an avenue to benefit from such effect through encouraging various ERP stakeholders to interact with end users consistently and responsively.

6. Conclusion

This study is only a first step to apply SIT and SCT to examine whether social identification facilitates end users’ engagement in post-implementation of ERP and their recognition of the performance impact of ERP. Although we confirm that coaligned stakeholder support facilitates end users’ ERP identification, more knowledge about how end users’ ERP identification develops is required. Past SIT and SCT literatures suggest that uncertainty reduction, self-enhancement and optimal distinctiveness are pivotal social identity motivations. Thus, we suggest that researchers can draw on these notions to identity relevant antecedents and process variables in the social identification process. We believe these efforts can help enhance our understanding about how to develop end users’ ERP identification and how such identification facilitates end users’ proactive engagement in the post-implementation of ERP.

This study has several limitations. First, the effective response rate of our survey was low. Although no non-response bias was found in our analysis, the external validity of our study still might be compromised. Second, this study relied on the sampled firms to distribute the questionnaires to their end users internally. But, we could not ensure that there was no selection bias in this process. This may reduce the representativeness of responding surveys. Third, manufacturing firms account for a greater proportion of the responding firms than that of the sampling firms. This makes our survey reflects more opinions of manufacturers rather than those of firms in other industries. Accordingly, the interpretations of our research findings should be more cautiously.

Reference


