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Abstract

This paper presents the results of a study that focuses on understanding the importance of empowerment as an enabler of Enterprise System (ES) success. This research draws from psychological and User empowerment concepts, using prior validated models and theories on empowerment and ES success measurement. The literature also suggests a conceptual linkage between empowerment and motivation. The data was gathered from 154 respondents in a large organisation, which had implemented Oracle Financials in 1996. Preliminary findings illustrate that user empowerment has a significant impact on ES success.

Keywords

Empowerment, User Empowerment, Psychological Empowerment, Enterprise System Success

INTRODUCTION

The business value of ES, and in general large software implementations, has been extensively debated in both the popular press and in the academic literature for over three decades. Organisations have spent significant resources and many years of implementation (Bingi et al., 1999a). Despite the potential benefits of ES, evidence of ES success has been mixed with some studies showing positive impacts of ES in organisations (Barua and Lee, 1997, Lehr and Lichtenberg, 1999, Mukherjee, 2001), while others have shown nil or detrimental impacts (Cameron and Quinn, 1988, Wilson, 1993).This disconnect between large ES investments and organisational performance can be attributed to a range of antecedents, including implementation approaches, business process improvements, and empowerment of users. (Bowen and Lawler, 1995, Brower, 1995, Koberg et al., 1999, Psoinos et al., 2000, Psoinos and Smithson, 2002, Sarkar and Lee, 2000, Siegall and Gardner, 2000, Sigler and Pearson, 2000, Spreitzer, 1992, 1996).

Enterprise System implementations are socio-technical processes, affecting tasks, people, technology and structure (Leavitt, 1964). Markus and Tanis (2000) also identify this element and proposed the engagement of the users as a key variable. Senior management and project managers often neglect the soft non-technical human issues (Mendel, 1999) and limit their focus on technical and financial aspects and post implementation training. Empowerment theory may assist in exploring the factors that empower employees to support such large scale changes occurring during the ES life cycle. Particularly, the motivational factors, influencing employees to initiate change in the face of these new realities, pose implications for management of both IT and non-IT employees. Further, ES have increased the ability of organisations to gather more information in greater detail and in real time, and widespread vertical and lateral dispersal of information throughout the organisations (Sia et al., 2002). This expanded information makes the users more visible across the organisation and thus is viewed as a means of empowering the users (Psoinos et al., 2000). Further, empowered employees display greater initiative (Thomas and Velthouse, 1990), and are more willing to change and innovate (Spreitzer, 1995). Thus, the purpose of the research is to contribute to the understanding of the above context by extricating the types of empowerment and assess the impact on ES success.

The paper is structured as follows. Firstly, the background literature on the informing theories of empowerment is outlined and the significance of user empowerment[12] study in enterprise systems context is described. Secondly, the rationale for developing the a priori model is summarised. Thirdly, the research methodology is described and the conduct and design of the survey is reported. Fourthly, (1) validation of the User empowerment instrument and constructs; (2) validation of the ES success instrument, are reported and the preliminary results are discussed. Lastly, the paper is summarised by outlining the key findings of the research, and points to the future directions of the study.

BACKGROUND LITERATURE

The following literature review begins with a brief overview of ES then it looks into the theories and framework of empowerment focussing on User and Psychological empowerment and then outlines the background literature supporting the relevance of empowerment in ES context.

Enterprise Systems

ES are software applications that connect and manage information flows across complex organisations, enabling decisions based on information that truly reflects the current state of their business. ES serve many industries and numerous organizational areas in an integrated fashion, attempting to automate operations, including supply chain management, inventory control, manufacturing scheduling, sales support, customer relationship management, financial and cost accounting, human resources and many other functions and processes in organizations. Despite the positive motivations for ES adoption, there exists much controversy surrounding the success of these systems e.g.(Bingi et al., 1999b, Chung and Snyder, 1999, Gable et al., 1998). There have been extensive studies of ES implementation success, critical success factors of ES (Holland et al., 1999), and measures of ES benefits (Shang and Seddon, 2002, Staehr et al., 2002), there has been no prior research that assesses empowerment as an enabler of ES success. It is this gap in the research that this research program addresses. Specifically, it is the purpose of this research to examine the User empowerment-ES success relationship.

Empowerment

It is revealing that empowerment of the employees has been a management goal for decades (Wilkinson, 1998) yet empowerment is an evolving construct and continues to attract management researchers and practitioners (Conger and Kanungo, 1988, Eylon and Au, 1999, Leach et al., 2001, Psoinos and Smithson, 2002, Spreitzer et al., 1997, Spreitzer and Quinn, 1996, Spreitzer and Quinn, 1997, Thomas and Velthouse, 1990, Wall et al., 2002). In management disciplines Conger and Kanungo (1988) were among the early researchers who established a strong theoretical relationship between empowerment and workers' effort-performance expectancies (Spreitzer, 1995, Thomas and Velthouse, 1990). In management literature, empowerment has been widely accepted as an enabler in attaining competitive advantage and organisational performance (Conger and Kanungo, 1988, Forrester, 2000, Spreitzer et al., 1997, Sundbo, 1999). Empowerment is also believed to be an effective mechanism of change management in large software installations (Holland et al., 1999, Hong and Kim, 2002, Markus and Tanis, 2000, Nah et al., 2001).

Empowerment has its roots in the theories of participative management where managers share goal-setting, information-processing and problem-solving activities, as well as decision making power with employees (Wagner, 1994). Another closely related concept is, user involvement[3] which emphasises cascading power, rewards, and training to all levels of employees including junior staffs with the aim of increasing worker discretion. Thus, the key overlap between empowerment notion, involvement, and participative management is encouraging and championing employees to actively participate in decision-making processes. Participative management is conceptually consistent with the idea of self-determination (Deci and Ryan, 2000). Traditional

1Our definition for the purpose of the study is that User empowerment is the expanded discretion the users have as a result of their current IS/ES work environment.

It is shaped by formal support from the management of an organisation and is expected to build the capacity of an individual, a team, and an enterprise to set priorities and

control resources essential for increasing organisational performance. It is a strategy aimed to give users more control and responsibility for their work.

3 Straub et al.'s (1988) meta-analytical reappraisal suggests that user involvement is a factor that must be considered in explaining the success of any Information System.

participative techniques are especially weak on the competence dimension; they are centered on fostering employees' suggestions (Evans and Fischer, 1992).

Spreitzer (1992, 1995) was one of the first consolidated studies on individual empowerment. Spreitzer (1992) defines Psychological empowerment as a "motivational construct manifested in four cognitions: meaning[4], competence[5], self-determination[6], and impact[7]". Together these four cognitions reflect an active, rather than a passive, orientation toward a work role. Furthermore, Spreitzer (1995) argues that empowerment is not a global construct across all situations, but specific to the work context in organisations (Spreitzer, 1995). Thus, a work-based measure[8] of empowerment should be developed (Spreitzer, 1996). Following Spreitzer's argument, it makes logical sense to investigate and develop ES work-based measure of empowerment. Although Spreitzer's (1995) launch pad study has explored the relationship between empowerment and individual outcomes, a more circumscribed relationship is needed to explain the level of empowerment of users and organisational outcome of ES success. The entire concept of empowerment in workplace is to gain strategic advantage in the current turbulent environment (Spreitzer, 1992). However, the Spreitzer et al.(1997) study appears to be limited in that the researchers did not identify and test for outcomes that could appropriately serve as measures of success at the organisational level.

Based on the readings of Spreitzer (1995), Doll et al. (2003) analysed User empowerment in the context of managerial effectiveness (Conger and Kanungo, 1988, Spreitzer, 1995, Thomas and Velthouse, 1990). Their model employed a four (4) dimensional model to characterise User empowerment: user autonomy, computer self-efficacy, intrinsic motivation, and perceived usefulness.

Thomas and Velthouse (1990) and Spreitzer (1995) convincingly demonstrated that empowerment is essentially a self-motivated, multi-dimensional learning process and concept, whose multiple levels of complex relationships cannot be effectively assigned to definite categories on a generic basis across all work environments. Along this line, in this research we seek to contribute to this understanding of the empowerment concept as a guiding factor in ES success. The study attempts to build a framework from previous research and to derive a unified model of the dimensions of User empowerment in ES implementations.

Empowerment and Motivation

Several of the principal theories of motivation have strong links to and dependencies upon the empowerment concept, as in the following examples:

According to Vroom and Yetton's (1973) expectancy theory workers who are empowered will have more control over their expected outcomes and empowered workers should in turn be more highly motivated than workers who are not empowered.

McGregor's(McGregor, 1960) (1960) Theory X and Theory Y state that managers tend to group their work force into two distinct categories. Theory X assumes that those making up the work force have objectives that run counter to those of the organization, and thus are not to be trusted and need to be constantly supervised. Theory Y assumes that the workers are mature, self-motivated, and self-controlled and need little in the way of organizational controls. Evidently, empowerment would be hard to implement if an organization's structure and systems have been made in accordance with Theory X. Most people are impelled by the need to attain a measure of self-fulfillment at work, and it is toward such needs that empowerment strategies must be aimed.

Maslow's (1943) hierarchy[9] is based on the principle that an individual's needs can be classified into groups of prepotent physiological and psychological needs. Again it is the higher needs of self-actualization, esteem, and affiliation for which empowerment offers the greatest potential.

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4 Meaning as the value of a work goal or purpose as judged in relation to an individual's own ideals or standards;

5 Competence or self-efficacy as an individual's belief in his or her capability to perform activities with skill;

6 Self-determination as an individual's sense of having choice in initiating and regulating actions and;

7 Impact as the degree to which an individual can influence how a job is done and its outcomes.

8 Work-based measure is one that is specific to the context. For the purpose of this study it is Enterprise Systems context.

9 Maslow's hierarchy:

      5. Self-actualization: self-fulfillment or the realization of one's potential;

Herzberg's (1964) motivation/hygiene theory, based on satisfiers and dissatisfiers, is another well-known theory of work motivation. The effectiveness of empowerment will be enhanced if the process is designed to provide opportunities for the workers to experience events that lead to satisfaction and reduce the events that lead to dissatisfaction.

Empowerment in Enterprise Systems Context

Sia et al. (2002) suggest that the inherent design of ES tends to give users more job discretion than their functional needs which eventually expands a user's job scope due to increased integration of front and backend processes. Users face a changing environment that is bundled with a sense of uncertainty, creating a hurdle in embracing the change or actively engaging in the various stages of ES implementation. From the perspective of the executives the advantages of an integrated monolithic ES are clearly evident and lead to less expenditure and enable the company to focus on optimising processes and streamlining the business. But to the users of the system, the advantages are usually unclear or imperceptible. Thus, top management support along with individual User's empowerment would be the most effective solution in such an enterprise-wide venture.

The classic case of FoxMeyer ES implementation provides valuable lessons on how to avoid ERP failure. Scott (1999) highlights lack of available users or staff with the sophistication to handle a fast-track installation as one of the reasons for failure. This clearly points the lack of competence or self-efficacy dimension amongst the ES users.

Livermore (2002) presents two key challenges associated with ES implementations as opposed to other systems are that, packaged software or ES involve the whole organisation and require a combination of technical and human expertise to select, develop and implement successfully. Given this argument, companies adopting ES need to focus on specific aspects of technical and human factors in order to translate their efforts to anywhere close to an ES success. User empowerment will enable users to develop a better understanding of the system making them more receptive to adopt and adapt the system and be more satisfied with it than if they had not been involved in its implementation.

DEVELOPING THE A PRIORI MODEL

The premise of this research is to study the impacts of Users' empowerment as an enabler and competitive strategy to achieve ES success. Thus, the specific aims of this study have been: to validate the survey instrument for measuring User empowerment; and to explore the User empowerment-ES success relationship.

Based on the review of relevant literature and the analysis of the data from the exploratory study, the a priori model is developed. The two models used in the development of an a priori model use Spreitzer (1995) and Doll et al. (2003) studies. Spreitzer (1995) partial nomological network of psychological empowerment consists of four cognitions (meaning, impact, competence, and self-determination) that reflect an active, rather than a passive, orientation toward a work role. In the original Doll et al. (2003) User empowerment study draws concepts from the Spreitzer (1995) study. User empowerment is found to predict the effective use of information technology for problem solving/decision support better than its first-order factors (user autonomy, computer self-efficacy, perceived usefulness, and intrinsic motivation). Perceived Usefulness[10] and Intrinsic Motivation[11] constructs were excluded from the *a priori model*.

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4. Esteem: personal feelings of achievement or self-esteem, recognition, or respect from others;

3. Affiliation: belonging or receiving affection;

2. Safety: security, stability, absence of pain;

1. Physiological: food, water, and air.

10 Usage and Usefulness: The ES under investigation is mandatory for all users, and thus changes advocated by Seddon and Kiew (1994) are acknowledged. However, we argue that the Usefulness of a system derives from such factors as, the quality of the system, quality of information, and satisfaction of users. We therefore argue that Usefulness is not an independent construct, but rather a surrogate measure of system quality, information quality and satisfaction. On the basis of this argument, Perceived Usefulness is excluded from the a priori model.

11 Intrinsic Motivation: The objective of the study is to understand User empowerment with reference to the ES and Intrinsic motivation is a self related constructs. Therefore only those constructs that are specific to the ES have been included in the a priori model.

Models of Information Systems success have been developed (DeLone and McLean, 2002) and exploited in the Enterprise Systems success (Sedera et al., 2003, Shang and Seddon, 2002). This research will use the established models as the dependent variable in the main study. The ES success measurement instrument validated by Gable et al. (2003) suggests that there exist four independent dimensions; System quality (i.e. how a system performs from a technical and design perspective), Information quality (here the focus is on the quality of system outputs: issues as the relevance, timeliness and format of reports, and the accuracy of information generated by the system), Individual Impact (i.e. how the ERP system has influenced the performance of individual users), and Organisational impact (i.e. overall objectives of the organisational performance). These dimensions are posited to be correlated and are additive measures of ERP impact or ES success (Sedera et al., 2003). The following sections describe the research methodology employed for the study.

RESEARCH METHODOLOGY

Research Model

The research model was derived focusing on the impact of empowerment on Enterprise Systems success (See figure 1). The psychological empowerment derived from (Spreitzer, 1995) and User empowerment (derived from (Doll et al., 2003) are depicted as the antecedents of ES success. The ES success is measured using the four dimensions of the ES success measurement model (Gable et al., 2003, Sedera et al., 2003).
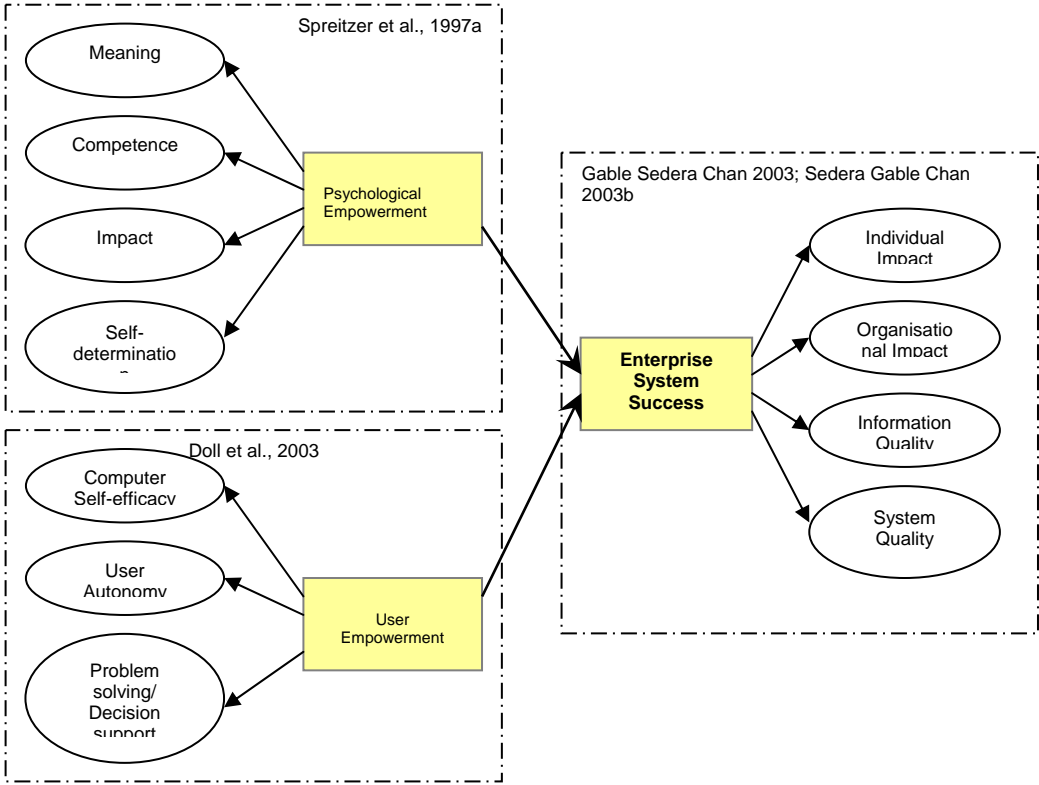

Figure 1: The Research Model

The Survey

The purpose of the survey was to test the *a priori* model (see figure 1). A survey methodology was employed in this study to gain understanding between empowerment and ES success. Data for this study was collected using a questionnaire and the instrument design was approached by framing a set of issues such as population and its

accessibility, sampling, question, content, bias, and finally administrative issues and are discussed later in the paper. Due to the confidentiality and ethical clearance considerations a web-based survey or mail back approach was refrained. Instead, all responses were dropped-off and collected personally. The acting director of financial services division of University X was approached to endorse and support the study. As a criterion for participation in the study, individuals were required to have active involvement with Oracle Financials. Each respondent was requested to complete all sections of the questionnaire relating to empowerment and ES success measurement, specific to Oracle Financial system.

Additional details such as (1) respondent demographics; (2) the organisational unit, (3) experience with the ES system (Oracle Financials), (4) type of work they do with the system, and (5) education level were collected and will be used for detailed analysis. The study was positioned as one that enables greater understanding of User empowerment, validates the construct, and the instruments (Psychological empowerment and User empowerment). The study has increased the understanding of the relationship between empowerment and the dependent variable of ES success measures, rather than purely focusing on levels of ES successes. The measures of each construct employed in the survey are listed in table 1 below.

Psychological Empowerment			ES Success		
me1	Meaning	Personal meaning	ii1	Individual Impact	Learning
me2		Work is meaningful	ii2		Awareness/Recall
me3		Work is important	ii3		Decision making effectiveness
im1	Impact	Significant influence	ii4		Individual productivity
im2		Control in department	oi1	Organisational Impact	Cost effectiveness
im3		Large impact	oi2		Staff requirements
sd1	Self Determination	Significant autonomy	oi3		Organisational costs
sd2		Freedom on Job	oi4		Overall productivity
sd3		Decide how to work	oi5		Product/Service quality
co1	Competence	Master skills	oi6		Volume of activity
co2		Confident in ability	oi7		Business Process change
co3		Self-assured capability	iq1	Information Quality	Importance
User Empowerment			iq2		Availability
cse1	Computer Self-efficacy	Mastered skills for ES use	iq3		Usability
cse2		Confidence in ability to use ES	iq4		Understandability
cse3		Capability to use ES	iq5		Format
au1	User Autonomy	Independence in use of ES	iq6		Conciseness
au2		Significant autonomy in use of ES work processes	sq1	System Quality	Ease of use
au3		Say in use of ES for specific work	sq2		Ease of learning
psds1	Problem Solving/Decision Support	Efficiency of decision process during ES use	sq3		User requirements
psds2		Enabling rational decisions through ES	sq4		System features
psds3		Sense making from ES data	sq5		System accuracy
psds4		Use of ES for problem solving	sq6		Customisation
			sq7		Efficiency
			sq8		Integration
			sq9		Flexibility

Table 1: Measures of Empowerment and ES Success

PRELIMINARY RESULTS

The survey was distributed to 185 ORACLE users and received a total of 154 valid responses yielding a response rate of 83%[12]. Items were measured on a seven point Likert scale with the end values (1) 'Strongly disagree' to (7) 'Strongly Agree'.

Instrument Validation

The following section describes the rigorous instrument validation and model building process completed in this study. The section begins by explaining content validity and attempts to illustrate construct validity of the items employed in the survey, followed by an analysis of the reliability of the survey items. The focus of this research paper: "The impact of empowerment on ES success", is then sought.

	Components			
	1	2	3	4
me1	0.109	0.179	0.912	0.130
me2	0.188	0.168	0.917	0.153
me3	0.113	0.060	0.897	0.205
im1	0.304	0.043	0.151	0.901
im2	0.304	0.023	0.129	0.902
im3	0.185	0.127	0.241	0.844
sd1	0.888	0.027	0.145	0.293
sd2	0.913	0.161	0.119	0.220
sd3	0.880	0.152	0.168	0.275
co1	0.113	0.879	0.095	0.079
co2	0.101	0.959	0.119	0.044
co3	0.079	0.939	0.164	0.049

Table 2: Final Factor Solution of Psychological Empowerment

	Component		
	1	2	3
cse1	0.180	0.173	0.946
cse2	0.174	0.141	0.946
cse3	0.242	0.172	0.890
au1	0.261	0.909	0.202
au2	0.304	0.905	0.180
au3	0.308	0.876	0.140
psds1	0.786	0.406	0.177
psds2	0.854	0.363	0.148
psds3	0.866	0.173	0.237
psds4	0.876	0.216	0.213

Table 3: Final Factor Solution of User

	Component			
	1	2	3	4
ii1	0.192	0.212	0.213	0.831
ii2	0.250	0.237	0.200	0.847
ii3	0.339	0.216	0.097	0.850
ii4	0.302	0.328	0.122	0.804
oi1	0.712	0.250	0.292	0.193
oi2	0.850	0.120	0.100	0.094
oi3	0.872	0.165	0.108	0.178
oi4	0.816	0.198	0.260	0.326
oi5	0.709	0.324	0.254	0.323
oi6	0.756	0.277	0.299	0.288
oi7	0.689	0.222	0.417	0.305
iq1	0.258	0.782	0.158	0.277
iq2	0.124	0.748	0.266	0.078
iq3	0.201	0.807	0.267	0.189
iq4	0.140	0.698	0.329	0.418
iq5	0.229	0.706	0.294	0.338
iq6	0.271	0.759	0.216	0.264
sq1	0.250	0.209	0.496	0.485
sq2	0.157	0.291	0.517	0.416
sq3	0.455	0.572	0.282	0.226
sq4	0.256	0.469	0.545	0.056
sq5	0.135	0.344	0.736	0.066
sq6	0.200	0.187	0.652	0.387
sq7	0.267	0.083	0.771	0.218
sq8	0.185	0.321	0.730	-0.014
sq9	0.236	0.256	0.717	0.194

Table 4: Final Factor Solution of ES Success

Content Validity

Cronbach (1971) and Kerlinger (1964) suggest that an instrument is valid 'in content', if that (*instrument*) (i) has drawn representative questions from a universal pool, and (ii) has been subjected to a thorough review by experts until a formal consensus is reached. As discussed earlier, there are no quantitative empirical studies that

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[12] The survey implementation process followed the suggestions of (Salant and Dillman, 1994).

explored the relationship with ES success. However, several alternative models and instruments relating to empowerment were analysed to derive the a priori model.

Construct Validity

Construct validity testing assesses whether the selected measures are true indicators of the phenomenon of interest (Campbell and Fiske, 1959, Cronbach, 1971). Construct validity of the instrument is assessed using the exploratory factor analysis using principal component extraction and orthogonal (*Varimax*) rotation. Three factor solutions were derived for User Empowerment, Psychological Empowerment and Enterprise System Success to establish construct validity of each phenomenon and are depicted in tables 2-4. All items loaded as expected under the eleven (11) constructs, establishing the construct validity. The constructs explained 89.5% variance in Psychological empowerment, 89.4% variance in User empowerment and 74.3% variance explained in ES success. Construct validity was further established using the Kaiser-Meyer-Olkin (KMO) to measure the sampling adequacy and the Bartlett's test of sphericity (BTS)[13].

Reliability

The notion of reliability of a measure refers to its consistency. *Internal Reliability* is particularly important in connection with multiple-item scales. It raises the question of whether each scale is measuring a single idea and hence whether the items that make up the scales are internally consistent. The most widely used measure of reliability is *Cronbach's alpha.* Alpha values of the study variables are reported in table 5 and illustrate a strong reliability.

Construct	Alpha
Psychological Empowerment	
Meaning	0.933
Impact	0.934
Self Determination	0.945
Competence	0.931
User Empowerment	
Self Efficacy	0.959
Autonomy	0.957
Problem Solving	0.933
ES Success	
Individual Impact	0.957
Organizational Impact	0.95
Information Quality	0.935
System Quality	0.906

Table 5: Reliability of Measures

Impact of Empowerment on ES Success

To establish the relationship between Empowerment and ES success, a correlation matrix was developed (See table 6). Analysing the data in table 6, it is clearly evident that the constructs of User empowerment (i.e. Self Efficacy, Autonomy and Problem Solving) illustrate significant correlations with ES Success Overall measures. The constructs of Psychological empowerment (Spreitzer et al., 1997) do not demonstrate any significant correlations to the ES success.

		Psychological Empowerment				User Empowerment		
		M	**I**	**D**	**C**	**S**	**A**	**SBS**
Enterprise System Success	os1	0.105	0.019	-0.037	0.024	0.382**	0.326**	0.409**
	Sig. (2-tailed)	0.200	0.816	0.650	0.767	0.000	0.000	0.000
	os2	0.116	0.040	-0.059	-0.004	0.382**	0.337**	0.415**
	Sig. (2-tailed)	0.156	0.624	0.471	0.962	0.000	0.000	0.000

Table 6: Correlations between Empowerment and ES success

PRELIMINARY INTERPRETATION OF RESULTS

As illustrated in table 6, the correlation matrix shows no significant correlation between ES success and the Psychological empowerment. However, significant correlations were seen amongst ES success measures and the dimensions of UE. This implies our proposition of User empowerment as an antecedent of ES success and refutes the proposition on Psychological empowerment.

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13 For Psychological Empowerment KMO = 0.791 ; BTS Chi Square = 1924, df = 66 |

For User Empowerment KMO = 0.853 ; BTS Chi Square = 1754, df = 45

For ES Success KMO = 0.924 ; BTS Chi Square = 3943, df = 325

Evidence gathered from this survey on Psychological empowerment contradicts the general decree of the literature. One of many interpretations of the above result might be due to the second level effect that Psychological empowerment plays in User empowerment variables. Other reasons might be the moderating /mediating variables of ES success. The lessons learnt are now been incorporated into the subsequent study to be conducted in the near future.

User empowerment has emerged as an extension to or specialisation of the overarching empowerment concept. As an indicator at this stage of research, it would appear that the level of User empowerment may vary depending on the specific system being used. As seen from the study results, User empowerment does have a significant relationship with ES success; however, one must be system-specific with the context when measuring Psychological empowerment .i.e. to gauge User empowerment instead. Alternatively, User empowerment may be described as a measure of the extent to which the user has been empowered by the system, rather than the extent to which User empowerment has led to the system success. Data mining is ongoing and will guide further in expanding and refining the construct space of User empowerment. These analyses combined with further intended interviews with consultants are expected to yield valuable insights into impact of UE on individual perception of ES success, highlight key enablers and inhibitors of implementation success, feed the benefit realisation paradigm for practitioners, and also for the IS community at large.

Another important point to emerge from this study is that users will not adapt to a system if it is not perceived to fulfil their needs. Besides these findings, our study shows that employees are generally receptive to the idea of empowerment. However, they are not keen on exercising empowerment to judge their peer's work. This, perhaps, is to avoid interpersonal conflicts and the need to maintain effective teamwork.

CONCLUSION AND OUTLOOK

The purpose of this paper was to report the preliminary results of a study designed to understand and measure the impact of empowerment on ES success. The study model on 'Empowerment" was grounded on the "Partial Nomological Network of Psychological empowerment" by Spreitzer (1997) and Doll et al., (2003) User empowerment framework. The ES Success was measured using the ES success measurement model (Gable et al., 2003, Sedera et al., 2003). Individually, all models and frameworks demonstrated strong construct, content validity and high reliability. Analysing the results of the study it was revealed no relationship between Psychological empowerment and ES success and a significant correlation between User empowerment items.

Given past ES success studies have lacked theoretical grounding; the selection of constructs in this study was based on the survey aimed at confirming the relevance and completeness of the most comprehensive ES success model. Furthermore, this study re-validated two prominent empowerment models in the ES context. No other study, to the best of our knowledge, has quantitatively evaluated the 'goodness' of above empowerment frameworks in the context of ES.

Furthermore, the study will stimulate the exploration of dynamics in the users' immediate work environment such as, the patterns of changes, and their consequences. The study will also lend itself as an effective measure of whether an ES is in a stable state of evolution in which the ES' functionality is evolving, or in a state of revolution, in which the ES is being replaced because it is not providing the functionality expected by its users.

REFERENCES

Barua, A. and Lee, B. (1997) The IT productivity paradox revisited: A theoretical and empirical investigation in the manufacturing sector *The International Journal of Flexible Manufacturing Systems,* **9,** 145-166.

Bingi, P., Sharma, M. K. and Godla, J. K. (1999a) Critical issues affecting an erp implementation *Information Systems Management,* **16,** 7-15.

Bowen, D. E. and Lawler, E. E. (1995) Empowering service employees *Sloan Management Review,* **36,** 73-84.

Brower, M. F. (1995) Empowering teams: What, why, and how. *Empowerment in Organizations,* **03,** 13-25.

Cameron, K. S. and Quinn, R. E. (1988) Ballinger, Cambridge, MA, pp. 1-18.

Campbell, J. P. and Fiske, D. W. (1959) Convergent and discriminant validation by the multitrait-multimethod matrix *Psychological Bulletin,* **36,** 81–105.

Chung, S. and Snyder, C. Year Erp initiation - a historical perspective Fifth Americas Conference of Information Systems

Conger, J. A. and Kanungo, R. N. (1988) The empowerment process: Integrating theory and practice *Academy of Management Review,* **13,** 471-482.

Cronbach, L. J. (1971) In *Educational measurement*(Ed, L., T. R.) American Council on Education, Washington, D. C.

Deci, E. L. and Ryan, R. M. (2000), Vol. 2003 University of Rochester.

DeLone , W. H. and McLean, E. R. Year Information systems success revisited 35th Hawaii International Conference on System Sciences 2002 (HICSS 2002)

Doll, W. J., Deng, X. and Metts, G. A. Year User empowerment in computer-mediated work ISOneWorld 2003

Evans, B. K. and Fischer, D. G. (1992) A hierarchical model of participatory decision-making, job autonomy, and perceived control *Human Relations,* **45,** 1169.

Eylon, D. and Au, K. Y. (1999) Exploring empowerment cross-cultural differences along the power distance dimension *Int. J. Intercultural Rel,* **23,** 373-385.

Forrester, R. (2000) Empowerment: Rejuvenating a potent idea *Academy of Management Executive,* **14,** 67-80.

Gable, G., Scott, J. and Davenport, T. H. Year Cooperative erp life cycle knowledge management 9th Australasian Conference on Information Systems

Gable, G. G., Sedera, D. and Chan, T. Year Enterprise systems success: A measurement model Twenty-Fourth International Conference on Information Systems

Herzberg, F. (1964) The motivation/hygiene concept and problems of manpower *Personnel Administration,* **27,** 3-7.

Holland, C. P., Light, B. and Gibson, N. Year A critical success factors model for enterprise resource planning implementation European Conference on Information Systems

Hong, K.-K. and Kim, Y.-G. (2002) The critical success factors for erp implementation: An organizational fit perspective *Information & Management,* **40,** 25-40.

Kerlinger, F. N. (1964) *Foundations of behavioural research: Educational and psychological inquiry,* Holt, Rinehart and Winston, New York.

Koberg, C. S., Boss, R. W., Senjem, J. C. and Goodman, E. A. (1999) Antecedents and outcomes of empowerment *Group & Organisation Management,* **24,** 71-91.

Kochan, T. and Osterman, P. (1994) *The mutual gains enterprise,* Harvard Business School Press, Boston, MA.

Leach, D. J., Jackson, P. R. and Wall, T. D. (2001) Realizing the potential of empowerment: The impact of a feedback intervention on the performance of complex technology *Ergonomics,* **44,** 870-886.

Leavitt, H. J. (1964) In *Handbook of organizations*(Ed, March, J. G.) McNally, R., Chicago, pp. 1144-1170.

Lehr, B. and Lichtenberg, F. (1999) Information technology and its impact on productivity: Firm level evidence from government and private data sources *Canadian Journal of Economics,* **32,** 335-362.

Livermore, C. T. R. and Ragowsky, A. Year Erp systems selection and implementation: A cross-cultural approach Americas Conference on Information Systems (AMCIS)

Markus, L. and Tanis, C. (2000) In *Framing the domains of it research: Projecting the future through the past*(Ed, Zmud, R. W.) Pinnaflex Educational Resources, Inc, Cincinnati, OH, pp. 173-207.

Maslow, A. (1943) A theory of human motivation *Psychological Review,* **50,** 370-396.

McGregor, D. (1960) *The human side of enterprise,* McGraw-Hill, New York.

Mendel, B. (1999) Overcoming erp project hurdles *InfoWorld,* **21,** 87.

Mukherjee, K. (2001) Productivity growth in large us commercial banks: The initial post regulation experience *Journal of Banking and Finance,* **25,** 913.

Nah, F. F.-H., Lau, J. and Kuang, J. (2001) Critical factors for successful implementation of enterprise systems *Business Process Management Journal,* **7,** 285-296.

Psoinos, A., Kern, T. and Smithson, S. (2000) An exploratory study of information systems in support of employee empowerment *Journal of Information Technology,* **15,** 211-230.

Psoinos, A. and Smithson, S. (2002) Employee empowerment in manufacturing: A study of organisations in the uk *New Technology, Work and Employment,* **17,** 132-148.

Salant, P. and Dillman, D. A. (1994) *How to conduct your own survey,* New York: Wiley.

Sarkar, S. and Lee, A. S. Year Using a case study to test the role of three key social enablers in erp implementation Twenty first international conference on Information systems

Scott, J. E. Year The foxmeyer drugs' bankruptcy: Was it a failure of erp? Americas Conference on Information Systems.

Sedera, D., Gable, G. G. and Chan, T. Year Measuring erp impacts in public sector organisations American Conference on Information Systems (AMCIS '03)

Shang, S. and Seddon, P. B. (2002) Assessing and managing the benefits of enterprise systems: The business manager's perspective *Information Systems Journal,* **12,** 271-299.

Sia, S. K., Tang, M., Soh, C. and Boh, W. F. (2002) Enterprise resource planning (erp) systems as a technology of power: Empowerment or panoptic control? *Database for Advances in Information Systems,* **33,** 23-37.

Siegall, M. and Gardner, S. (2000) Contextual factors of psychological empowerment *Personnel Review,* **29,** 703-722.

Sigler, T. H. and Pearson, C. M. (2000) Creating an empowering culture: Examining the relationship between organizational culture and perceptions of empowerment *Journal of Quality Management,* **5,** 27-52.

Spreitzer, G. M. (1995) Psychological empowerment in the workplace: Dimensions, measurement, and validation *Academy of Management Journal,* **38,** 1442-1465.

Spreitzer, G. M. (1996) Social structural characteristics of psychological empowerment validation *Academy of Management Journal,* **39,** 483-504.

Spreitzer, G. M. (1992) In *School of Business*The University of Michigan, Michigan, pp. 208.

Spreitzer, G. M., Kizilos, M. A. and Nason, S. W. (1997) A dimensional analysis of the relationship between psychological empowerment and effectiveness, satisfaction, and strain *Journal of Management,* **23,** 679-704.

Spreitzer, G. M. and Quinn, R. E. (1996) Empowering middle managers to be transformational leaders *The Journal of Applied Behavioral Science,* **32,** 237-261.

Spreitzer, G. M. and Quinn, R. E. (1997) The road to empowerment: Seven questions every leader should consider *American Management Association, ORGANIZATIONAL DYNAMICS,* **26,** 37-49.

Staehr, L., Shanks, G. and Seddon, P. B. Year Understanding the business benefits of enterprise resource planning systems Eighth Americas Conference on Infromation Systems

Straub, D. W. and Trower, J. K. (1988) The importance of user involvement in successful systems: A meta-analytical reappraisal *Working Paper*, 89-01.

Sundbo, J. (1999) Empowerment of employees in small and medium-sized service firms *Employee Relations. The International Journal,* **21,** 105-27.

Thomas, K. W. and Velthouse, B. A. (1990) Cognitive elements of empowerment: An "interpretive" model of intrinsic task motivation *Academy of Management Journal,* **15,** 666-681.

Vroom, V. H. and Yetton, P. W. (1973) *Leadership and decision-making,* University of Pittsburgh Press, Pittsburgh.

Wagner, J., A. (1994) Participation's effects on performance and satisfaction: A reconsideration of research evidence *Academy of Management Review,* **19,** 312-330.

Wall, T. D., Cordery, J. L. and Clegg, C. W. (2002) Empowerment, performance, and operational uncertainty: A theoretical integration *Applied Psychology-an International Review,* **51,** 146-169.

Wilkinson, A. (1998) Empowerment: Theory and practice *Personnel Review,* **27,** 40-56.

Wilson, D. (1993) *Assessing the impact of information technology on organizational performance,* Idea Group, Harrisburg, PA.