Utilization and User Satisfaction in End-User Computing: A Task Contingent Model

CHANGKI KIM, Korea Advanced Institute of Science and Technology, South Korea
KUNSOO SUH, Soonchunhyang University, South Korea
JINJOO LEE, Korea Advanced Institute of Science and Technology, South Korea

Utilization and user satisfaction have been used most extensively as the dependent variable to surrogate IS success (Amoroso & Cheney, 1991; Igbaria & Nachman, 1990). These two variables are also the primary measures of success in the study of end-user computing (EUC) (Ein-Dor & Segev, 1982; Schiffman et al., 1992). Taking these two variables into consideration, two issues prompt concern: the adequacy of them as surrogate measures and the relationship between them.

As a surrogate measure for IS success, utilization is an excellent measure in that it is more objective and easier to quantify than any other measures identified (DeLone & McLean, 1992). However, it has been argued that utilization is appropriate only when such usage behavior is voluntary (DeLone & McLean, 1992; Gatian, 1994). Researchers who insist on this argument have generally adopted the user satisfaction approach. User satisfaction instruments, however, have a significant problem in that they rely solely on cognitive dimension (beliefs about characteristics of a system) and affective dimension (attitudes towards a system or towards using a system) of IS success without accounting for the performance-related dimension (performance-related goals for which systems are designed) (Etezadi-Amoli & Farhoomand, 1996). In spite of weaknesses of these two measures, utilization and user satisfaction are the most frequently proposed alternatives.

In this paper, the relationship between the two constructs is our primary concern. There has been inconsistency on that relationship. In addition, conflicting empirical results lead to the conclusion that the relationship may need further investigation (Igbaria & Nachman, 1990). Based on the information processing view, we make an effort to resolve this perplexing issue. A task contingent model to clarify the relationship between them is suggested and empirically tested in the context of EUC.

The information processing view of organizations is that...
organizational effectiveness is a function of the fit between the 
information processing requirements and the information pro-
cessing capacity of the organization (Tushman & Nadler,
1978). In the context of EUC, the information processing 
requirements are largely determined by end-users’ task uncer-
tainty. In order to increase information processing capacity, 
one of the most important mechanisms is to invest in informa-
tion technology (Ghani, 1992). At an individual level, end-
users are able to increase their information processing capac-
ity by being involved in EUC activities, which can be repre-
sented objectively by utilization measures. Task uncertainty, 
therefore, would be closely associated with utilization. And 
user satisfaction depends to some extent on the match between 
task uncertainty and utilization. In this perspective, we can 
argue that the match between task uncertainty and utilization 
is more important than the simple increment of utilization.

In summary, the purpose of this paper is to suggest a task 
contingent model clarifying the relationship between utiliza-
tion and user satisfaction. Based on empirical data, this study 
examines the model: the direct relationship between task 
uncertainty and utilization, and the moderating effect of task 
uncertainty on the relationship between utilization and user 
satisfaction.

Theoretical Background

End-User Computing

In defining EUC, Rivard and Huff (1985) attempted to 
be more definitive by distinguishing between user developed 
applications (UDA) and the much broader set of activities 
termed EUC. Sipior & Sanders (1989) defined EUC as the 
development and use activities associated with the employ-
ment of computer resources to perform or facilitate job-related 
tasks and responsibilities. This study defines EUC more 
broadly as the direct, individual use of computers encompass-
ing all the computer-related activities, by non-DP profession-
als, to accomplish or facilitate one’s job (Rainer & Harrison,
1994; Sipior & Sanders, 1989; Doll & Torkzadeh, 1989; Ein-
Dor & Segev, 1991). And this study defines end-users as the 
non-DP professionals who use and sometimes develop and 
manage computer-based applications to support their work in 
functional areas (Alavi, 1985; Benson, 1983; Sipior & Sanders,

As mentioned above, the broad set of activities associ-
ated with the use of the computer for job-related tasks have 
been referred to as EUC (Sipior & Sanders, 1989). End-users 
are involved in EUC activities in order to enhance their job 
effectiveness and/or to accomplish their tasks. So, task char-
acteristics is one of the key variables affecting EUC success 
(Cheney et al., 1986; Ghani, 1992). However, few empirical 
studies have focused on task characteristics. In this paper, task 
variability and analyzability, the basic dimensions of task 
characteristics, are key variables that explain utilization and 
user satisfaction.

Task Uncertainty and End-User Computing: An 
Information Processing View

A large number of organization theory researchers have 
made information processing the integrating or central con-
cept in models that attempt to describe how organizations can 
match information processing requirements arising from task 
technology to information processing capacity arising from 
organization design and structure in order to achieve high 
or ganizational performance (Daft & Lengel, 1986; Galbraith,
1977; Keller, 1994; Tushman & Nadler, 1978). The basic idea 
of these models is that too much capacity will be redundant and 
costly, while too little capacity will not get the job done 
(Tushman & Nadler, 1978). Recent researches have tested 
important contingency theory hypotheses between fit and 
performance, with fit conceptualized as a match between task 
technology and information processing (Keller, 1994).

The managerial information processing model or media 
richness theory is the best known formulation that extends this 
general information processing model to relationships be-
tween task characteristics, use of communication media, and 
performance. In this model, as similar to the general informa-
tion processing model, the main proposition is that perfor-
ance depends to some extent on the match between task 
uncertainty and the characteristics of the medium used.

Task uncertainty is defined as the difference between the 
amount of information needed to complete a task and the 
amount of information already possessed by the organization 
(Galbraith, 1977). Researches in both MIS and organization 
theory recognize the close relationship between task uncer-
tainty and organizational information processing (Ghani,
1992). Perrow (1967) originally proposed and described the 
two basic dimensions of task uncertainty: number of excep-
tions and analyzability. The first dimension refers to task 
variability. Task variability is defined as the number of excep-
tional cases, or unexpected and novel events encountered, 
which require different methods or procedures for doing the 
works (Perrow, 1967). The second dimension, task analyzability, 
is defined as the availability of concrete knowl-
edge about task activities (Specht, 1986) and the degree of 
complexity of the search process in performing the task 
(Perrow, 1967). It concerns how individuals respond to prob-
lems that arise in the process of task completion.

In the EUC environment, end-users’ task uncertainty is 
the major determinant of information processing require-
ments. While task variability affects the amount of informa-
tion required to handle unexpected events, task analyzability 
affects the form of information necessary to resolve ambigu-
ities (Ghani, 1992). Information processing needs arising 
from task variability requires computing activities that can 
provide sufficient amount of information. Hence, highly vari-
able tasks require diverse EUC activities. On the other hand, 
information processing needs arising from task analyzability 
requires computing activities that can provide the relevant
Related Content

Solutions for Wireless City Networks in Finland
www.igi-global.com/chapter/solutions-wireless-city-networks-finland/14102?camid=4v1a

Simple Methods for Design of Narrowband High-Pass FIR Filters
www.igi-global.com/chapter/simple-methods-design-narrowband-high/14640?camid=4v1a

A Collaborative Approach for Improvisation and Refinement of Requirement Prioritization Process
www.igi-global.com/article/a-collaborative-approach-for-improvisation-and-refinement-of-
requirement-prioritization-process/203012?camid=4v1a

Utilization and User Satisfaction in End-User Computing: A Task Contingent Model
www.igi-global.com/article/utilization-user-satisfaction-end-user/51057?camid=4v1a