Chapter 8
A Preliminary Classification of Usage Measures in Information System Acceptance: A Q–Sort Approach

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1. INTRODUCTION

Large investments (Gable et al., 2008) are made by organisations expecting significant improvements in business processes and positive impacts thereof. One of the main criteria for deriving benefits from those substantial investments is that newly installed Information Systems (IS) are utilised in the correct way. Under or improper utilisation of IS have been the cause of many failures and have been identified as the major factor for the ‘productivity paradox’ (Agarwal & Prasad, 1998; Sykes et al., 2009; Venkatesh & Davis, 2000).

ABSTRACT

In the light of a diverse body of disorganized usage measures available and the difficulty of building a cumulative research tradition, a literature review is conducted on system use in Information Systems (IS) Acceptance through the two main theories of Technology Adoption, the Technology Acceptance Model (TAM), and The Unified Theory of Use and Acceptance of Technology (UTAUT). The authors seek to understand how usage measures are being operationalised and proposed a preliminary classification of those measures that covers system and task aspects of use. A Q–Sort approach was taken to validate the authors’ classification scheme and the result indicates high inter-rater agreement. The ensuing classification is meant to help researchers in their choice of system use measures. This review also summarises the arguments for a multi-dimensional measure of use and establishes that omnibus measure such as frequency, volume and use/non-use hold prevalence. Finally, the authors provide recommendations for further research in the area of system use.

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System use, according to Straub et al. (1995) is essential in measuring professional performance, a necessary conduit to derive net benefits and for managers to assess the impact of their systems. Recently, very little attention has been paid to the system use construct itself despite the fact that system usage has been around since the 1970s (Lucas, 1973).

Lack of theoretical grounding (Burton-Jones & Straub, 2006; Straub et al., 1995) on how to choose and use measures of system use coupled with a plethora of unsystematized measures and different conceptualisations (Davis, 1989; Doll & Torkzadeh, 1998) make it difficult to compare research findings and hampers effort to build cumulative research tradition (Straub et al., 1995). The absence of reliable and consistent measures of system use (Petter & McLean, 2009) has further increase the misuse of this variable and lead to diverse results among IS practitioners (Livari, 2002; Rai et al., 2003; Roldan & Leal, 2003). This has lead to calls for further research into measures of system usage (Benbasat & Barki, 2007; Delone & McLean, 2003; Hennington et al., 2009; Straub et al., 1995).

In the absence of proper definitions and conceptualisations of usage measure, researchers have been employing a diverse set of measures, some of which have different conceptualisations but same operationalisations, others were chosen based on previous research and yet others were not even named. This paper builds on the work done by Burton-Jones and Straub (2006) on re-conceptualising system use in order to investigate the current measures of system use being used, to classify the plethora of system use measures being used in an attempt to help researchers in their choice of usage measures. In this research, the researchers have two main questions; first how are measures of system use currently being operationalised in IS acceptance? Second, to what extent can these measures be categorised? In a bid to answer those questions, the researchers summarise the arguments for a multi-dimensional measures of use and proposed a preliminary taxonomy of usage measures. Considering that system use has been conceptualised into four different domains, this review will be selective, aiming only at the IS acceptance domain using the Technology Acceptance Model and the Unified Theory of Acceptance and Use as underlying framework. This paper is structured as follows: the next section provides a discussion of system use construct and the role it plays in acceptance research as well as a summary of the arguments for a multi-dimensional measure of use. Section 3 explains the chosen methodology for retrieving usage measures from the literature. Section 4 discusses the Q-Sort approach and the findings. Finally, Section 5 provides the limitations, conclusions recommendations for further research.

2. DEFINING SYSTEM USE

The definition of system use itself is problematic as there is no standard definition in the literature. Definition is complicated in the case of system use, as a definition implies the categorisation of a particular construct and setting limits to what is system usage. Currently four main domains in conceptualising this variable has been reported (Burton-Jones & Straub, 2006) namely use in IS success, use for IS acceptance, use in post implementation and use for decision making. Based on these conceptualisation of use, Burton-Jones and Straub (2006) define individual level system use as “an individual user’s employment of one or more features of a system to perform a task” (p. 231). Petter and McLean (2009) define system use in the context of IS Success as the “consumption of an IS or its output described in terms of actual or self-reported usage” (p. 161). Straub et al. (1995) define it as “utilisation of Information Technology by individuals, groups or organisations” (p. 1328). This paper will take the view of Burton-Jones & Straub’s (2006) definition. Their definition denotes three elements, namely:
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