Chapter 4
Practically Applying the Technology Acceptance Model in Information Systems Research

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ABSTRACT

Explaining the factors that lead to use and acceptance of Information Technology (IT), both at individual and organizational levels, has been the focus of Information Systems (IS) researchers since the 1970s. The Technology Acceptance Model (TAM) is known as such an explanatory model and has increasingly gained recognition due to its focus on theories of human behaviour. Although this model has faced some criticism in terms of not being able to fully explain the social-technical acceptance of technology, TAM is still known as one of the best IS methodologies that contribute greatly to explain IT/IS acceptance. It has been widely used in different areas of IS studies, such as e-commerce, e-business, multimedia, and mobile commerce. This chapter discusses, describes, and explains TAM as one of the well-known information system research models and attempts to demonstrate how this model can be customised and extended when applyied in practice in IS research projects. In order to illustrate this, the chapter presents and discussed two case studies, respectively, applying TAM in the areas of mobile banking and mobile campus in the UK. It is also proposed that comparing with the traditional questionnaire approach, mixed-methods designs (that contain both a quantitative and a qualitative component) can generate more meaningful and significant findings in IS studies that apply the TAM model. The practical guidance provided in this chapter is particularly useful and valuable to researchers, especially junior researchers and PhD students, who intend to apply TAM in their research.

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INTRODUCTION

For the last four decades, the implementation of Information Systems (IS) in organizations has been known to be costly, frustrating and with a relative low success rate. Nonetheless, the literature in the field indicates that organizations continuously invest in IS in order to improve their performance, maintain customer satisfaction, increase the quality of their services and decline cost (Legris, et al., 2003).

Historically, low success rate and the failure to meet requirements, budgets and deadlines has been identified as expected outcome of investing on IS and Information Technology (IT). The frustration was apparent as early as 1979, when the US Government's Accounting Agency (1979) reported that less than 3% of the software that the US government had paid for, was actually used as delivered. More recently, the Standish Group (2001) reported that 31% of US software (SW) projects were failed in 1994 and 53% were only completed over their budgets and deadlines. Curiously, more than 30 years after the first report of failure, figures indicated by the Standish Group in 2009 show that the level of SW project success is still only at 32%. This apparent failure is usually linked to the "productivity paradox" (Brynjolfsson, 1993), that first put forward by researchers in the late 20 century, which challenges the expected benefit of using IT and IS.

Productivity is a simple concept. It is the amount of output produced per unit of input. While it is easy to define, it is notoriously difficult to measure, especially in the modern economy. In particular, there are two aspects of productivity that have increasingly defied precise measurement: output, and input (Brynjolfsson & Hitt, 1998).

The productivity paradox emerged during empirical studies of IT by the U.S. researchers during 80s and 90s (Brynjolfsson, 1993). However, this focus on input vs. output is rather reductionist in terms of understanding the effects of the adoption and implementation of an IS in organizations. Hitt and Brynjolfsson (1996) were among the first to propose that a shift in understanding the role and effects of IS in organisations was necessary. These authors suggested that IS provide have the potential of originating changes in quality, processes and work practices as well as in the nature and variety of products and services offered by the organization. IS may even have more drastic impacts in reforming the organizational structures and boundaries. However, these effects do not necessarily lead to increases in productivity, if measured strictly in terms of output vs. input. Nonetheless, all these impacts may increase competitiveness, organizational effectiveness, employee satisfaction and even provide extra value for the organisation's customers and business partners (Hitt & Brynjolfsson, 1996).

Therefore, the key question in IS successful adoption lies in exploitation of the system. That is how well the system is accepted and used internally in the organization. As recognized very early on, by authors such as Davis (1989), one of the main indications of IS success or failure is the level or degree of the acceptance of the system by the users. Identifying the reasons of acceptance or rejection of IS has been one of the main challenges of IS research ever since (Swanson, 1988). Sichel (1997) added to this argument by proposing that it is the low usage of installed system that is one of the main reasons for the failure of IS. The importance of IS usage has actually become one of the core concerns in modern organizational behaviour to such an extent that authors, such as Devaraj and Kohli (2003), consider it as one of the main determinants of organizational performance. This is confirmed by continued investment in IT by modern organizations that, even during financial crises, keep allocating a large portion of their assets to IT investment (Kanaracus, 2008). Hence, it is on intention to use, acceptance, and actual use of the system that will enable organizations to attain the expected benefits of IT/IS. Therefore,