Chapter 3
Information Technology/ Information Systems Adoption in Developing and Transitioning Economies

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ABSTRACT

This chapter presents a descriptive and critical overview of IT/IS adoption theories/models in developed economies. The theories examined include task technology fit (TTF), technology readiness index (TRI), technology acceptance model (TAM and TAM2), self-efficacy theory (SET), and unified theory of acceptance and use of technology (UTAUT) together with their appropriateness to developed countries/ economies. Furthermore, an extensive look at limitations of both TAM and UTAUT (widely utilized) models as applicable to digital/mobile technologies is emphasized. The critical analysis provided thus far did reveal that none of these (IT/IS) models/theories individually are powerful enough to appropriately assess all the complex constructs embedded in the study of mobile technology adoption in developing countries. The contextual nature of individual differences in developing countries together with all cultural and country indicators (ICT infrastructure, internet penetration) would have to be integrated into any developed theory for meaningful analysis to be achieved.

INTRODUCTION

Over the years, technology adoption has evolved both at the macro and micro levels which has enabled it to feature prominently in business activities. These days it would be unthinkable for businesses to thrive without adoption and integration of intelligently managed business processes which help drive their efficiencies and competitiveness. The dynamism seen in business environments are solely driven by the rapid innovations and technologies as well as a greater demand from customers. They are becoming more interconnected in the decision-making of what to purchase and where or from whom to

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buy. Broadly, technology adoption represents acceptance, integration, and use of new technology. Carr (1999) posits that technology adoption signifies stages of selecting a technology for use by an individual or organization. Thus, technology adoption is a process where the user initially is aware of technology, then embraces it, and finally decides to utilize it for a number of activities. An individual who has embraced technology is likely to innovatively use it and cannot envisage life without it. On the other hand, technology acceptance (comparatively to technology adoption) has more to do with attitude towards a technology influenced by competing factors. One can purchase a technology and not adopt it. This is where acceptance plays a crucial role. It is antecedent to adoption.

Technically, technology adoption theoretically signifies the acceptance, integration and utilization of new technology/innovation. Technology adoption lifecycle is a model in sociology used to descriptively explain adoption/ acceptance of new products or innovations as a function of demographic and psychological characteristics of defined adopter groups. The relevance of demographic, psychological, and sociological variables per the user group is responsible for the disparity in adoption behaviour. This is more pertinent when one considers that mobile services have become an integral part of human activities. In developing economies, mobile banking, e-commerce, e-government, e-learning, and m-healthcare form part of daily phenomena (Connor & Reilly, 2018; Kapoor et al., 2015). Roger's Diffusion of Innovation Theory (1962), uses a classical normal distribution or "bell curve" to indicate the adopter groups as: innovators; early adopters; early majority; late majority; and laggards. Innovators (2.5%) the first to be innovative generally adopt innovation despite the higher risk (Figure 1). They are younger in age with higher social class, highly educated/skilled, have greater financial resources which provides the cushioning when newer technologies fail (Rogers, 1962:282). Early Adopters (13.5%) are the second largest adopters of technology, have highest opinion among adopter groups. These individuals are younger in age, with higher social class, advanced education, more acceptable to technology than late adopters. However, are more discrete in innovation choice than innovators, as well as being judicious in the adoption process (Rogers 1962:283). The early majority (34%) acquire technology after some considerable lapses in time. These individuals take longer to adopt technology than either innovators or early adopters, have above average social status, establish contacts with early adopters and are seldom opinionated leaders in systems (Rogers, 1962:283). Late majority (34%) are average adopters to the rest in the society, are sceptical to technology, have below average social status, limited financial resources, always in contact with early and late majority, also with limited opinion leadership. Laggards (16%) are the very last in innovation adoption. They exhibit little to none of opinionated leadership, are averse to change agents and are oldest in population. Are more traditionally centric, have lowest social status, lowest financial resources as well as tending to let social influences of close friends and family drive their decisions. They have little or no leadership opinion.

It is important to emphasis here that not all individuals are 'innovators' in all areas of their decision-making. On might be a technology innovator in the home (with Internet of Things [IoT]), but might not own a smartphone or belong to a social network. The social status of any individual to technology adoption runs through the bell shaped curved. The determining factor is the pain tolerance we are willing to absorb in the solution of problems which involves the use of technology.

Several authors have indicated that adoption of technology is not predicated solely by technology, but rather on highly complexed phenomena involving users' attitudes and personality (Venkatesh et al., 2012); social influence (Ajzen & Fishbein, 1975); trust (Gefen, et al., 2003); facilitating condition (Thompson, et al., 1991); optimism, innovativeness, discomfort and insecurity (Parasuraman & Colby, 2001). Thus, it is important to understand IT/IS models in relationship to past and future direction of