

OC14057

**Examining the Validity of a Framework Linking Rapid Technology Assimilation  
to High Performance System Characteristics, Operational Performance,  
Innovation and Competitiveness**

**By**

**Constantine Kontoghiorghes, Ph.D.**

**And**

**Panayiota Kyriacou**

**Cyprus University of Technology**

**Track: Management/MIS**

## Abstract

### **Examining the Validity of a Framework Linking Rapid Technology Assimilation to High Performance System Characteristics, Operational Performance, Innovation and Competitiveness**

It is widely accepted that new technologies constitute one of the biggest drivers of strategic change for contemporary organizations. Thus, the ability of the organization to quickly introduce and assimilate new technologies is considered vital in its quest to achieve and sustain a competitive advantage. In short, new technologies allow the organization to streamline processes, optimize the operational system, and thus improve productivity and quality performance. More importantly, through new technologies the organization becomes more innovative and thus gains the ability to penetrate new markets by offering new products or services. As Lepak and Shaw (2008) stated, “the issue of technology management both within and outside organizational boundaries is of critical issue for organizations today” (p. 1492).

Given the critical importance of technology, companies today invest a sizable amount of their financial resources in new technologies, expecting that such investments will transform them into more effective and competitive entities. Despite high expectations, however, technology-related initiatives often fail to deliver the expected outcomes. To a large extent the failure of technological initiatives is attributed to human and organizational factors, and not the technology itself (Kontoghiorghes, 2005; Litwin, 2011).

Despite the impact human and organizational factors have on effective technology management, limited empirical research has been conducted to identify and describe the relative importance of such factors. Building on the results of an earlier exploratory study, the main purpose of this study is to test the validity of a new framework which links rapid technology assimilation (RTA) to high performance organization characteristics as well as organizational performance. The data analysis is based on the responses provided by 587 employees of a U.S. supply chain management company.

As shown in Figure 1, the results of the structural equation model analysis indicated a strong standardized effect of the investigated high performance organization (HPO) construct on rapid technology assimilation ( $\beta=0.82$ ,  $p<0.001$ ), productivity and quality performance ( $\beta=0.84$ ,  $p<0.001$ ), and employee attitudes ( $\beta=0.74$ ,  $p<0.001$ ). RTA was found to have a strong effect on organizational innovation ( $\beta=0.78$ ,  $p<0.001$ ). Innovation in turn was found to have a strong effect on organizational competitiveness ( $\beta=0.65$ ,  $p<0.001$ ).

In all, the results of this study demonstrated the strong influence the organizational culture has on the successful implementation of new technologies. The findings further underscored the critical importance of rapid technology assimilation and its strong relationship with organizational innovation and competitiveness. Finally, the results of this study highlight the need and pave the way for future research linking organizational contextual characteristics and effective technology management.

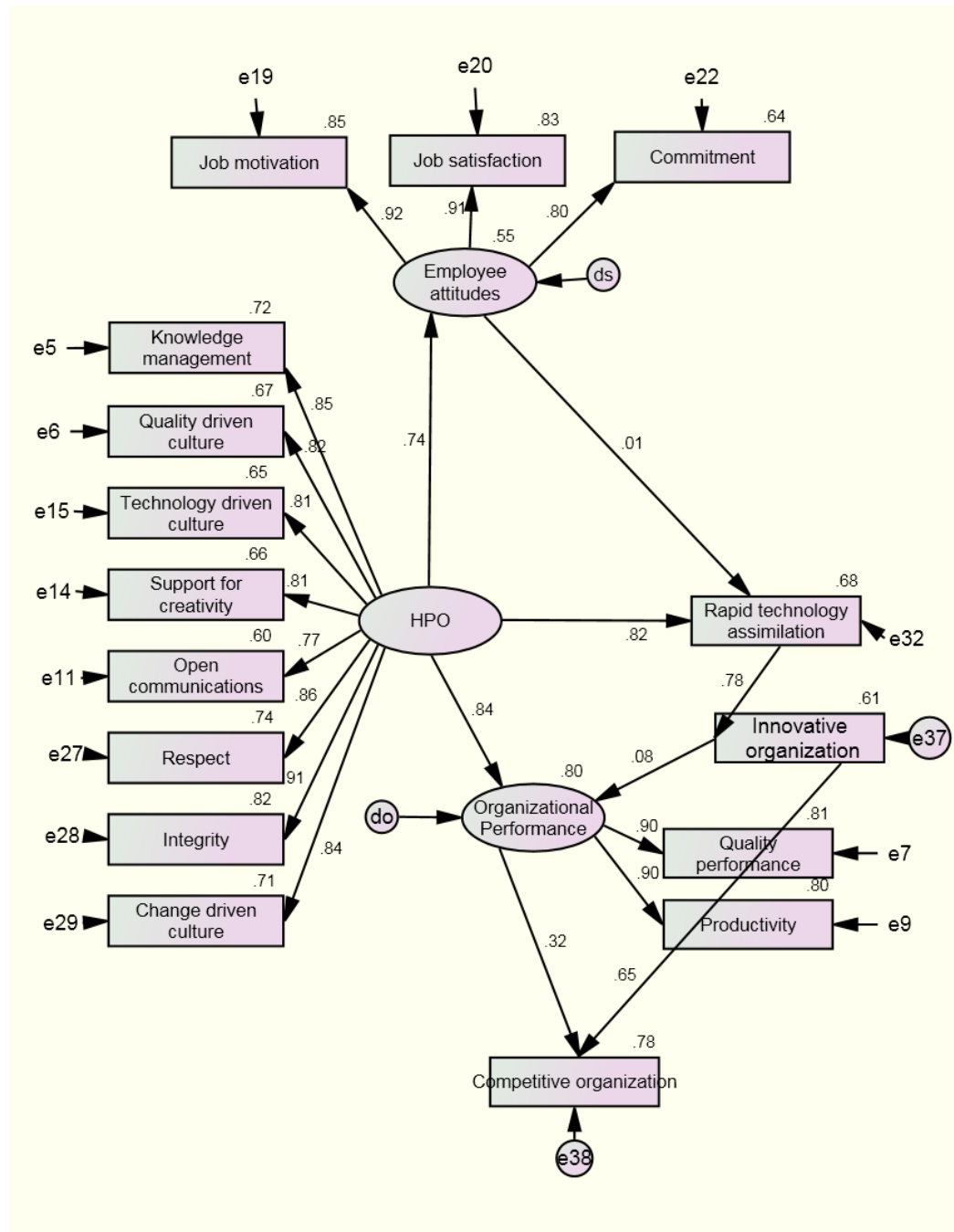


Figure 1. Structural equation model results

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