

Chapter 83

E-Government and Related Indices: Telecommunications Infrastructure, Human Capital, Institutional Efficacy, and Online Services

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ABSTRACT

The primary United Nations E-Government Index is a composite of three component indices: telecommunications infrastructure, human capital, and online e-government services, where the first two can be seen as enablers of the third. This study investigates the addition of a complementary component index for institutional efficacy, which is hypothesized to be another enabling factor. The institutional efficacy index is operationalized using existing measures gathered and made available by the World Bank. Statistical analysis shows that the institutional efficacy index is indeed a significant, additional predictor of online e-government services across nations. Following the presentation of basic results, qualitative analyses are undertaken to develop an assortment of generic national profiles. Preliminary analyses of changes over time are also presented using data from prior years, and directions for future research are outlined.

INTRODUCTION

E-government indices serve not only as benchmarks for countries to assess their standing and progress but also as spotlights onto key factors for countries to address via public policy. Among the indices that have been proposed in recent years, the United Nations (UN) E-Government Index is widely referenced and has the dual advantages of objectivity and parsimony. The primary UN index uses largely objective measures and focuses attention on a small number of essential factors via sub-indices: the telecommu-

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nication infrastructure index, the human capital index, and the online services index (United Nations 2012), where the first two can be seen as enablers of the third (Ngafeeson and Merhi, 2013).

In this study, we hypothesize, develop, and empirically test an additional, complementary index: *institutional efficacy*. Of particular relevance is the efficacy of institutional processes which are designed and managed by assorted public institutions, with special attention given to processes that span the public and private spheres. While the need to consider institutional efficacy – such as the efficiency of governmental ‘back office’ processes – was highlighted a number of years ago in the United Nations’ Expert Group Meeting report (United Nations 2009), there has been disappointing progress in this regard (Nograšek and Vintar, 2014).

The New Institutional Economics offers abstract characterization of institutions that is quite useful in the context of e-government, and it also offers pragmatic insights into requisite institutional processes. The New Institutional Economics is a structured set of theory that defines a number of fundamental aspects of the modern nation-state. ‘Institutions’ serve as the ‘elementary legal order’ of nation-states (Furubotn and Richter 2005). Important modern institutions, according to the New Institutional Economics, include the formal management of property rights, contracting, and judicial and regulatory systems in general. In addition, institutions and the related processes that actualize them should have certain desirable characteristics. For example, contracting should exist and be formal and efficient. In general, such characteristics concern the efficacy of fundamental processes in public institutions.

Measures and data that reflect the principles of the New Institutional Economics are available through the World Bank. As detailed in a later section, the World Bank’s institutional process measures directly relate to e-government because the processes themselves represent *de facto* specifications for e-government applications. Further, successful implementation of e-government initiatives beyond basic service levels necessitates business process change (Kennedy, Coughlan, and Kelleher, 2010) and e-government development initiatives may motivate and structure overall reformation of the public sector (Shareef, Kumar, Kumar, Chowdhury, and Misra, 2010). Lastly, countries with demonstrably efficacious institutional processes appear to be better attuned to effective public governance in general, and this in turn may imply more effective management of e-government development and operations (Kottemann, 2009). Thus, institutional efficacy is hypothesized to be another important enabling factor of e-government development.

In the present analysis, we assess whether institutional efficacy will demonstrate a statistically significant relationship to the levels of nations’ e-government online services over and above that of the key UN indices for telecommunications infrastructure and human capital. After explaining the UN indices, the additional institutional efficacy measure, and the research model, we demonstrate that institutional efficacy does indeed help explain the differing levels of e-government implementations across countries, suggesting that it is a beneficial complementary index.

THE UNITED NATIONS INDICES

In the foundational UN E-Government Index, telecommunications infrastructure and human capital are viewed as key enablers of online e-government services. The motivation for the telecommunications infrastructure factor as an enabler of e-government online services is straight-forward: Unless citizens and business enterprises have access to telecommunications infrastructure connecting the public and private spheres, e-government will have a limited overall impact (Gascó 2005; Siddiquee 2008). Almost

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