

Chapter 5

Unit of Analysis in Digitally-Enabled Electronic Procurement Research: A Literature Analysis

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ABSTRACT

E-procurement systems that have been in place for over a decade have begun incorporating digital tools like big data, cloud computing, internet of things, and data mining. Hence, there exists a rich literature on earlier e-procurement systems and advanced digitally-enabled e-procurement systems. Existing literature on these systems addresses many research issues (e.g., adoption) associated with e-procurement. However, one critical issue that has so far received no rigorous attention is about “unit of analysis,” a methodological concern of importance, for e-procurement research context. Hence, the aim of this chapter is twofold: 1) to discuss how the notion of “unit of analysis” has been conceptualised in the e-procurement literature and 2) to discuss how its use has been justified by e-procurement scholars to address the research issues under investigation. Finally, the chapter provides several interesting findings and outlines future research directions.

INTRODUCTION

Electronic procurement (E-procurement) represents a key area of e-commerce (EC) discipline (Barua et al., 2001; Gunasekaran et al., 2009). Although e-procurement systems emerged in early 2000 with the proliferation of the Internet, but in recent years these systems have begun incorporating more advanced digital tools (Srai & Lorentz, 2019). Hence, they are also known as digital procurement or digitally enabled e-procurement systems. The importance of such systems is highly recognised in the e-commerce literature due to two reasons. First, e-procurement is considered as the starting point for many organisations' overall e-commerce strategy (Chang et al., 2004). Second, e-procurement systems focus on automating and improving procurement process that is regarded as one of the most critical functions of supply chain (Novack & Simco, 1991). Given its importance, considerable research attention has been given by scholars to investigate various issues associated with e-procurement systems. Hence, there currently exists a rich body of literature on e-procurement as acknowledged by scholars like Rahim & As-Saber (2011).

Existing e-procurement literature typically addresses several key issues (e.g. cost savings, partner relationship, transparency, effectiveness of ordering process) associated with the stages (i.e. adoption, implementation, post-implementation) of e-procurement systems life cycle. However, one critical issue that has so far received scarce research attention is: "unit of analysis". This represents an important methodological concern for e-procurement research context that has largely been ignored by e-procurement researchers. In particular, it is not clearly known how the choice of an appropriate "unit of analysis" is justified by e-procurement researchers in order to address various research questions posed by them. Addressing this research gap is important because e-procurement involves multiple stakeholders having different motives (Rahim & Kurnia, 2014). This in turn requires attention to define a "unit of analysis" appropriate to address the research issues under investigation for e-procurement context. Hence, the purpose of this book chapter is to discuss how the notion of "unit of analysis" has been conceptualised in the e-procurement literature. This purpose is addressed in terms of the following two specific research questions:

1. What units of analysis are generally reported in the literature for e-procurement context?
2. What issues are generally considered by the researchers when choosing an appropriate unit of analysis for their e-procurement research context?

These research questions are addressed by undertaking a systematic literature analysis on e-procurement. A total of 116 articles, from peer-reviewed journals, addressing various aspects of e-procurement have been identified from multiple streams of literature (e.g. information systems, e-commerce, management, supply chain management), and then were subsequently analysed. Based on a critical analysis, this chapter reports two key findings concerning the use of "unit of analysis" for e-procurement research context. First, an overwhelming majority of studies (i.e. 84 out of 116 articles, representing 72%) make no explicit reference to "unit of analysis". Second, out of those 32 articles that explicitly report choosing a "unit of analysis" suitable for e-procurement research context, a slight majority (19 out of 32 articles representing 59%) have provided a clear explanation in support of choosing "unit of analysis" that merit discussion.

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