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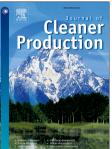
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## Product-service systems in Southeast Asia: business practices and factors influencing environmental sustainability

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#### Abstract

Product-service system (PSS) business models are now more widely used for business to consumer exchanges due to the popularity of the 'sharing economy' or 'collaborative consumption'. While there are claims that PSS offer more sustainable consumption alternatives, there is a shortage of literature regarding PSS business practices and the factors that may influence their environmental performance. In addition, few studies have investigated PSS in emerging economies. In this paper, we examine PSS business practices in relation to environmental sustainability for twenty businesses in Hanoi, Manila and Bangkok. Our aim is to understand business practices in this emerging economy context, and to determine the factors that enable or inhibit PSS businesses from achieving environmentally sustainable outcomes. We identified six sustainability criteria from the literature as the basis for analysing business practices: 1) using durable, quality goods; 2) intensifying use of goods; 3) enabling repair, take back and recycling of goods; 4) ensuring rental replaces purchase; 5) minimising transport and disposable packaging of goods; and for transport -6) reducing private vehicle kilometres travelled. Through qualitative analysis of interviews we found that business participants generally performed well in criteria 1-2, but performance across the remaining criteria depended on the context such as: market conditions, public infrastructure, housing form, customer behaviour and the nature of the product. Our findings highlight the need for policy interventions to facilitate more sustainable outcomes, including: guidelines and green accreditation; planning regulations / incentives to provide space for PSS businesses; and policies to encourage multiple passengers for transport sharing.

*Key words*: collaborative consumption; access-based consumption; sharing economy; sustainable development; emerging economy, sustainable consumption and production

#### 1. Introduction

Product-service system (PSS) business models are becoming more common for business to consumer exchanges, due to the popularity of concepts such as 'collaborative consumption' and the 'sharing economy', which frequently involve the use of PSS (Botsman and Rogers,

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