Essays on operational freight transport efficiency and sustainability

Niklas Arvidsson

Akademisk Avhandling

förr avläggande av ekonomie doktorsexamen i företagsekonomi som med tillstånd av Handelshögskolans fakultetsstyrelse vid Göteborgs universitet framlägges för offentlig granskning fredagen den 22 november 2013, klockan 13.15 i sal CG-salen, Handelshögskolan, Vasagatan 1, Göteborg.

Avhandlingen baseras på följande delarbeten:


Essays on operational freight transport efficiency and sustainability

Freight transport efficiency, as one proposed abatement strategy for transport related emissions, is a concept that has received much research attention during the last decade, often from the transport buyers’ perspective. In contrast, the aim of this thesis is to explore the subset concept of operational freight transport efficiency and how it affects transport related emissions from the perspective of the transport operator. The focus is on the transport operators and their interfaces with other actors such as transport providers/forwarders, transport buyers, and the society. I open with a dissection of the term “operational freight transport efficiency.” I make these primarily semantic efforts to open up and introduce a few aspects that are commonly overlooked. The concept is argued to be “fuzzy”, in the sense that it means different things depending on who you ask, and a “wicked problem”, in the sense that the problem has no clear solutions with significant and present trade-offs. The methodology, or vessel, used in this thesis to launch a “critical spirit” is “phronetic social science”. After phronetically testing the efficiency measures, some recommendations are presented. A suggestion on operational decarbonisation is provided and the attitudes and trade-offs among the actors are explored. The thesis identifies a gap with respect to the absence of a common semantic definition of the concept of operational freight transport efficiency measures. The thesis proposes that the gap be filled with the following derived definition of operational freight transport efficiency: “A set of utilisation measures of time, space, vehicle, fuel and driver in the movement of goods”. From the operators point of view, as well as from an aggregated level, also missing are the trade-offs between environmental and economic considerations. Most operational freight transport efficiency improvement measures are likely to reduce emissions, however; it is probable that mere cost-reduction measures will not lead to reduced emissions in the long term. The traverse across these topics represented by the present thesis is offered as a theoretical contribution to the discussion about defining what is meant by sustainable logistics. In other words, what the word sustainable means in a logistics context.

Key words: operational freight transport efficiency, operator, sustainability, logistics, phronetic

Printed in Sweden
Reprocentralen, Campusservice Lorensberg, University of Gothenburg, 2013
©Niklas Arvidsson