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PhD project: Economic barriers and drivers of energy efficiency investments in maritime shipping: an approach based on the principal-agent problem

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Summary: Reduced energy consumption is crucial to achieving more sustainable shipping. However, investments in energy efficiency are inhibited by barriers, which makes drivers necessary to reduce their effects. Consequently, concentrating on situations in which problems specific to the principal-agent relationship are identified, this paper focuses on the relevance of analyzing the influence of factors affecting the investment decision (Model I), as well as the investment preference between technical or operational measures (Model II). Mixed methods are applied to carry out an empirical analysis: a systematic literature review is performed, which lays the foundations for two binomial logistic regression models, one of which integrates the costs and the financial and environmental benefits of the measures with the study of barriers and drivers. The results show that older, less polluting vessels with lower activity levels, informational failures or those operating under time charter contracts are less likely to invest, especially in technical as opposed to operational measures. The opposite is true for vessels operating under voyage charter contracts, with verified information, higher activity levels, more polluting or new vessels affected by energy-environmental guidelines.

