

PLACEHOLDER THESIS TITLE
A VERY MEANINGFUL THESIS

by

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ABSTRACT

Here is some filler text.

FOREWORD

Acknowledgements blah blah blah

ABBREVIATIONS

GM: Green Mark environmental certification in Singapore.

DID: Difference-in-difference

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1 INTRODUCTION

The aim of this paper is to explore the signalling effects of a certification or award. The signalling effects of environmental certifications are important because these certifications are meant to incentivise certain behaviour, in this case, constructing energy efficient buildings. In order for certifications to incentivise private companies to adopt certain practices, they need to act as credible signals, i.e. provide a price premium to offset the cost premium associated with “good behaviour”. Certified buildings can have a price premium due to two reasons: either the signalling effect provided by the certification, or that good features tend to cluster together such that green buildings are also higher quality buildings in other aspects. This paper uses a difference-in-difference (DID) approach to isolate the signalling effect from any other factors that might contribute to a price premium.

Certification is required to incentivise the construction of green buildings because information asymmetries associated with green buildings imply that the market will not provide green buildings as it is not profitable to do so (Matisoff, Noonan, and Flowers 2016). While green features provide tangible and intangible benefits such as lower electricity bills and better environment, these features are unobservable at the demand side before purchase. Some of these features such as material sourcing might not even be observable after purchase. This problem is similar to the “market for lemons” problem (Akerlof 1970), where potential buyers cannot differentiate between the presence and absence of green features. As a result, there is a pooling equilibrium where potential buyers/tenants are not willing to pay more for green features which landlords or developers claim to exist. Assuming green features require additional costs to build in, the lack of price premiums means that building in green features leads to lower profits. Developers and constructors will choose not to build in green features to their buildings because the additional costs are not covered by a corresponding price premium.

A credible certification can verify these unobservable green characteristics and hence act as a signal to potential buyers about the green features and quality of the building. This would result in a price premium for green features, which would justify the additional costs required to build green buildings, increasing the construction of these buildings.

1.1 Green Mark (GM) Certification in Singapore

The Green Mark scheme was launched in January 2005 to encourage the construction of more environmentally friendly buildings. Buildings which apply for the Green Mark certification would be assessed on their energy

efficiency, environmental impact and indoor environmental quality. They would be scored on a points basis, and then these scores would be converted to an award type (Certified, Gold, Gold Plus, Platinum) based on the scores. For more information, see https://www.bca.gov.sg/GreenMark/green_mark_buildings.html.

2 LITERATURE REVIEW

There is a fair amount of literature showing the price effects of environmental certifications on property prices. However, there are fewer publications on why certifications have an effect on prices. Certifications can have an impact on prices in the market through the information that they provide to the market (information effect), and also by signalling unobservable quality (signalling effect).

Heinzle, Yip and Xing (2013), citing

3 DATA AND METHODOLOGY

4 EMPIRICAL RESULTS

5 CONCLUSION

REFERENCES

- Akerlof, George A. 1970. “The Market for ‘Lemons’: Quality Uncertainty and the Market Mechanism.” *The Quarterly Journal of Economics* 84 (3): 488. doi:10.2307/1879431.
- Heinzle, S L, A B Y Yip, and M L Y Xing. 2013. “The Influence of Green Building Certification Schemes on Real Estate Investor Behaviour: Evidence from Singapore.” *Urban Studies* 50 (10): 1970–87. doi:10.1177/0042098013477693.
- Matisoff, Daniel C., Douglas S. Noonan, and Mallory E. Flowers. 2016. “Green Buildings: Economics and Policies.” *Review of Environmental Economics and Policy* 10 (2): rew009. doi:10.1093/reep/rew009.