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# Human response to vibration in residential environments: Development of a social survey for the study of vibration annoyance in residential environments in Chinese

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<b>Publisher</b>	University of Salford
<b>Type</b>	Monograph
<b>USIR URL</b>	This version is available at: <a href="http://usir.salford.ac.uk/id/eprint/30814/">http://usir.salford.ac.uk/id/eprint/30814/</a>
<b>Published Date</b>	2012

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**Abstract**

The aim of this work is to produce an internationally comparable social survey for the study of the annoyance due to vibration and noise in residential environments in Chinese. The challenges that China will face in terms of noise and vibration annoyance in the process of urbanization will be no different to the challenges that other urbanizing/urbanized countries face today. Similar challenges are being encountered in other Chinese speaking countries, such as Hong Kong, Macau, Singapore, Malaysia and Indonesia.

Internationally standardized annoyance scales are required to compare community responses to environmental noise and vibration measured in various linguistic regions. ICBEN Team 6 organized an international joint study to establish standardized noise annoyance scales and has developed scales and questions in nine linguistic regions. Yano applied the method to construct annoyance scales in Chinese, Korean and Vietnamese.

This work extends the ICBEN work to construct annoyance scales in both Chinese and Simplified Chinese for exposure to environmental vibration.

Further, a social survey is produced in both Chinese and Simplified Chinese by translating the questionnaire used in the Defra NANR209 project 'Human Response to Vibration in Residential Environments', a national survey in the United Kingdom which produced exposure-response relationships for vibration and annoyance. The translated versions of both the survey and the core reporting information are here reviewed by a focus group and the feedback from the group presented together with recommendations for improvement and further work. It is concluded that an internationally comparable instrument for the collection of robust and reliable data to investigate public annoyance in relation to environmental vibration of Chinese speaking communities has been successfully drafted and is ready for pilot study.

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