Survey of occupant behaviour and control of indoor environment in Danish dwellings

Repeated surveys of occupant control of the indoor environment were carried out in Danish dwellings from September to October 2006 and again from February to March 2007. The summer survey comprised 933 respondents and the winter survey 636 respondents. The surveys were carried out by sending out invitations to addresses obtained from a Danish register along with information on dwelling characteristics. Meteorological data was obtained from the Danish Meteorological Institute. Four control mechanisms (window open/closed, heating on/off, lighting on/off and solar shading in/not in use) were analysed separately by means of multiple logistic regression in order to quantify factors influencing occupants’ behaviour. The window opening behaviour was strongly related to the outdoor temperature. The perception of the environment and factors concerning the dwelling also impacted the window opening behaviour. The proportion of dwellings with the heating turned on was strongly related to the outdoor temperature and the presence of a wood burning stove. The solar radiation, dwelling ownership conditions and the perception of the indoor environment also affected the use of heating. The results of the statistical analyses form a basis for a definition of standard behaviour patterns which can be used to make calculation of energy consumption of buildings more accurate.

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