Fiche analytique – Mémoire de Master MUSE

A rendre au secrétariat lors de l'inscription à la soutenance du mémoire

* champs obligatoires

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TITRE MEMOIRE*	Energy consumption, buildings' and socio-economic characteristics in Geneva			
NUMERO MEMOIRE			(à remplir par le secrétariat)	
DATE SOUTENANCE		Salle:		Heure:
THEMATIQUE* (AFFILIATION)	Energy			
VOLEE MUSE*	2017			
TITRE ACADEMIQUE* (par ex.: licencié en biologie)	Bachelor en économie et management			
DIRECTION* / EVALUATION	Directeur de mémoire* Martin Patel	Co-directeur de mémoire* Stefano Cozza	Nom(s) du ou des juré(s)* - - - -	
STAGE (éventuel)	Organisme d'accueil		Maître de stage	
Projet de l'ISE (éventuel) auquel le mémoire est rattaché				
Bourse (éventuelle) reçue par l'étudiant				
COLLATION*	Nb de pages* 54	Nb de figures* 12	Nb de tableaux* 2	
TERRAIN D'ETUDE OU D'APPLICATION	Genève			
MOTS-CLES* (entre 5 et 10)	Energy, residential, socio-economic			
RESUME* (max 1500 car)				
SUMMARY* (en anglais)	The Fukushima nuclear disaster in 2011 has driven Switzerland to restructure its energy system, and prepared a new ambitious energy strategy called the *"Energy Strategy 2050"* (ES-2050). The ES-2050's main goals are to reduce the final energy consumption and the electricity consumption through efficiency measures and by extending the use of renewable energy, while withdrawing the use of nuclear energy and meeting the energy demand. This thesis seeks to recommend solutions to comply with the ES-2050's objectives for the residential sector, at a local level. It analyses the relationship between the gas consumption for heating and hot water, and the electricity for appliances, with the buildings', and the socio-economic characteristics of single dwelling buildings in Geneva in 2017. The data are collected from Swiss institutions, then preprocessed to create a sample of 6,004 single dwelling buildings. Three models of Multiple Linear Regression are performed to assess the variability in the energy consumption. The first model contains only the buildings' variables and explains about 40% of the variability in gas consumption and 16% of the variability in electricity consumption. The second model, with the socio-economic variables, explains about 8% for each source of energy. The third model includes all variables and explains 43% of the variability in the gas consumption and 21% of the variability in electricity consumption. The results demonstrated that the			

	variability in gas and electricity consumption are related rather by buildings' characteristics than socio-economic characteristics, such as the construction period, the dwelling type, the total surface area, the number of rooms, and the location of the building. Moreover, as previous studies have shown, the buildings' characteristics are intertwined with the socio-economic characteristics, therefore, it is essential to consider both sets of characteristics to discuss the results. Results have demonstrated that the family status, the age of the head of the household, the gross income, and the number of inhabitants are relevant determinants related the buildings' characteristics and further clarify the variability in gas and electricity consumption. Finally, the thesis recommends solutions to meet the ES-2050's goals and depicts the challenges related to these suggestions.
REMARQUES	

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