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ARTICLE

The determinants of the mobility patterns of the elderly in Switzerland

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Abstract
Like most industrialized countries, Switzerland is characterized by an aging population. However, it differentiates itself from other countries because of its low home-ownership rate. Also, the lack of specialized housing for the elderly encourages them to stay in their current accommodation instead of moving to a smaller place thereby vacating space for family housing. Given this challenge, it is important for governments as well as other housing providers to understand better the needs of the elderly with respect to their housing situation and their patterns of mobility. Accordingly, our research aims to identify the key determinants that trigger the intention, on the part of the elderly in Switzerland, to move. For this purpose, we use secondary data obtained from the Swiss Household Panel, which is a longitudinal social sciences survey which annually interviews a random sample of private households in Switzerland using computer-assisted interviewing. We focus on respondents aged 60 and older over the period from 2013 to 2018, and our sample includes 13 313 observations. We investigate the role of intentions to move as a function of socio-demographic factors, health and life events, dwelling characteristics as well as satisfaction factors. By exploring the importance of these elements on the intention to move within a logistic regression model framework, we confirm the findings of recent studies including those that affirm that the willingness to move decreases with age, and that the elderly do not adapt the size of their home for a smaller dwelling. In addition, while we find no evidence for the impact of dwelling characteristics and health or life events, we provide empirical evidence for socio-demographic and satisfaction factors that influence the intention to move. From our results, we observe that not being satisfied with the accommodation, living in the German-speaking region of Switzerland, judging the accommodation to be too large, and being a tenant, all increase the intention to move. Our findings contribute to the welfare of the elderly in Switzerland by helping governments as well as private entities to plan housing adapted to their needs better.

Keywords Ageing · Mobility patterns · Dwelling choice · Intention of moving · Satisfaction with accommodation

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1 Introduction

During the last decades, we can observe a demographic transition with aging populations in many countries following the high fertility rate in the years after the Second World War (United Nations, 2002). The higher number of births in the middle of the twentieth century has led to an increase in people retiring today. With a higher life expectancy, the proportion of adults aged 60 years and over will reach 30Europe and North America (Eendebak, R. and World Health Organization, 2015). Willing to keep the elderly at home, governments face a challenge relating to spatial planning because there are also political plans to vacate large apartments/houses occupied by the elderly in order to re-allocate them to families (Burgess and Quinio, 2021). Aging in place is perceived positively by older people because they feel a sense of attachment, security and familiarity to their housing and the neighborhood (Wiles et al., 2012). Indeed, the elderly often occupy an inordinate amount of living space (Zimmerli, 2016). Furthermore, Edmonston and Lee (2014) demonstrate that the residential mobility rate of the elderly in Canada decreases with age. For instance, the likelihood of persons aged 85 years or older moving is 30% lower than for the 65–69 year olds. Conversely, the home-ownership rate declines in old-age as people draw on their housing equity. Indeed, real estate is the most widely-held asset, and is thus an important component of household wealth in European countries (Angelini and Laferrere, 2012). As the total number of elderly on the housing market increases, they play an important role in territorial development. Given the particular needs of social interactions and health services, it is crucial to understand better the appreciation of their accommodation and their dwelling preferences as well as their need for care services.

Although the topic of the elderly and their dwelling has already been widely studied (Roy et al., 2018), there is still a lack of knowledge and academic research about the potential elements which influence the choices of the elderly relating to a decision to move. Some papers study the relevance of new models of dwelling for the elderly, but few have observed the changes that the elderly adopted after their retirement. When observing elderly behavior, the consensus in the literature is that the vast majority of elderly people wish to stay as long as possible in their housing once retired (Bayer and Harper, 2000). Reasons to move are either to get a more comfortable housing situation while they are in good health, or to move to a more suitable lodging for health issues, as health issues often result in an obligation to move (Höpflinger et al., 2019). Furthermore, many determinants in research on elderly housing decisions have been studied. In their study, Lord et al. (2011) classify the variables that impact on housing decisions in six dimensions: psychological, social, economic, material, temporal, and space-time. However, not all the potential determinants have been identified, especially those in relation to life events and satisfaction factors. Thus, specific elements which determine a level of likelihood to move are still missing in the literature. And as the population is aging, it involves various current and future social challenges.

The aim of this study is to investigate what determines the intentions to move of Swiss residents aged 60 years and older by using the Swiss Household Panel waves from 2013 to 2018. Thus, the empirical analysis focuses on the elder Swiss population and deepens the understanding of socio-demographic characteristics, health and life events, dwelling characteristics, and satisfaction factors as determinants for their moving decisions. Conducting

this research is relevant because it helps to identify the profiles of the elderly who are willing to move and adds to our knowledge on how to improve the housing and living conditions of the elderly. Accordingly, our findings will also allow us to understand better and anticipate the demand on housing markets and to improve the well-being of the elderly. The key new aspects of the study are as follows: we focus on the elderly and their intention to move, we base our analysis on the, to date, unexplored variables included in the Swiss Household Panel referring to life events and satisfaction factors, and we run our study over a period of six years.

With currently 2.2 million inhabitants over 60 years of age, Switzerland is also living a demographic change (Swiss Federal Statistical Office , FSO, 2020a). According to the FSO, this population group will reach 3.1 million in 2050, representing 33% of the total population. The Swiss healthcare strategy strongly tends to foster the development of care at home, i.e., dependent elderly people with limitations to their daily activities are encouraged to continue living in their homes and be provided for by home-care services. Based upon its old-age policy strategy, the Swiss Federal Council investigates what framework conditions promote independent living during old age in terms of housing. Thereby, the focus is on the specific needs and expectations related to housing, the living environment and neighborhoods (Swiss Federal Council, 2007). Furthermore, the Swiss Confederation encourages the construction of housing that takes the interests of elderly persons into account (see the Federal Constitution, Art. 108, §4). Another specific aspect related to Switzerland remains in its very low rate of home ownership. Therefore, studying the elderly dwelling and behavior with regard to moving is aligned with the Swiss political strategy and helps to foster the development of adapted lodging for the elderly while guiding real estate investors. Future constructions should provide an answer to the needs and political objectives of society in order to overcome the needs of the elderly in relation to their housing.

For this purpose, we base our study on a logistic regression model which allows us to test the likelihood of the intention to move and the significance of the various covariates. Thus, we consider the variables that are found to be relevant in the existing literature and gather them into the four groups of socio-demographic factors, health and life events, dwelling characteristics and satisfaction factors. We then draw the hypotheses that each group of variables triggers the willingness to move. As the main result, we find that the intention to move is mostly driven by socio-demographic and satisfaction factors. The variables which explain the intention to move are various. Our analysis identifies factors with a high significance, such as not being satisfied with accommodation, living in the German-speaking region of Switzerland, judging the dwelling to be too large, and being a tenant. By running the same model for the years from 2013 to 2018, we are able to confirm the robustness of our results over time.

The present paper is structured as follows: in Sect. 2, we present a review of the existing studies. Section 3 provides additional information from the literature about elements that will be tested and the hypotheses for our investigation. Section 4 provides a description of the data, the variables used in the study, and descriptive statistics. Subsequently, the methods used as well as the main results are developed in Sect. 5. Finally, a discussion and a conclusion close the study in Sects. 6 and 7, respectively.

2 Literature review and background information

The purpose of this section is first to review the existing literature on the mobility of households and housing choices at retirement age and on an international level, and then to focus on the housing behavior of the elderly in Switzerland in particular. Elements highlighted in the studies help us to identify the relevant factors for studying the mobility behavior of the Swiss elderly and to draw the related hypotheses in the following section of the paper.

2.1 On the determinants of the patterns of mobility of the elderly

In their study, Roy et al. (2018) provide a systematic review of factors which influence housing decisions among frail older adults. By gathering characteristics from several studies on the housing-decision factors of the elderly, the authors deduce six main dimensions to explain patterns of mobility, namely, psychological and psychosocial, social, built and natural environment, time and space-time, economic, and socio-economic and health. Angelini and Laferrere (2012) observe residential mobility decisions of older adults and the elements impacting upon them. Based upon a survey covering eleven European countries including Switzerland, they find the main reasons for the elderly to move to another private lodging to be related to housing quality and mobility costs. They also note that the elderly usually reduce their housing consumption when moving, and that they tend to prefer apartments to houses and renting to owning. Trends and determinants related to residential mobility of the elderly in Canada have been studied by Edmonston and Lee (2014). They observe that, depending on the senior citizen's origin and the region of Canada in which he lives, Canadian motives to move differ significantly. They also find that the elderly often move soon after they have retired, are separated or widowed. Abramsson and Andersson (2012) studied whether the elderly quit their single-family-owned dwelling for a rented house or apartment. They discovered that most Swedish senior citizens do not opt for a change in residence once they have retired. Only a quarter of them move to a new dwelling. In addition, they noted that the majority remain owners of their housing, while only a minority moves to the rental or co-operative lodging. However, when senior citizens move, they are aiming for a more comfortable dwelling.

Caradec (2010) investigated the housing experiences of retired people in France. He shows the diversity in the residential behaviors of retirees and identifies four major rationales to re-construct the underlying motivations. The first relates to an economic logic. With lower revenues once retired, French senior citizens face financial difficulties. It becomes even more complicated to bear their accommodation burden once their partner has died. Secondly, health aspects partly explain their mobility patterns. Two motives related to health are cited: the quest for well-being, and the adaptation to functional limitations. Residential mobility is, therefore, considered as a comfort or as a constraint due to their health status. A third logic is linked to the family. Senior citizens have to decide whether to look for the proximity of their family or to search for independence. Fourthly, the territorial logic describes two types of attachments. The stronger the local attachment, the more the old are interested in staying in their current accommodation. Conversely, a minority is attached to their mobility, which is considered as a value. Thus, retirement is thus seen as an opportunity to move. Finally, a fifth logic related to conjugal status could be added. The choice of residence is mostly a matter of a conjugal choice, but it is sometimes imposed by one of the partners, usually by the husband.

A study by Gobillon and Wolff (2011) is based upon the French Europanel Survey and focuses on the determinants of the mobility patterns of senior citizens in France. The analysis highlights several self-motivation patterns to move. The more pronounced the willingness to live closer to other family members, the more they are willing to change housing size and to move geographically. The authors investigate whether these self-reported motives are correlated with individual characteristics. According to their results, women and persons living alone have a greater interest in living close to their family. Furthermore, senior citizens with higher incomes move more frequently for geographical reasons and to a more comfortable accommodation, while persons with low incomes are more likely to move to a smaller dwelling. Additional conclusions are that the elderly mainly choose to move in the year of their retirement and that housing conditions (including location) are often better after moving. Furthermore, housing adjustments most often lead to a correction of the initial disequilibrium position, i.e., "downsizing" is mainly observed for movers who have lived in a dwelling with excess rooms, while "upsizing" is more frequent for movers with formerly constrained living space.

2.2 Swiss studies on the determinants of the patterns of mobility of the elderly

In the report edited by Höpflinger et al. (2019), various themes about the aging Swiss population and their housing are discussed. Based upon a panel of 2 500 people over 65 years of age, the study provides input on the determinants favoring a change in the housing of the elderly. The work is particularly relevant for us as the data used are based upon a different Swiss panel. The authors observe that a large majority of the Swiss elderly remain sedentary for a long period, while only a minority deliberately change their residence. The motives of the elderly undertaking a move have been widely analyzed since 2004. The study highlights in particular that health issues often impose a move. Health is indeed a factor which influences behavior, and one which is beyond the control of the elderly. We refer to some of the results in Sect. 3 when deriving research hypotheses for the mobility patterns.

Zimmerli (2016) motivates her research based on Switzerland by the observations that the number of elderly is increasing and that they are occupying too much living space for their housing, negatively impacting a sustainable use of built-up areas. She provides empirical evidence for a higher willingness to move of elderly in case attractive alternatives to current housing solutions are offered. Furthermore, she finds that an upgrade of residential qualities or location and reduction of housework by reducing the size of the dwelling are triggering moving behaviors as well as are allowing seniors to become more mobile and independent. In addition, she notes that economics and social sciences should be considered in cooperative planning processes. In another study, Zimmerli (2012) investigates the changes in the social environment helping to describe both life and housing situations of elderly. She also identifies the housing needs and the reasons leading to an increased willingness to move, which she explains by the seniors' concept of life and their financial situation. However, extrinsic elements such as demographic changes and the real estate market also impact seniors' lodging preferences. In summary, the research provides information on social dynamics and economic conditions favoring a more efficient use of spatial planning.

The Swiss Federal Statistical Office (FSO) regularly publishes statistical data related to the living situation of the elderly in Switzerland. They observe that 96% of those 65 years old or over live at home (FSO, 2018). Health aspects are especially studied: two

out of ten persons aged 65 years or more, who are living in private households, are affected by limitations in the activities of daily living (FSO, 2014). Reports about the mobility patterns of the elderly are therefore mainly centered on health considerations, which are often mentioned as determinants to move (FSO, 2011, 2014, 2019a). Decisions to move are made by consensus by the elderly, their family, and their physician. Results show that 44% of the elderly benefit from home help and care services before institutionalization. Clearly, support services for housework and health assistance delay the transition of the elderly to a nursing home. There are more elderly people benefiting from these assistance services in Switzerland than people living in a nursing home. In addition, the FSO (2012) estimates that around one in four people living in a nursing home would still be able to live independently at home with specific support services. Another study provides valuable information on the living conditions of the elderly in Switzerland (FSO, 2018). However, we note that the motivational factors for moving decisions remain unobserved.

Finally, compared to other European countries, the low home ownership rate in Switzerland stands out. According to the FSO, only 36.3% of the Swiss population own a house or an apartment (FSO, 2019b), while in most OECD countries, more than two-thirds of households own their dwelling, either outright or with a mortgage (OECD, 2019). In Switzerland, renting through the private market is the most common form of tenure (56%) among households, inducing the lowest rate of ownership of all OECD countries. Nevertheless, the figures have been different for elderly since 54% of senior citizens own the dwelling that they occupy. In fact, the proportion of home-owners increases to almost 60% for people until the age group of 65-69 years of age. Then, this percentage declines with age. This phenomenon can be explained by the fact that some senior citizens wish to pass their family home on to their children while they continue to live in it. Another reason could be that older people may move to a rented lodging more suited to their needs (FSO, 2018).

3 Research hypotheses and selection of determinants

In this section, we discuss the determinants used in the extant literature to explain the patterns of mobility of the elderly. Our purpose is to identify the potential variables that impact upon the intention of the elderly to move, and to derive hypotheses linked to these variables. We group them into four categories, namely, socio-demographic factors, health and life events, dwelling characteristics, and satisfaction factors. These elements lead this study to four conjectures which speculate that each category may impact upon the moving intentions of elderly. In Table 1 at the end of this section, we summarize the main hypotheses held for each selected determinant.

Table 1 Summary of the reviewed factors influencing the moving behavior and related references

Factors		Expected effect on moving behavior		References
Socio-demographic factors	Intention to move	+	People with an intention to move undertake considerably more often a move.	de Groot et al. (2011b), Coulter (2013), Coulter and Scott (2015)
		⊘	Moving takes place over a longer period than expected. Motives may differ.	
	Gender (man)	+	Men more likely to move than women.	Edmonston and Lee (2014), FSO (2012)
		–	Less external help needed as their partner is younger/healthier.	
	Age	+	Young seniors move for retiring. More institutionalization after age of 75.	Angelini and Laferrere (2012), FSO (2012), Edmonston and Lee (2014), Höpflinger et al. (2019)
		–	Willingness to move decreases with age.	
	Nationality (foreigner)	+	At retirement age, many foreigners return to their original country.	Bigonnesse and Chaudhury (2020), Höpflinger et al. (2019), FSO (2011), Caradec (2010), Mínguez and Crespi (2017)
		–	Less foreigners use nursing home due to a different family care culture.	
	Language region (F, I)	–	Favoring aging in place, French- and Italian speaking areas discourage moving.	Dutoit et al. (2016)
	Income (high)	–	Income loss creates moves. High incomes and savings help with mobility costs.	Hasu (2018), Angelini and Laferrere (2012)
	Living with a partner (no)	+	Thank to mutual aid, couples require less external care assistance.	FSO (2011), Edmonston and Lee (2014), Gobillon and Wolff (2011)
		–	Unlike Canadian, French married seniors move more often.	
	Having children (no)	–	Widows aim at living closer to their children once retired.	FSO (2018, 2011), Angelini and Laferrere (2012), Höpflinger et al. (2019)
		⊘	Moving closer to the children depends more on neighborhood's attachment.	
	Ownership (no)	+	High transaction costs. Ease to adapt the lodging to specific needs for owners.	Angelini and Laferrere (2012), Edmonston and Lee (2014), Dipasquale and Glaeser (1999), Karlen et al. (2021), Andersson and Abramsson (2012)
		+	Stronger attachment for an owned house. Tenants' incentive to pay less rent.	
		–	Being tenant induces less management and maintenance care.	
	Type of housing (house)	+	From 62 years old, more people opt for an apartment.	Gobillon and Wolff (2011), Angelini and Laferrere (2012), FSO (2018)
		–	French seniors living in a flat head frequently towards a house.	
Health and life events	Health status (bad)	+	Health issues require an adapted housing located near services.	Bigonnesse and Chaudhury (2020), Höpflinger et al. (2019), Statistique Vaud (2018), Angelini and Laferrere (2012)
		⊘	Health matters once three limitations are felt.	
	Accident or illness (yes)	+	Moving is a strategy to deal with the inability to live independently.	van der Pers et al. (2018), Bigonnesse and Chaudhury (2020), Pagani et al. (2021), Caradec (2010)
		⊘	Seniors accommodate themselves with illnesses and stay in their dwelling.	
	Related ill/accident (yes)	+	The spouse's (worsening) health condition is a pattern to move.	Hasu (2018)
	Related died (yes)	+	The loss/death of a partner is a motive for moving.	Painter and Lee (2009)
	End relationship (yes)	+	Being widowed, divorced or recently divorced increases the likelihood to move.	Angelini and Laferrere (2012)
	Another life event (yes)	+	Changes in life, age-related losses and critical events force moves.	Kramer and Pfaffenbach (2016)

Table 1 (continued)

Factors		Expected effect on moving behavior		References
Dwelling characteristics	Housing quality (bad)	+	The indoor quality of a living environment of seniors needs adaptation.	Gobillon and Wolff (2011), Caradec (2010), Bamzar (2019)
	Number of rooms	+	French elderly tend to adjust the disequilibrium of the number of rooms.	Gobillon and Wolff (2011), Burgess and Quinio (2021), FSO (2018)
		⊘	Swiss and English elderly tend not to adapt the size of their accommodation.	
	Number of persons	–	The older they get, the more rooms per person they lose.	Angelini and Laferrere (2012)
	Housing costs (high)	+	Low income but wealthy thank to the house provoke its sale once retired.	Andersson and Abramsson (2012), Hoekstra and Dol (2021), Bigonnesse and Chaudhury (2020)
		+	Outright homeownership and affordable housing options foster a stay in place.	
Satisfaction factors	Accommodation (no)	+	Not being satisfied with the housing increases plans for moving.	Höpflinger et al. (2019), Jiang et al. (2020)
	Size (too large)	⊘	There are mostly satisfied with the lodging size. A minority downsizes.	Burgess and Quinio (2021), Höpflinger et al. (2019)Woo and Morrow-Jones (2011)
		+	Senior movers concentrate more on housing size than environment.	
	Heat/insulation (no)	+	Elderly tend to move to dwellings with better equipment.	Gobillon and Wolff (2011), Caradec (2010)
	Environment (no)	+	Movers tend to escape negative externalities of the neighborhood.	Cao et al. (2010), Caradec (2010), Höpflinger et al. (2019), Bigonnesse and Chaudhury (2020)
	Price (no)	⊘	Prices rise with years inducing high relocation costs.	FSO (2018), Statistique Vaud (2018)

Note: As opposed to −, the sign + relates to an expected intention to move

3.1 Intention to move

Various authors investigated the extent to which people effectively moved after having had the intention to do so (Clark and Lisowski, 2018). These studies have documented how the intention to move predicts a real move. Kan (1999) considers the willingness to move and mobility patterns of US citizens of all ages as part of an ongoing process. de Groot et al. (2011b) discovered that people with an intention to move re-locate considerably more often in comparison to households without any specific intention, although a move strongly depends on the resources and available opportunities. The more distinct the intention to move is, the more likely an actual move is. According to several studies, two-thirds of the persons with a strong intention to move actually move (de Groot et al., 2011a, b; Coulter et al., 2012; Coulter, 2013). It is also observed that moving takes place over a longer period than what the respondents were expecting. In addition, they find that strong intentions to move do not necessarily translate into the actual action of moving, given that economic resources are essential. Similarly, exogenous events could induce a move even though no moving intentions are present. Indeed, the above studies underline the fact that unanticipated events can significantly imply an immediate move in order to bear an uncomfortable situation. In other words, people are sometimes forced to move quickly for a more convenient lodging because of an unexpected event. Coulter et al. (2011) also investigate whether there exist differences between the intention and the desire to move. Their results point out that desiring to move is more associated with the dissatisfaction with the accommodation or problems with the environment, such as the neighborhood, rather than with the intention to move. Furthermore, in another study, Coulter and Scott (2015) compare the reasons for which people intend to move and those for which they effectively move. Surprisingly, motives diverge from time to time. Their findings suggest that the satisfaction with the environment has a high impact upon the intention to move but does not necessarily explain actual moves.

3.2 Socio-demographic factors

3.2.1 Gender

Women live longer than men (FSO, 2020b). In addition, they are usually younger than men in the couple relationship, which increases the probability of the wife taking care of her husband when he is facing health issues (FSO, 2012). It also appears that men live more often in houses, while women mainly live in apartments. This is mostly related to financial reasons because men benefit from a higher income (FSO, 2018). This could also explain why women move more often. However, while Gobillon and Wolff (2011) found that gender does not have any significant effect on the intention to move in France, Edmonston and Lee (2014) discovered that men are slightly more likely to move than women when looking at Canadian data.

3.2.2 Age

As Höpflinger et al. (2019) affirm, the majority of people in Switzerland stay in their place of residence and their intention to move decreases with age. Similarly, data from France (Gobillon and Wolff, 2011), Canada (Edmonston and Lee, 2014), The Netherlands and Belgium (Angelini and Laferrere, 2012) confirm that the probability of re-location once retired is higher among the younger age group of the elderly (below 70 years old),

which might be due to retirement mobility. However, with increasing age, as the elderly become dependent on health assistance and sometimes have to be institutionalized (FSO, 2012), there is a rebound of elderly mobility in most European countries once they reach 80 years of age and over (Angelini and Laferrere, 2012).

3.2.3 Nationality

Migration often results in a differentiation between Swiss citizens and foreigners (Bigonnesse and Chaudhury, 2020). Some elderly that immigrated to Switzerland at younger ages are sometimes keen to return to their home country once they have retired (Höpflinger et al., 2019). Another option that is observed is to keep two dwellings (Caradec, 2010). In addition, the FSO (2011) also observes less foreigners living in nursing homes, which may be justified by a different family-care culture (Mínguez and Crespi, 2017).

3.2.4 Language region

Composed of 26 cantons, Switzerland is divided into three linguistic regions, the German-, French- and Italian-speaking language regions.[1] The German linguistic region incorporates around two thirds of the Swiss population, while the French-speaking region encompasses 25%. The remaining population lives in the canton of Ticino, the Italian-speaking part of the country. Differences in the elderly-care strategies between cantons have been observed (Dutoit et al., 2016). These disparities lead us to hypothesize that particular care policies influence the willingness to move. With an approach favoring aging in place, the French- and Italian-speaking language regions discourage mobility. According to Duncombe et al. (2003), further relevant factors are attributed to specific regions, such as taxes, public services, economic conditions, population characteristics and climate induce different location decisions. Höpflinger et al. (2019) indeed observe lower revenues for households in the French- and Italian-speaking language regions and differences in their environment, which impacts upon the households' satisfaction with their accommodation and thus on their moving plans.

3.2.5 Income

As stated in the French study by Gobillon and Wolff (2011) and in the Finnish study by Hasu (2018), the loss to household income associated with retirement is a major reason to move. However, only a minority of senior citizens is able to afford relocation in a dwelling adapted to their health needs, given that these accommodations are often newer and more expensive than their current dwelling (Statistique Vaud, 2018). Furthermore, Angelini and Laferrere (2012) report that high incomes and savings help to deal with mobility costs. They also find that, with respect to moving, income is only significant for tenants. Thus, the level of income does not explain moving for owners.

[1] The German-speaking language region includes the following cantons: Aargau (AG), Appenzell Innerrhoden (AI), Appenzell Ausserrhoden (AR), Bern (BE), Basel-Landschaft (BL), Basel-Stadt (BS), Glarus (GL), Graubünden (GR), Lucerne (LU), Nidwalden (NW), Obwalden (OW), St.Gallen (SG), Schaffhausen (SH), Solothurn (SO), Schwyz (SZ), Thurgau (TG), Uri (UR), Zug (ZG), and Zurich (ZH). The French-speaking language region comprises Fribourg (FR), Geneva (GE), Jura (JU), Neuchâtel (NE), Vaud (VD), and Valais (VS). The Italian-speaking language region corresponds to the canton of Ticino (TI).

3.2.6 Living with a partner

Being married or living with a partner reduces the likelihood of needing home support and care services (FSO, 2011), which lets us expect that couples move less. Nevertheless, for France, there exists empirical evidence for married senior citizens to move more often in comparison to all other marital statuses (Gobillon and Wolff, 2011). In Canada, conversely, being officially married impacts upon the mobility patterns in reverse (Edmonston and Lee, 2014).

3.2.7 Having children

Höpflinger et al. (2019) notice that the wish to live close to their children depends on the attachment that the elderly have with their current neighborhood. Gobillon and Wolff (2011) note that the number of children does not have a significant impact. Further, the FSO (2018) does not observe an adaptation of senior citizens' accommodation to the structure of the household. Nevertheless, French widows are reported to be more likely to move closer to their children (Angelini and Laferrere, 2012).

3.2.8 Ownership

Compared to younger people, senior citizens are more often homeowners, but the ownership rate decreases after the age of 72 years (Statistique Vaud, 2018). Being an owner has a negative effect on mobility in France (Gobillon and Wolff, 2011) and in Sweden (Andersson and Abramsson, 2012). The underlying reasons could be that the mobility costs that are higher for owners due to significant transaction costs (Dipasquale and Glaeser, 1999) and because arranging an accommodation to their needs tends to be easier for owners than tenants (Angelini and Laferrere, 2012). Similar results exist for Canada, where the difficulty of selling a lodging and the attachment to it are mentioned (Edmonston and Lee, 2014). To encourage senior citizens to quit their large, owned, cost-effective accommodation, Karlen et al. (2021) suggest that financial incentives be provided by reducing the rent for smaller dwellings, as is currently practiced in cooperatives, in the private rental market. However, when considering the onset of age-related disabilities, ownership induces more management and maintenance duties, which become a burden, especially for the elderly living alone (Angelini and Laferrere, 2012).

3.2.9 Type of housing

Similarly to the ownership, living in a house decreases the intention to move (Gobillon and Wolff, 2011). However, the FSO (2018) has discovered that among persons aged 62 years and over, there are significantly more movers choosing an apartment. Angelini and Laferrere (2012) observe that the proportion of people transiting from a house to an apartment goes from 47% in the age group of 50-59 years of age to 63% for those aged 80+ years. Notwithstanding, almost one-third of senior citizens (mostly men) still live in a house (FSO, 2018). Inversely, in France, retired people living in a flat head frequently toward a house, to benefit from a garden, more privacy and thus less trouble from neighbours (Gobillon and Wolff, 2011)

3.2.10 Conjecture 1

Socio-demographic aspects such as gender, age, nationality, language region, income, living with a partner, having children, ownership and the type of housing are expected to have a major impact on mobility and housing decisions.

3.3 Health and life events

3.3.1 Health status

Vulnerable people with reduced mobility may require housing that is located close to services, that has no architectural barriers, and that offers medico-social support or home assistance and care (Statistique Vaud, 2018; Bigonnesse and Chaudhury, 2020). More than half of senior citizens affected by functional limitations receive help from their relatives or from a home assistance and care service (FSO, 2014). In Europe, it appears that the health status becomes a significant driver for moving once senior citizens face at least three limitations with mobility, arm functions or fine motor functions (Angelini and Laferrere, 2012). Höpflinger et al. (2019) observe that healthy retired people in Switzerland move to improve the quality of their dwelling, whereas fragile people are often forced to move against their will. As for the oldest, when they move, it is to enter a nursing home.

3.3.2 Life events

At higher ages, changing residence can be a strategy to anticipate or to deal with the inability to live independently (van der Pers et al., 2018; Bigonnesse and Chaudhury, 2020; Pagani et al., 2021). Although moving to a flat adapted to old-age difficulties helps, the elderly often choose to continue living with their reduced mobility in their current lodging (Caradec, 2010). Furthermore, patterns of mobility also depend on one's partner. According to various studies, reasons to move are related to the spouse's (worsening) health condition (Hasu, 2018). Painter and Lee (2009) point out the loss or death of a partner, and changes in the current situation with children (e.g., re-location, need for childcare or assistance with housework) as additional determinants. According to Angelini and Laferrere (2012), being widowed, divorced or having recently divorced increases the likelihood of moving. Kramer and Pfaffenbach (2016) describe the catalysts to moving as follows: change in the lifecycle stage, age-related losses and critical events or health, and being forced to move. Certainly, more specific events might happen, such as the case of inheritance laws that force a surviving parent to share the estate with their children, and, hence to sell the home (Angelini and Laferrere, 2012).

3.3.3 Conjecture 2

Health factors and life events have a major impact on mobility and housing decisions.

3.4 Dwelling characteristics

3.4.1 Housing quality

As health weakens, the quality of the indoor living environment in old housing has to be adapted to increase the safety of the inhabitants (Bamzar, 2019). Risks of falls and injuries

for the elderly must be considered when building a new housing (Statistique Vaud, 2018). It indeed appears that, in France, the housing quality matters for the decisions of elder people to move (Caradec, 2010; Gobillon and Wolff, 2011).

3.4.2 Number of rooms

Compared to couples and single people of any age, Swiss senior citizens live more often in a four-room apartment or an even larger dwelling (FSO, 2018). In Switzerland, elderly people do not tend to adapt the size of their accommodation to their actual needs, whereas in France, they have a tendency to adjust the disequilibrium in the number of rooms, i.e., they increase the size of their accommodation when the number of rooms is low, and they decrease it when there are several excess rooms by moving (Gobillon and Wolff, 2011). In England, Burgess and Quinio (2021) observe that a large proportion of households moved to a house with the same number of bedrooms.

3.4.3 Number of persons

The dwelling size is related to the number of persons in the accommodation. According to Angelini and Laferrere (2012), the older the individuals in a household become, the more rooms per person they lose in the event of a move.

3.4.4 Relative housing costs

In Sweden, it has been observed that households with lower incomes but with wealth related to home ownership are more likely to sell their accommodation once they are retired than households with higher incomes (Andersson and Abramsson, 2012). The wealth linked with real estate generates costs, which are not always affordable for retired people with low incomes. However, outright home ownership also offers a "free" roof over one's head (Hoekstra and Dol, 2021). Indeed, the residential mobility of persons with a solid financial situation is not affected by the relative housing costs. They tend, instead,to re-locate to a more comfortable place. Affordable housing options help people to remain in their accommodation (Bigonnesse and Chaudhury, 2020).

3.4.5 Conjecture 3

Dwelling characteristics, such as housing quality, number of rooms, number of persons, and relative housing costs, are expected to have a major impact on mobility and housing decisions.

3.5 Satisfaction factors

3.5.1 Satisfaction with accommodation

The planning to move to a newly built or adapted apartment increases if the current dwelling is not suitable for people with reduced mobility (Höpflinger et al., 2019). Generally, the intention to move is significantly influenced by housing satisfaction (Jiang et al., 2020) and accommodation quality problems influence the patterns of mobility (Gobillon and Wolff, 2011). While the general satisfaction can be a driver, there are several specific elements that may generate dissatisfaction.

3.5.2 Satisfaction with size

A large majority of the elderly consider the current size of their home to be appropriate, and only a minority of older households choose to downsize (Burgess and Quinio, 2021). A share of 15–20% of them find it to be too large (Höpflinger et al., 2019). According to Woo and Morrow-Jones (2011), size is important because movers concentrate on the housing size and distance to preferred locations, rather than on the environment of their current neighborhood. Opting for a smaller accommodation is particularly linked to widowhood, age, and a reduction in household size (Angelini and Laferrere, 2012).

3.5.3 Satisfaction with heat/insulation

Elderly people tends to move to dwellings with better equipment (Caradec, 2010), in particular, preferring accommodations with better heating systems (Gobillon and Wolff, 2011).

3.5.4 Satisfaction with environment

The neighborhood plays a major role for the mobility of senior citizens (Caradec, 2010) and the elderly usually move to places of interest (Cao et al., 2010). Movers also tend to escape from negative externalities such as difficulties to access housing, the absence of nearby shops, noise pollution, and conflicts with neighbors (Höpflinger et al., 2019). Bigonnesse and Chaudhury (2020) observe that the accessibility of the immediate environment impacts upon the independence of the elderly.

3.5.5 Satisfaction with price

Older tenants often benefit from lower rents thanks to the dilapidation of their dwelling and rent control (FSO, 2018). Indeed, re-location costs discourage people from moving, given that prices have risen significantly over the years (Statistique Vaud, 2018).

3.5.6 Conjecture 4

Satisfaction factors such as satisfaction with accommodation, size, heat/insulation, environment, and price, have a major impact on mobility and housing decisions.

4 Data and descriptive statistics

4.1 Swiss household panel and sample

We base our analysis upon secondary data obtained from the Swiss Household Panel (SHP, FORS, 2021), a unique longitudinal social sciences survey interviewing all household members of a random sample of private households in Switzerland. The Panel is run by the Swiss Center of Expertise in Social Sciences (FORS), and its main goal is the observation of social change, in particular the dynamics of changing living conditions in the population of Switzerland thanks to a nationally representative study (Tillmann et al., 2016). Since 1999, data have been collected annually using

computer-assisted telephone interviewing. The SHP data cover a broad range of topics and are available free of charge to the scientific community. With over 13 000 people interviewed annually, this Panel offers representative data at household and individual level for Switzerland. The data of this ongoing, large-scale, and national study provide a rich source of information. In particular, the survey includes information about the housing situation, especially about preferences, consumption, and the patterns of movement of households in Switzerland.

Our main sample is a subset of SHP and includes a total of 2 259 households in Switzerland for the year 2018 (wave 20) in which the head of the household is 60 years of age or older. Overall, 13 751 persons were interviewed, but, according to a standard procedure (Tillmann et al., 2018), we decide to use the head of the household only (6 029 persons). The latter is defined as the main earner of the household. We then extract those aged 60+ (2 505 persons) and exclude the entries with missing information. While the variables about individual characteristics refer to the head of the household, a set of additional variables were collected at the household level. To study the evolution of determinants over time, we create another sample with data from earlier waves, including the years from 2013 (wave 15) to 2018. This sample includes unique 13 313 heads of household aged 60 or older. Although the survey started in 1998, we only use data from 2013 onward, given that some variable definitions have changed over these years. Also, some variables of interest, such as satisfaction with the accommodation and satisfaction with the heating and insulation, were not collected prior to 2013.

4.2 Description of the variables

The selection of the variables used in our analysis is based upon the existing literature and the hypothesis discussed in Sect. 3, in particular Roy et al. (2018). Further, we base our study on the SHP. This entails that it remains limited to factors for which data are available. On the other hand, the SHP data contain potentially interesting variables that have not been investigated in former studies, such as specific life events and satisfaction factors. Table 2 includes the description of the variables used in our analyses.

To prepare the data for the regression analysis proposed in Sect. 5, we transform continuous-valued factors into binary or categorical variables. For each variable, the category used as the reference level is printed in bold type in Table 2. Thereby, the reference level refers to the category with the highest number of cases in the data. Categories are built in line with the distribution of the observations, i.e., we propose sufficiently representative categories. Entries with missing data are removed, except when only income information, housing costs or satisfaction with price are missing. Indeed, for the latter three variables, observations are not excluded, given that many entries miss that information. In variables with missing observations, the corresponding entries are grouped in a separate category labeled “no info”.

4.2.1 Intention to move

The response variable "intention to move" (*INT*, code p18h04 in the original SHP data) is based upon the following question: *In the coming 12 months, what does your intention to move look like, if 0 means “no intention to move at all" and 10 means “certainly”?* Based upon the distribution of the answers, we transform the numerical answer into a binary variable, interpreting all non zero values as an intention to move. Indeed, out of the total of 2 259 respondents, 1 952 (86.4%) of them do not express any intention to move. The

Table 2 Summary of the variables

Variable	Description	Categories	Code
INT	Intention to move	**No**, yes	p18h04
Socio-demographic factors			
AGE	Age	**60–64**, 65–69, 70–74, 75–79, 80–84, 85+	age18
SEX	Gender	**Female**, male	sex18
NAT	Nationality	**Swiss**, foreigner	nat_1_18
LNR	Language region	**German**, French, Italian	canton18
INC	Net income	**<51k**, 51k-77k, 77k-110k, 110k+, no info.	i18htyn
PAR	Living with a partner	**Yes**, no	p18d29
CHI	Having children	**Yes**, no	ownkid18
OWN	Ownership	**Yes**, no	h18h29
TYP	Type of housing	**Apartment**, house	h18h15
Health and life events			
HEA	Health status	**Well**, not well	p18c01
LIV	Lived an accident or an illness	**No**, yes	p18l01
REL	Related person with illness/accident	**No**, yes	p18l06
DEA	Lived a death in a relationship	**No**, yes	p18l11
END	Lived an end in a relationship	**No**, yes	p18l16
OTH	Lived another life event	**No**, yes	p18l90
Dwelling characteristics			
QUA	Housing quality	Bad, **average**, good	h18h14
ROO	Number of rooms	1-2.5, 3-3.5, **4-4.5**, 5-5.5, 6+	h18h20
PER	Number of persons	1, **2+**	nb_pers
RHC	Relative housing costs	**Below 18.39%**, above 18.39%, no info.	h18h37/i18htyn
Satisfaction factors			
SAT	Satisfaction with accommodation	0–6, 7, 8, 9, **10 (fully satisfied)**	h18h12
SIZ	Satisfaction with size	**Not too large**, too large	h18h24
INS	Satisfaction with heat/insulation	**Yes**, no	h18h25/h18h53
ENV	Satisfaction with environment	**Yes**, no	h18h26/h18h27/h18h28
PRI	Satisfaction with price	Price low, **reasonable**, too high, no info.	h18h38

Categories in boldface denote the baseline used in the regression analysis in Sect. 5.2. The column "code" refers to the variables' name in the original data in wave 20 of the SHP

remaining 307 observations are distributed between all levels of the intention to move variable (between 0.4% and 2.3%). We thus detect a contrast between the majority of the elderly not desiring to move and the others (see also the descriptive statistics in Sect. 4.3 and Fig. 1).

4.2.2 Socio-demographic factors

We group the ages of the respondents (*AGE*) into classes spanning five years, using 85+ as the last category after which the number of cases is very low. Two indicators for the gender (*SEX*), male and female, are maintained. The Swiss nationality is kept as the reference level and all other nationalities (*NAT*) are grouped in a category labeled "foreigners". We do not further differentiate among the first nationalities since the majority of the respondents (93.9%) is from Switzerland and all other countries except the neighboring countries of France, Germany, and Italy are seldom represented. Swiss cantons are allocated to their linguistic region (*LNR*),

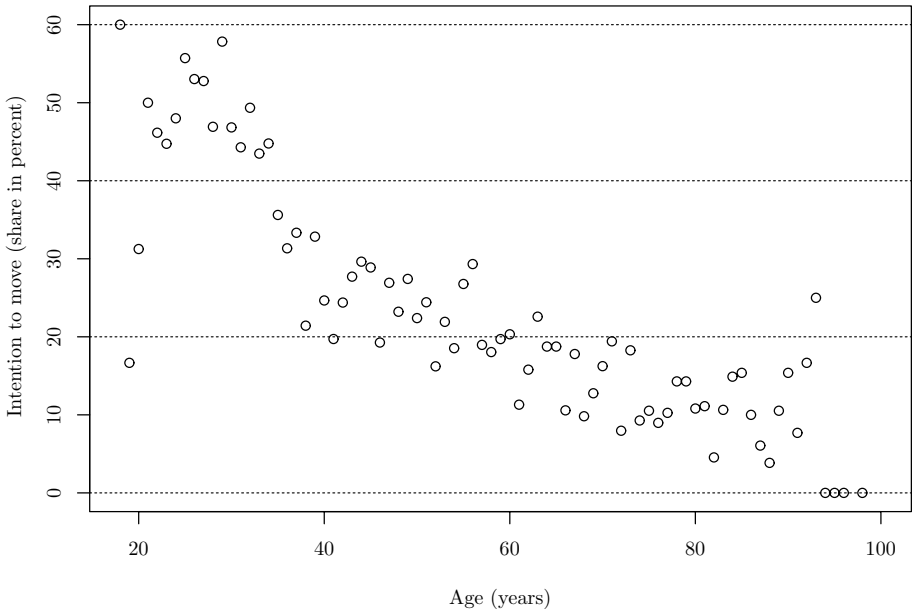

Fig. 1 Intention to move by age

namely, to the German-, French- or Italian-speaking part, in order to investigate whether cultural aspects associated with the language regions impact upon the intention move. The level of net income (*INC*) is categorized into quartiles. Entries with missing income values are grouped into the category "no info" to avoid losing these observations (9.21%). From the question related to "having a partner" (code p18d29), we extract information about the more specific answer about "living with a partner" and create a binary variable (*PAR*). Using the original numerical variable referring to the number of children, living in the same accommodation or not, we create a binary variable to capture whether the head of the household has any children or not (*CHI*). Note that the SHP does not allow us to investigate the effect of having grandchildren, as this information is not available. We distinguish people owning their home from tenants, and observe home ownership through the *OWN* variable. Thereby, non-paying tenants are placed with tenants in one category, as they do not own their domicile. As to the type of residence (*TYP*), in addition to houses, we also consider detached, semi-detached and terrace buildings as houses while other types of residences are grouped in the apartment category.

4.2.3 Health and life events

The health status (*HEA*) contains two categories with the elderly being also classified, but only if they consider their health status as "well" or "very well" (response levels 1 and 2 in p18c01). Thereby, we associate the responses of "average" and worse in the second class. The other variables in this group relate to changes in life, and are binary. The respondents were asked whether or not they had recently lived any of the following events: an illness, an accident or a serious health problem (*LIV*), a closely-related person affected by an illness, an accident or another serious health problem (*REL*), a closely-related person who had died (*DEA*), a close and important relationship that had ended in break-up, separation, or divorce

(*END*), or another serious problem that had affected them (*OTH*). As we do not observe a significant correlation between these variables, we include all of them in our modeling.

4.2.4 Dwelling characteristics

We distinguish the housing quality (*QUA*) with the three categories "bad", "average" (referring to a building not recently renovated but still in good condition) and "good" for a new or recently renovated building. As to the size of the home, the number of rooms (*ROO*) is considered in the five categories 1–2.5, 3–3.5, 4–4.5, 5–5.5 and 6+. Accommodations with more than six rooms are rare. The number of persons (*PER*) in the household is either 1 or 2+. We do not consider households with more than two persons separately since they represent less than 7% of the total. Dividing the monthly expenses by the level of income, we obtain the relative housing costs (*RHC*), which we separate into two groups, below and above the median, which amounts to 18.39%. Since some entries do not provide this information, we also consider a group labeled "no info". Focusing on relative housing costs rather than on the absolute spending allows us to consider whether the relative share of the income spent for the housing is important.

4.2.5 Satisfaction factors

We retain five categories to describe the satisfaction with the accommodation (*SAT*): 0–6, 7, 8, 9, and 10. We group the levels between 0 and 6 because the share of records for the individual levels are below 3%. The variable with the SHP code h18h24 indicates whether the dwelling is considered to be too large or not (*SIZ*). The variables related to satisfaction with the heating and satisfaction with the insulation are grouped together to form one variable entitled satisfaction with heat/insulation (*INS*). Whenever the respondent is not satisfied with either heat or insulation, we consider this as a "no" for variable *INS*. Similarly, we create a new variable labeled "satisfaction with the environment" (*ENV*). It includes noisy external environments, problems with vandalism in the neighborhood, and problems with pollution, the environment, traffic, or industry. If someone faces one of these problems, a "no" is reported in variable *ENV*. We do not observe significant correlations between these factors. Finally, the variable satisfaction with the price (*PRI*) is constructed based upon the three categories, 1–2 for low, 3 for reasonable, and 4–5 reporting excessive expenses for accommodation.

4.3 Descriptive statistics

Starting with the intention to move, we illustrate the share of heads of household that intend to move within the next year as a function of age in Fig. 1. Considering all the heads of household, regardless of age, we identify three groups: the younger persons until around 38 years of age, of whom more than 40% are willing to move, the ones aged between 38 and circa 60 years, with a share between 20% and 40% willing to move, and the senior citizens aged 60 years and over, who have a lower intention to move (below 20%). Given that the low interest to move tends to stabilize after the age of 60 years, the graph supports the threshold of 60 years of age as a cut-off point for including entries in our analysis. As laid out above, in the sequel, we focus on observing the factors that generate an intention to move at these higher ages. While, for social policies in Switzerland, the legal retirement

age is 65 years of age for men and 64 for women, many people retire earlier. Thus, including the persons aged 60+ in our sample allows us to consider those who prepare their retirement phase by planning a move to a location better adapted to their needs. Indeed, many persons might also consider a move before their retirement when their revenues are still higher.

In Table 3, descriptive statistics for the year 2018 are presented for all variables reported in Table 2. Based upon our data sample (total $N = 2\,259$), we indicate the number of respondents and the corresponding share for the categories in each variable. For each category, we also report the share of individuals intending to move (*INT*). In the following we highlight some of the main observations.

Among the socio-demographic factors, we observe important variations in the intention to move in terms of nationality, language region, and ownership. It appears that the share of the respondents intending to move is decreasing with age. In our sample, the females are more numerous but they have a similar share of respondents intending to move as the male respondents. When compared to the respondents with Swiss nationality, foreigners are under-represented in our sample and are only half as interested in a change of residence. We observe important differences between the language regions. In comparison to senior citizens from the French- and Italian-speaking regions of Switzerland, the elderly living in the German language region show an intention to move that is two times higher. While we do not detect relevant differences in the intention to move between the income categories, living without a partner increases the likelihood to consider moving by 5.5 percentage points. In our sample, only 59% of senior citizens co-habitate with a partner. Most senior citizens have children, but this fact does not seem to impact importantly upon their intention to move. In our sample, 62% of the heads of household are owners. We observe that being an owner decreases the intention to move (by 8 percentage points). The same holds for those living in a house as opposed to apartment housing.

In the group of health- and life-events factors, we observe some important variations in the declared intention to move. For example, the health problems of the head of the household increase the intention to move, which is not surprising. Almost a quarter of the interviewees declare that they face health difficulties. In the variables related to an accident or an illness, or to the end of a relationship, we identify differences in the intention to move triggered by the event. Some of the results seem relatively solid, e.g., about 30% of the respondents have lived an accident or an illness, while some figures must be interpreted with care (e.g., end of a relationship, other life events) since less than 5% of the respondents have experienced such an event.

With regard to dwelling characteristics, we find that very few households rate their housing quality as bad. It is reasonable to surmise that the better the perception of their residence, the less they are willing to change. Further, we observe that 70% of the elderly live in a dwelling with 4 rooms or more. Hence, they occupy—on average—relatively large dwellings, in comparison to the number of persons in the household. For the number of persons in the dwelling, we observe that single households (38%) report a higher intention to move, in line with what has been found for respondents living without a partner. Also, respondents having relative housing costs below the median show a lower intention to move (around 5 percentage points).

Finally, the descriptive statistics reveal important differences in the intention to move through the different satisfaction factors. Disparities are particularly important when looking at the level of overall satisfaction with the accommodation. The majority of senior citizens are fully satisfied (36%) and thus have little intention of moving (7%).

Table 3 Distribution of the overall sample ($N = 2\,259$) and share of respondents' intention to move for the year 2018

	N	(%)	*INT*		*N*	(%)	*INT*
Socio-demographic factors							
Age				*Net income*			
60–64	529	23.42	17.58	No info.	208	9.21	13.94
65–69	478	21.16	13.18	<CHF 51k	513	22.71	14.81
70–74	489	21.65	13.70	CHF 51k–77k	516	22.84	13.95
75–79	348	15.41	11.49	CHF 77k–110k	511	22.62	11.55
80–84	233	10.31	10.30	CHF 110k+	511	22.62	13.89
85+	182	8.06	10.99	*Living with a partner*			
Gender				Yes	1332	58.96	11.34
Female	1281	56.71	13.27	No	927	41.04	16.83
Male	978	43.29	14.01	*Having children*			
Nationality				Yes	1865	82.56	13.67
Swiss	2121	93.89	14.00	No	394	17.44	13.20
Foreigner	138	6.11	7.25	*Ownership*			
Language region				Yes	1402	62.06	10.63
German	1628	72.07	15.42	No	857	37.94	18.44
French	535	23.68	8.97	*Type of housing*			
Italian	96	4.25	8.33	Apartment	1336	59.14	14.15
				House	923	40.86	12.78
Health and life events							
Health status				*Lived a death in a relationship*			
Well	1756	77.73	12.81	Yes	631	27.93	13.31
Not well	503	22.27	16.30	No	1628	72.07	13.70
Lived an accident or an illness				*Lived an end in a relationship*			
Yes	665	29.44	15.04	Yes	103	4.56	18.45
No	1594	70.56	12.99	No	2156	95.44	13.36
Related person with illness/accident				*Lived another life event*			
Yes	726	32.14	14.46	Yes	77	3.41	11.69
No	1533	67.86	13.18	No	2182	96.59	13.66
Dwelling characteristics							
Housing quality				*Number of persons*			
Bad	19	0.84	31.58	2+	1402	62.06	11.98
Average	1885	83.44	13.79	1	857	37.94	16.22
Good	355	15.71	11.55	*Relative housing costs*			
Number of rooms				No info.	349	15.45	12.32
1 – 2.5	184	8.15	14.13	Below 18.39%	955	42.28	11.41
3 – 3.5	508	22.49	14.17	Above 18.39%	955	42.28	16.23
4 – 4.5	655	29.00	14.20				
5 – 5.5	480	21.25	11.46				
6+	432	19.12	14.12				
Satisfaction factors							
Satisfaction with accommodation				*Satisfaction with heat/insulation*			
0 – 6	144	6.37	34.03	Yes	1906	84.37	12.91
7	157	6.95	21.66	No	353	15.63	17.28

Table 3 (continued)

	N	(%)	*INT*		*N*	(%)	*INT*
8	635	28.11	16.22	*Satisfaction with environment*			
9	510	22.58	12.55	Yes	1664	73.66	12.14
10 (fully satisfied)	813	35.99	7.01	No	595	26.34	17.65
Satisfaction with size				*Satisfaction with price*			
Not too large	1824	80.74	11.73	No info.	67	2.97	7.46
Too large	435	19.26	21.38	Price low	520	23.02	11.35
				Reasonable	1405	62.20	13.24
				Too high	267	11.82	21.35

The columns *N* and "(%)" indicate the number of observation and the corresponding share in each category. Column "INT" reports the share of respondents in % that have indicated intending to move

However, at lower satisfaction levels, their wish to move sharply increases to values above 20%. This observation holds for all satisfaction factors: while most of the heads of household are satisfied with their accommodation regarding size, heat/insulation, environment, and price, for those where dissatisfaction is felt, the share of households intending to move increases.

5 Model framework and results

5.1 Regression models

To determine which factors significantly influence the moving intentions of senior citizens in Switzerland, we aim to fit a regression model on to the SHP data. It should be recalled that, whether or not the elderly intend to move is coded in the binary variable *INT* with values "not intending to move" (value 0) or "intending to move" (value 1). We therefore adopt a regression model yielding probability values in the interval (0; 1). We first consider the whole set of variables introduced in Table 2 in an explanatory model expressing the intention to move *INT* through the vectors of socio-demographic factors (*sociodemo*), health- and life-event factors (*healthlife*), dwelling characteristics (*dwelling*) and satisfaction factors (*satisfaction*). Denoting with $\boldsymbol{\beta}_j$, $j = 1, \ldots, 4$, the four vectors of regression coefficients, β_0 a constant and ϵ_i the error term in observation i, the econometric model can be written as:

$$g(INT_i) = \beta_0 + \boldsymbol{\beta}_1 sociodemo_i + \boldsymbol{\beta}_2 healthlife_i + \boldsymbol{\beta}_3 dwelling_i + \boldsymbol{\beta}_4 satisfaction_i + \varepsilon_i. \quad (1)$$

We use a logistic regression and consider the logit link function g. The choice between the logit and probit models was guided by the Akaike information criterion (AIC) selecting the best statistical model for our data. AIC is an estimator of prediction error that evaluates the quality of different models. By comparing the quality of each of these models, the AIC allows us to select the best model based upon the given data. Concretely, AIC calculates the relative amount of information lost by a given model: the more information a model loses, the lower the quality of that model. Indeed, the logit link function (AIC = 1 676.5) fits the model slightly better when compared to the probit link function (AIC = 1 679.1).

For further research, we consider a second model entitled "Best AIC" where the variables are retained if they fulfill two criteria. The first one is that that the inclusion of a given variable decreases the AIC, and the second one is that the associated regression coefficient is statistically significant at the 10% level. These criteria allow us to select variables that improve the model, but, at the same time, avoid the increasing risk of over-fitting. With the logit link function, our reduced model displays an AIC value of 1 644.3. Using the same variables with a probit link function would raise the AIC value to 1 646.9.

5.2 Regression results

In Table 4, we report the results from estimating the regression model (1) with the SHP data for the year 2018. In the first part, we estimate the "full" model using the whole set of variables from Table 2 and report the corresponding coefficients, standard errors and statistical significance levels. In the second part, we provide the results from the "best AIC" model. The model results are based upon the calculated the probability g for the intention to move from Eq. (1), which yields the odd ratio for each variable. Thereby, positive coefficients relate to an increased intention to move.

With respect to the socio-demographic factors, we find that, once senior citizens become older, their intention to move decreases. This observation is significant for ages above 75 years of age when compared to the baseline of those aged 60–64 years. This observation might be related to the fact that moving is exhausting and human stamina decreases with age. Also, senior citizens may have moved before, and they now live in an accommodation that suits their needs. These results are in line with the study of Höpflinger et al. (2019). In addition, respondents with Swiss nationality have a significantly higher intention to move than foreigners. Note that our data do not allow us to observe whether foreigners intend to move back to their home country, a study performed by Höpflinger et al. (2019). One could imagine that foreigners move back to their country of origin directly after retiring. This move could potentially offer them the possibility of a lower cost of living. Furthermore, we observe a significant difference between the elderly in the German-, the French-, and the Italian-speaking parts of Switzerland: the elderly living in the French- or Italian-speaking regions manifest a much lower interest in moving. This result could be related to cultural aspects (Mínguez and Crespi, 2017). It could also be driven by the infrastructure provided to the elderly in the respective areas. Indeed, in Switzerland, the responsibility for providing the appropriate infrastructure and the necessary range of services for the elderly population lies at cantonal level, and each canton develops its own respective strategy. This leads to a heterogeneity of old age policies within the country and also to differences with respect to the existing infrastructures and services for the elderly (Dutoit et al., 2016), which may well also impact upon the intention of senior citizens to move.

Regarding other socio-demographic factors, we find that the income situation does not seem to affect the intention to move. This is surprising because several studies (Gobillon and Wolff, 2011) observe a relationship between revenues and the patterns of mobility. Furthermore, the intention to move significantly increases for the elderly living alone. The latter are not able to rely on a partner to assist them in the event of health issues, which also reduces the chance of having family members available to help. In addition, having only a single retirement income to cover household expenses might also play a

Table 4 Results for regression model (1)

	Full model			Best AIC model		
	Coefficient	Std err.	Sig.	Coefficient	Std err.	Sig.
Intercept	−3.04	0.36	***	−2.91	0.24	***
Socio-demographic factors						
Gender (baseline: Female)						
Male	0.23	0.14		0.21	0.13	
Age (baseline: 60-64)						
65 – 69	−0.30	0.19		−0.31	0.18	·
70 – 74	−0.30	0.19		−0.32	0.19	·
75 – 79	−0.54	0.23	*	−0.56	0.22	*
80 – 84	−0.71	0.27	**	−0.70	0.26	**
85+	−0.83	0.29	**	−0.83	0.28	**
Nationality (baseline: Swiss)						
Foreigner	−0.79	0.35	*	−0.82	0.36	*
Language region (baseline: German)						
French	−0.78	0.18	***	−0.79	0.18	***
Italian	−0.68	0.39	·	−0.72	0.40	·
Net income (baseline: <CHF 51k)						
CHF 51k-77k	0.07	0.20				
CHF 77k-110k	−0.11	0.23				
CHF 110k+	0.18	0.26				
No info.	0.14	0.38				
Living with a partner (baseline: Yes)						
No	0.60	0.30	*	0.38	0.15	*
Having children (baseline: Yes)						
No	−0.30	0.18		−0.30	0.18	·
Ownership (baseline: Yes)						
No	0.90	0.19	***	0.88	0.17	***
Type of housing (baseline: Apartment)						
House	0.38	0.19	*	0.39	0.17	*
Health and life events						
Health status (baseline: Well)						
Not well	0.05	0.16				
Lived an accident or an illness (baseline: No)						
Yes	0.12	0.15				
Related person with illness/accident (baseline: No)						
Yes	0.15	0.14				
Lived a death in a relationship (baseline: No)						
Yes	−0.06	0.15				
Lived an end in a relationship (baseline: No)						
Yes	0.18	0.29				
Lived another life event (baseline: No)						
Yes	−0.35	0.40				

Table 4 (continued)

	Full model			Best AIC model		
	Coefficient	Std err.	Sig.	Coefficient	Std err.	Sig.
Intercept	−3.04	0.36	***	−2.91	0.24	***
Dwelling characteristics						
Housing quality (baseline: Average)						
Bad	0.12	0.55				
Good	−0.09	0.19				
Number of rooms (baseline: 4 − 4.5)						
1 − 2.5	−0.17	0.27				
3 − 3.5	−0.06	0.19				
5 − 5.5	−0.10	0.21				
6+	0.04	0.22				
Number of persons (baseline: 2+)						
1	−0.19	0.31				
Relative housing costs (baseline: Below 18.39%)						
Above 18.39%	0.06	0.19				
No info.	0.09	0.33				
Satisfaction factors						
Satisfaction with accommodation (baseline: 10 fully satisfied)						
0 − 6	1.64	0.25	***	1.67	0.24	***
7	0.95	0.26	***	0.95	0.25	***
8	0.76	0.18	***	0.78	0.18	***
9	0.54	0.20	**	0.58	0.20	**
Satisfaction with size (baseline: Not too large)						
Too large	0.79	0.16	***	0.82	0.15	***
Satisfaction with heat/insulation (baseline: Yes)						
No	−0.06	0.18				
Satisfaction with environment (baseline: Yes)						
No	0.22	0.15		0.24	0.14	·
Satisfaction with price (baseline: Reasonable)						
Price low	−0.09	0.17		−0.10	0.17	
Too high	0.25	0.19		0.26	0.18	
No info.	−0.87	0.51	·	−0.89	0.50	·

The significance levels are · $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Coefficients correspond to the odds ratio of intending to move

role. Conversely, having a partner implies that the decision to move needs to be taken in agreement with each other. In line with the existing literature, see, e.g., Gobillon and Wolff (2011), Andersson and Abramsson (2012), home ownership is a significant factor: being a tenant increases the propensity to move. This is not surprising, given that it is easier to move from a rented accommodation than to sell a dwelling, which may take considerable time and energy. Finally, as mentioned by Edmonston and Lee (2014), the psychological attachment to an owned home could be another reason for this observed

difference. However, senior citizens living in a house show a significantly higher intention to move when compared to those living in an apartment. The work associated with the maintenance of a house might motivate some to move. In sum, we conclude that socio-demographic factors play a significant role in explaining intentions to move, and thus confirm our first hypothesis.

Considering the determinants in the health- and life-events, we find no variable to have a significant impact. Given the descriptive statistics outlined in Sect. 4.3, this appears surprising as we expected senior citizens facing health issues or experiencing a major life-event to have a higher intention to move. We speculate that there could be other effects which decrease the intention to move or that senior citizens in poor health, undergoing a life-course change, are under-represented, which may impact upon the regression results. Thus, our results from the SHP data contradict our second hypothesis (see Sect. 3.3). Nevertheless, several factors related to health- and life-events may merit further studies to confirm their impact.

None of the dwelling characteristics have a significant impact, despite our observation that living in accommodation in bad conditions increases the intention to change home. The number of observations of respondents living in a bad quality accommodation may not be sufficient to identify this factor as significant. We therefore cannot affirm that this variable does not play an important role in the intention to move. Another explanation could be that the majority of senior citizens live in accommodation offering sufficient quality, which would imply that, in Switzerland, this is not a major argument. Moreover, the figures in Table 4 provide some indication that dwellings with six or more rooms might favor a move. Nevertheless, our findings on the dwelling characteristics are not significant and thus we cannot confirm the third hypothesis. Like health- and life-events, other aspects in relation with home components could explain plans for moving.

In the satisfaction factors, two variables are significant. Both not being satisfied with one's accommodation and finding the dwelling too large have a significant positive impact upon the intention to move. Typically, older people have gone through different stages of life, with sometimes a different number of people in their household and, accordingly, varying space needs. After the children leave home or on becoming widowed, for instance, the home becomes too large, which may motivate a move. With respect to the satisfaction with the heat/insulation, the environment and the price, our results do not show any significant results. Accordingly, the last hypothesis regarding the satisfaction factors is partially validated.

For the "best AIC" model, almost all the socio-demographic factors are kept to improve the predictions. The coefficient of the variable identifying senior citizens with children becomes significant at the 10% level. Elderly people with children are more tempted to move than those without offspring, which might have to do with their wish to live closer to their family. In line with the results for the full model, the algorithm selecting the variables for the "best AIC" model does not retain the level of income. Similarly, all variables grouped in the dwelling characteristics and in the health- and life-events are not retained. Furthermore, in the reduced model, we note that satisfaction with the environment becomes significant at the 10% level, which confirms the observations made by Caradec (2010). The mobility of senior citizens depends, among other factors, also on satisfaction with the neighborhood. Unsurprisingly, variables with a high significance level, such as satisfaction with both the accommodation and the size remain in the second model. Comparing the results from both, we note that the significance levels of the significant coefficients

remain the same after the removal of the variables that worsened the AIC. This consistency is evidence of the fact that the included variables are not influenced by the removed ones. Furthermore, we observe similar coefficient values in both models. This stability is the first evidence of the robustness of our results.

In both models, we identify the variables and categories of significance. In the "best AIC" model, the four most significant variables relate to satisfaction with the accommodation, finding the dwelling too large, being a homeowner, and the language region. With significance levels of $p < 0.001$, these variables particularly stand out, and our results for Switzerland are in line with, e.g., those of Roy et al. (2018). Lastly, it should be noted that the results from our logistic regressions are similar to the ones from the descriptive statistics. But the regression outcomes additionally allow us to identify the variables with the most weight, while simultaneously considering all factors, which is important in order to understand this topic.

5.3 Robustness of the results

In the following, we aim to verify whether the determinants identified for the year 2018 hold for previous years. Thus, we report the results from estimating the full model for all years since 2013 in Table 5. We go back until 2013 because variables such as satisfaction with accommodation, heat and insulation are not available in the SHP in earlier years. Regarding the income classes, we keep the quartile values from 2018 as delimiters. By analogy, the 2018 median value of the relative housing costs is used in the other years.w

With respect to the significance of the variables, we observe that gender only sometimes appears significant over the period. Age categories are most significant in 2014, but there are also significant differences in 2015–2018. While nationality is not a variable that systematically influences the intention to move, language region is highly significant throughout the years. Our results also show that financial variables, such as the level of income and the relative housing costs, are not significant over the six years considered. Unlike the variable related to ownership, which is always significant, living with a partner and the type of housing are not always significant. Having children does not drive or determine the intention to move. As discussed for 2018, the variables related to health- and life-events are not relevant. Nevertheless, disparities can be observed for dwelling characteristics, such as the housing quality and the number of rooms, where several categories appear to be of significance. In general, however, the significance is not robust over time. We note that satisfaction with the accommodation and satisfaction with the size are systematically significant, which confirms the results found for 2018. Apart from satisfaction with price, which presents some significance in previous years, the other satisfaction factors do not seem to matter. Overall, the results are homogeneous over the years. With regard to the direction of the effects, most remain the same. We merely observe some signs changes when the coefficient values are close to zero. To sum up, the variables of high significance in 2018 are also shown to be important in previous years. We identify the following five factors as important determinants for the mobility patterns of senior citizens in Switzerland: age, language region, home ownership, satisfaction with the accommodation, and satisfaction with its size.

Table 5 Results for the regression model (1) from 2013 to 2018

	2018		2017		2016		2015		2014		2013	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Intercept	−3.04	***	−3.26	***	−3.19	***	−3.63	***	−3.43	***	-4.79	***
Socio-demographic factors												
Gender (baseline: Female)												
Male	0.23		0.32	*	0.12		0.26	·	0.22	·	0.35	
Age (baseline: 60-64)												
65 – 69	−0.30		−0.12		−0.28		−0.21		−0.41	*	0.07	
70 – 74	−0.30		−0.32		−0.47	*	−0.06		−0.45	*	−0.05	
75 – 79	−0.54	*	−0.51	*	−0.49	*	−0.15		−0.59	**	0.08	
80 – 84	−0.71	**	−0.18		−0.34		−0.30		−0.87	**	−0.67	
85+	−0.83	**	−0.68	*	−0.09		−1.03	**	−1.24	**	−0.56	
Nationality (baseline: Swiss)												
Foreigner	−0.79	*	−0.17		−0.31		−0.17		−0.28		−1.44	*
Language region (baseline: German)												
French	−0.78	***	−0.76	***	−0.65	***	−0.80	***	−0.57	**	−0.33	
Italian	−0.68	·	−1.06	*	−0.37		−1.16	**	−0.66	·	−0.47	
Net income (baseline: *<CHF 51k)*												
CHF 51k-77k	0.07		0.20		0.26		0.39	*	0.09		0.12	
CHF 77k-110k	−0.11		0.10		0.42	·	0.29		0.23		−0.44	
CHF 110k+	0.18		0.31		0.29		0.34		0.54	*	−0.12	
No info.	0.14		0.03		0.48		0.16		0.25		0.14	
Living with a partner (baseline: Yes)												
No	0.60	*	0.61	*	−0.07		0.36		−0.19	*	0.20	
Having children (baseline: Yes)												
No	−0.30		−0.18		−0.27		0.12		−0.12		0.35	
Ownership (baseline: Yes)												
No	0.90	***	0.34	·	0.41	*	0.87	***	0.97	***	1.21	***
Type of housing (baseline: Apartment)												
House	0.38	*	0.29		−0.22		−0.09		0.29		−0.07	
Health and life events												
Health status (baseline: Well)												
Not well	0.05		0.18		0.53		0.12		−0.11		−0.34	
Lived an accident or an illness (baseline: No)												
Yes	0.12		0.17		0.28	·	0.00		0.13		−0.35	
Related person with illness/accident (baseline: No)												
Yes	0.15		−0.07		0.08		0.26	·	0.18		0.21	
Lived a death in a relationship (baseline: No)												
Yes	−0.06		0.18		−0.31	·	−0.04		−0.09		−0.09	
Lived an end in a relationship (baseline: No)												
Yes	0.18		0.26		0.72	*	0.30		0.29		0.49	
Lived another life event (baseline: No)												
Yes	−0.35		0.03		0.22		0.06		0.47		−0.55	

Table 5 (continued)

	2018		2017		2016		2015		2014		2013	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Intercept	−3.04	***	−3.26	***	−3.19	***	−3.63	***	−3.43	***	-4.79	***
Dwelling characteristics												
Housing quality (baseline: Average)												
Bad	0.12		−0.40		−0.10		0.36		−0.29		1.65	**
Good	−0.09		−0.14		−0.60	**	−0.17		−0.39	·	0.13	
Number of rooms (baseline: 4 − 4.5)												
1 − 2.5	−0.17		0.56		0.22		0.08		0.10		0.18	
3 − 3.5	−0.06		0.52	**	−0.20		0.35	·	0.30	·	0.03	
5 − 5.5	−0.10		0.53		0.16		0.69	**	0.05		0.77	*
6+	0.04		0.07		0.08		0.38		0.00		0.52	
Number of persons (baseline: 2+)												
1	−0.19		−0.45		0.20		0.11		0.43		0.57	
Relative housing costs (baseline: Below 18.39%)												
Above 18.39%	0.06		0.03		−0.14		−0.05		0.24		−0.28	
No info.	0.09		0.22		−0.15		−0.07		0.31		0.06	
Satisfaction factors												
Satisfaction with accommodation (baseline: 10 fully satisfied)												
0 − 6	1.64	***	1.99	***	1.70	***	1.44	***	1.04	***	2.35	***
7	0.95	***	1.16	***	1.28	***	0.83	**	0.89	***	2.19	***
8	0.76	***	0.75	***	1.05	***	0.60	**	0.58	**	1.12	**
9	0.54	**	0.54	*	0.62	**	0.02		0.30		0.89	*
Satisfaction with size (baseline: Not too large)												
Too large	0.79	***	1.01	***	0.85	***	1.00	***	1.04	***	0.69	*
Satisfaction with heat/insulation (baseline: Yes)												
No	−0.06		−0.00		0.10		0.25		0.26		0.34	
Satisfaction with environment (baseline: Yes)												
No	0.22		−0.01		0.13		−0.08		0.18		0.31	
Satisfaction with price (baseline: Reasonable)												
Price low	−0.09		−0.34	·	−0.01		−0.05		0.09		0.23	
Too high	0.25		0.75		0.63	**	0.13		0.33	·	0.25	
No info.	−0.87	·	−0.72		−0.36		−0.38		−0.13		−1.41	

The significance levels are · $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

6 Discussion

With the increasing awareness of the issues related to an aging population, several international studies on the movement patterns of senior citizens have preceded our work (see Table 1). We find several similarities when comparing the results from previous investigations to ours for Switzerland. As Edmonston and Lee (2014) also note, men are more inclined to move than women. Given their higher revenue (FSO, 2018), men may indeed deal better with the cost of moving. As highlighted by Gobillon and Wolff (2011), it would

also be interesting to observe the relationship between the intention to move and the loss of income at the time of retirement. We could not analyze this due to the data limitations of the SHP. Furthermore, Gobillon and Wolff (2011) and Angelini and Laferrere (2012) highlight the fact that senior citizens with children tend to move more often because they wish to live closer to their offspring, something which we also observe in our data. Retired people indeed have more free time to spend with their friends and family. Thus, senior citizens with children, who have chosen to live close to their workplace for convenience, might want to move after retirement. In line with other studies, see, e.g., Gobillon and Wolff (2011); Andersson and Abramsson (2012); Edmonston and Lee (2014), our results indicate that home ownership plays a role in the intentions to move as well. We observe that the relatively low home-ownership rate of senior citizens in Switzerland (54% according to FSO, 2018) is reflected in our data with 62.06% of our sample being homeowners. Earlier studies explain the reluctance of homeowners to move by pointing out the transaction costs, which are high in Switzerland, and the simplicity with which an owned accommodation can be adapted to the changing needs at higher ages. Regarding the size of the home, our conclusions are similar to those from other studies, i.e., accommodation which is too large is an incentive to move (Gobillon and Wolff, 2011). In addition to the fact that most of the households in our sample live in apartments with 4–4.5 rooms, we observe a higher intention to move for households living in larger dwellings. We find the same conclusion when households consider their accommodation as too large and when they live in a house, which is typically larger than an apartment. Opting for a more adapted home to reduce the housework may well be a reason for elderly to move. Further, our results related to satisfaction with accommodation are in line with the findings of Jiang et al. (2020), and the overall accommodation environment also plays a role in the Swiss context, as in the study of Bigonnesse and Chaudhury (2020). Nevertheless, we discover that foreigners intend to move less than Swiss citizens, which contrasts with the study of Caradec (2010), who mentions the return of foreigners to their home country at the time of their retirement. Such moves also exist in Switzerland, but it seems that Swiss wishing to move within the country, for instance, are more numerous. In their analysis, Roy et al. (2018) gathered several European studies on the determinants of mobility patterns of the elderly and find the same variables, with the exception of the language region, which is specific to Switzerland, to be relevant for housing decisions. In contrast, other factors, such as the health status, housing costs, trigger events, and building types, were found to be significant in those European studies, but not in our results.

We also compare our results to those of investigations that have been conducted in Switzerland. With the population of older adults soon to reach a quarter of the total citizenry, some regions are developing strategies to allow senior citizens to continue living at home even as they age (see, e.g., Statistique Vaud, 2018). Interest in the mobility patterns of the elderly is relevant as Swiss policy-makers face two contradictory problems. On the one hand, they are conscious that elderly take up a lot of living space, which is lacking for young families on the real estate market. On the other, they want to allow senior citizens to continue living at home, given that the costs are lower, on average, when compared, for instance, to living in a nursing home. Our study identifies significant differences in the probability of intentions to move between the linguistic regions of Switzerland. This can be explained by cultural aspects, but may also be related to the fact that, for instance, some French- and Italian-speaking cantons put a focus on home care and at-home help services which is also reflected in the existing infrastructure. This is also highlighted by, e.g., Dutoit et al. (2016). More specific research is necessary to understand better these differences between language regions and how they are related to the existing care infrastructure and

the underlying motives. Furthermore, although the FSO (2012) indicates that men move less than women because men more often rely on their younger partner, our results do not confirm this finding. Nevertheless, we reach the same conclusion as the FSO with respect to senior citizens living with their partners. About 11% of the elderly living with a partner intend to move versus 17% of those without a partner in the household. This leads us to speculate that couples require less external help in comparison to persons living alone. Moreover, in line with Höpflinger et al. (2019), our regression results demonstrate that the intention to move decreases with age. Moving requires a lot of energy, and older people often do not move deliberately. However, our results diverge with Höpflinger et al. (2019) concerning satisfaction with the size of accommodation. While they note that most senior citizens are satisfied with the size of their home, our findings indicate that 21.38% still find their housing too large, which is a relatively high share. This implies an increase in costs for support and care at home, as well as a disproportional use of space.

In sum, our observations allow us to understand better the drivers that motivate the elderly in Switzerland to move. According to our results, German-speaking homeowners living in large accommodation which does not satisfy their needs are those who are the most likely to contemplate moving. While we do not find evidence for life events, satisfaction variables appear to impact significantly upon plans to move. As predicted, our results support the hypothesis that socio-demographic factors play an important role. Surprisingly, the effects of health issues and dwelling characteristics are not considered as meaningful in our findings. Nevertheless, these phenomena need to be considered with caution since the survey used in our research only investigates limited aspects of health, life events and dwelling characteristics. Unfortunately, many variables in the data-set related to external help and care for the elderly are not exploitable, as the number of observations is too low. Conducting a survey with a larger sample and additional questions related to the above elements would allow us to investigate these issues with the necessary level of detail. Furthermore, our study only investigates the intention to move. However, the analyses of effective moves would provide a better base to determine factors translating into a change of senior citizens' housing. Given that the SHP data do not include enough senior citizens who have changed home, we are not able to explore these. Moreover, our results demonstrate that there are numerous factors which affect the willingness to move. Indeed, the selected variables are not sufficient to make robust predictions: even though we find significant factors, there are still many other elements which influence plans to move that are not recorded in the data. The extant literature proposes several other factors, such as attachment to accommodation or the proximity of services, but such information is not available in the SHP data.

Finally, while cultural aspects need to be considered to explain patterns of mobility, public-policy decisions certainly also impact upon these decisions. Public policies which specifically encourage "aging in place" may be an important lever for living space decisions with significant impact on the real estate market. Consequently, housing offers for senior citizens may also determine their willingness to move. Further, unlike in younger generations, the choice of the place to live for senior citizens is also characterized by a health-related risk of dependency. According to, e.g., Fuino et al. (2021), the Swiss long-term care market is significantly driven by factors that relate to the individuals' knowledge on dependence, care costs, and sources of financing. Although our study does not reveal any significant distinction between levels of income, the planning of housing for the elderly requires adequate financing, for example, in order to adapt the current housing to the specific needs of old age as a prevention to moving. "Aging in place" with adapted

accommodation thus becomes an alternative to deal with old age and aging before being forced to move due to serious health issues.

7 Conclusion

While many arguments have been suggested to explain the intention to move, there remain various factors to be studied empirically in Switzerland. This article uses cross-sectional secondary data from the SHP over the years 2013–2018 to study the determinants of the intentions to move of the elderly. A unique feature of the data-set is that it allows us to investigate how satisfaction with selected housing characteristics as well as life events impact upon the moving intentions. Based upon a robust logit model, we derive explanations for the intention to move in socio-demographic factors, health and life-course events, dwelling characteristics, and satisfaction factors.

With regard to mobility patterns, our results point out the importance of the satisfaction factors, and, in particular satisfaction with the accommodation and with its size. We show that the elderly mostly live in a home with 4 rooms or more, and an important share of them find their dwelling too large. We also find that living in the German-speaking region of Switzerland and being a tenant increase the likelihood of desiring to move. All these findings are relevant for governments when they plan infrastructure including care facilities for the elderly, for property owners, investors, and property managers, who decide on the location and the equipment of the residential offers as well as on the allocation of the apartments to the residents. By identifying significant drivers for the intention to move, this study also contributes to the welfare of senior citizens.

These findings lead us to recommend policy-makers to encourage senior citizens to choose to downsize their accommodation in order to reduce the pressure on the housing supply and increase their satisfaction with the size of their accommodation. To encourage the elderly to move, governments should focus on older owners and adapt their current policies to encourage them to quit dwellings that are too large for their needs. Although we observe that most older people are satisfied with their housing, constructors could still consider the satisfaction factors analyzed in this study to build attractive accommodation for older adults, as they remain important in the choice of moving. The cultural differences observed in the intention to move between the German speaking region and other language regions should also be considered by governments. To explain the disparities between the regions in Switzerland, further research should be conducted to identify in what way local polices encourage senior citizens to opt for new housing. Furthermore, senior citizens take accommodation decisions based upon their specific situation. An in-depth analysis of the needs of specific groups, such as, e.g., older women living alone, should be conducted. Finally, we know that moving consumes energy and implies costs, but providing incentives to motivate senior citizens to change a residence could help them overcome the inconvenience and difficulties of moving.

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