Article

Measuring the Stress of Moving Homes: Evidence from the New Zealand Integrated Data Infrastructure

Ka-Shing Cheung [1,*] and Daniel Wong [2]

1   Department of Property, The University of Auckland, Auckland 1010, New Zealand
2   Tamaki Regeneration Company, Auckland 1072, New Zealand
*   Correspondence: william.cheung@auckland.ac.nz

Abstract: Moving homes has long been considered stressful, but how stressful is it? This study is an original attempt to utilise a micro-level individual dataset in the New Zealand Government's Integrated Data Infrastructure (IDI) to reconstruct the Social Readjustment Rating Scale (SRRS) and thereby measure stress at a whole-of-population level. The effects of residential mobility on people's mental well-being in the context of their stress-of-moving homes are examined. By using difference-in-differences analysis, this study scrutinises the stress level across movers, namely homeowners and renters (i.e., treatment groups) and non-movers (i.e., a control group). The results show that the change in residence increases people's overall stress levels. Homeowners are more stressed than renters, with non-movers as the counterfactuals. Furthermore, the frequency of change in residences increases individual baseline stress levels. By progressing the understanding of such stresses, residential mobility researchers can contribute to broader discussions on how individuals' interpersonal history and social mobility influence their experience. The whole-of-population-based SRRS will better advance our current ways of measuring mental stress at a population level, which is crucial to broader discussions of people's well-being.

Keywords: residential mobility; well-being; housing tenure; ownership; rental; stress scale; life course frameworks; New Zealand's Integrated Data Infrastructure (IDI)

1. Introduction

Moving homes is a fundamental human experience. While residential mobility can be a mechanism that favourably enables individuals to adjust their housing preferences and well-being, leaving a familiar neighbourhood and relocating to another geographical region often has negative impacts. In moving house and home, people must break their routines and re-establish their social networks [1]. Such a transitory process can also cause much stress and anxiety. Boston Medical Centre suggests that moving house more than two times per year indicates housing instability that increases the probability of adverse health outcomes [2]. Research in psychology further suggests that individuals from households that frequently move from place to place, such as military households, have an increased risk of suicide, substance abuse and even early death [3].

However, at the longitudinal census level, the current understanding of the impact of moving homes is limited. Some researchers, such as Rumbold et al. [4], focus more on the effects of house moves on children. The reason is that longitudinal studies, particularly around the perception of the moving experience and the stress endured before and after changes in residence, often involve large-scale surveys and are very costly to conduct [5]. Other medical measurements of stress using cortisol, sex hormones, and blood pressure could be more objective [6] but are still too expensive to be extended into a census scale. Therefore, an instrument measuring stress objectively without costly sampling is always preferred. Morris et al. suggest that studies need to take account of life events to assess potential confounding or be aware of potential biases [7]. The limitation of longitudinal analysis prevents this.

This study aims to achieve the following two main objectives:

(1) Reconstruct a novel measurement of stress in psychology, namely the Social Readjustment Rating Scale, hereafter SRRS for short [8], by leveraging a micro-level individual dataset in the Integrated Data Infrastructure (IDI) of New Zealand [9];

(2) Demonstrate how to apply this whole-of-population-based SRRS methodology to conduct future research, to examine and drill down into the stresses associated with a change in residence for homeowners, renters and non-movers, alongside their frequency of moving homes, without conducting a single survey or longitudinal study.

This natural experiment of studying the stress of moving home at the whole-of-population scale is novel for several reasons. First, this is an original attempt to adopt the SRRS into a census micro-level individual dataset, i.e., the New Zealand Government's Integrated Data Infrastructure (IDI). The reconstructed census-based SRRS is replicable in other countries' population censuses and could be used to study stress-related research. Second, in this study, we further applied this census-based SRRS instrument to explore and test various stress-related hypotheses related to changes in residence. We hypothesised that, *ceteris paribus*, (1) renters will experience less stress than owner-occupiers, regardless of home moving; (2) a (more frequent) change in residence will (further) increase overall stress; and (3) the change in residence will increase the stress level of owner-occupiers more than renters.

The rest of the paper is structured as follows. Section 2 provides a literature review and develops a set of testable hypotheses. Section 3 describes the construction of the census-based SRRS and the sampling method and research design for hypothesis testing in the natural experiment. Section 4 discusses the empirical results. Section 5 further discusses the implications of the results and addresses some limitations of this research for future study. Section 6 concludes and discusses future implications.

2. Literature Review

The process of giving up an established home and social network and relocating to another neighbourhood, city, or country is often accompanied by feelings of loss, alienation, and fear of uncertainty. Moving for adults may be made more pleasant by the anticipation of a more challenging or rewarding occupation or by the intellectual stimulation of relocating to a new environment. However, most moves are not made to improve one's life. Many home moves are driven by significant life events such as deaths and divorces and act as an added burden to one's life. According to Bowlby, separation and the emotions attached to home moves are the most difficult events with which children deal [10]. Disruptions in the separation and individuation process associated with a home move could lead to lifelong personality problems. Moving may also be a problem for the friends of a child who is relocating. Rubin found that friends of moving children suffered increases in loneliness, irritability, and anger following their companion's departure [11].

Many studies of stress in humans attempt to quantify various life events as to their stress levels. On Holmes and Rahe's scale [8], changes in residence and a change in school receive a value of 20 on a scale of 100. The death of a spouse received a full point. Life event scores may be added to yield a total life crisis value. On this scale, a move always adds to a person's stress when it accompanies events such as family disintegration, loss of job, or death. All things being equal, a move without other adversities would appear to have a less negative impact on individuals than moves accompanied by life events such as illness or divorce. All too often, however, a move comes about due to another life crisis.

Public health studies also have evidence that frequent moving may have health implications. In a study of various housing situations, Weir et al. [12] found that individuals who reported having two or more residences in the past six months were more likely to engage in risky unprotected intercourse and exchanging sex for money or drugs. Likewise, German [13] demonstrated that residential transience was associated with HIV drug-related behaviours. Transient individuals also tended to be younger, have lower incomes, and

were less likely to have a main sexual partner than nontransient respondents, suggesting that these individuals may have differing needs [14].

In urban science, "residential mobility" refers to interregional, intra-urban, or internal migration [15]. Residential mobility is often considered as the adjustment of housing needs for employment, family, or access to amenities [16]. Coulter and van Ham [17] defined residential mobility through the life course framework as "a mechanism that enables households to adjust their housing, neighbourhood and locational consumption to meet their changing needs and preferences" (p. 1037). Understanding residential mobility is challenging because many studies draw from aggregate census metrics, assume only a "typical" mover and reveal only broad trends [17]. Whilst such studies provide policymakers with crucial information, they have clear limitations for understanding the complexity of movements and the well-being of diverse individuals, especially their stress levels. In order to overcome such inadequacies in regional studies, the "new mobilities paradigm" calls for incorporating a life-course framework [18]. Experiences of place and home related to residential mobility are particular to the mobile individual and should not be assumed but explored as lived experiences. Subsidised homeownership is, therefore, perceived as a factor limiting residential mobility [19,20].

Life-course studies represent a research paradigm rooted in behavioural psychology and sociology over 60 years ago [21]. Since then, many different disciplines, ranging from sociology to developmental psychology, have examined the longitudinal experiences of people in their "biography, history and of the problems of their intersection within their social structure" [21] (p. 149). There are two predominant approaches in life-course studies: one focuses on analysing how life events experienced at certain ages influence life course, and the other on developmental outcomes resulting from the life-course change. One major challenge in conducting life-course analysis is that the research often requires longitudinal studies, which are survey-based, and it is challenging to obtain identical times of measurement for all ages in the cohort [22]. Moreover, surveys often tend to be subjective responses to recent life experiences, which are always contingent on participants' age and the time in their lives [22]. The accuracy of survey results is also subject to individual stress in the extreme [23] and to physiological desensitisation arising from chronic allostatic stresses [24].

Vulnerability–Stress Models: Moving Residence as a Stressful Life Event

In psychology, there are many definitions of stress. One important concept of stress relates to significant life events that a person perceives as undesirable [25–28]. In this study, stress is viewed as a result of life events that disrupt the stability of individual physiology, emotion, and cognition. Moving home is one such stressor. Selye's classic description of stress emphasises that such events strain the adaptive capability of people and cause an interruption of individual routines or habits [29].

Even though stress is usually conceptualised as the occurrence of "externally" ordained processes, two sets of factors suggest the critical role of "internal" forces in the occurrence of stress. The first set of factors is about the coping style of people. While some stressful events could befall people, many studies have empirically demonstrated that stress often results from individual characteristics. For instance, a person with social skill deficits (e.g., inappropriate critics of others) may engender fractious relationships with family, coworkers, and acquaintances, resulting in significant stress. Therefore, vulnerable individuals may create their own stresses [30]. The second set of factors is about the self-perception of stress [28], i.e., stress is dependent on the individual's appraisal of life events. Even though many life events are perceived as stressful (e.g., the death of a loved one), individual differences may determine the degree of stress experienced. Thus, some individuals who perceive events as stressful may not experience as much stress as others. Indeed, many other factors including perception [31] can affect the determination and degree of stress.

To the best of our knowledge, the empirical evidence of the impact of moving home on tenure type (i.e., owners and renters) and moving frequency is limited. This study attempts

to fill this research gap by examining (1) the stress level of renters versus owner-occupiers, regardless of home moving; (2) the effect of frequency of changing residence on overall stress; and (3), more importantly, whether the change in residence increases the stress level of owner-occupiers more than renters. We first theorised the relationship between moving home and stress level by using Zubin and Spring's vulnerability–stress model [32] and then developed the whole-of-population-based SRRS index to measure the stress level of individuals. Finally, we conducted various statistical tests to demonstrate the stress level differences among home renters versus owner-occupiers.

3. Development of Hypotheses

Zubin and Spring [32], for instance, argued that "we regard [vulnerability] as a relatively permanent, enduring trait" (p. 109). They continue, "The one feature that all schizophrenics have is the ever-presence of their vulnerability" (p. 122). Intuitively put, the idea is that people become mentally ill when the stress they face becomes more than they can cope with. Moreover, the capability of people to deal with stress, hence their vulnerability, varies, so problems that one person may take in their stride may cause another person to be depressed or even psychotic. Figure 1 demonstrates Zubin and Spring's vulnerability–stress model [32] and helps to explain the testable hypotheses formulated in our empirical tests.
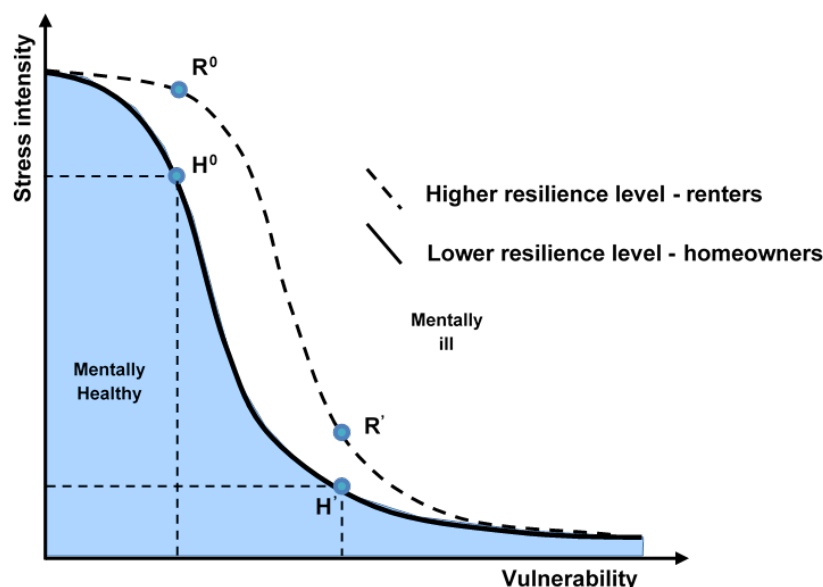
Figure 1. Adpated from Zubin and Spring [32]'s vulnerability–stress model in moving home.

People less vulnerable to stress need to experience a great deal of stress before becoming distressed and mentally ill. In contrast, people who are highly vulnerable to stress require only a small amount of stress to "tip them over the edge" into mental illness. Stress leads first to anxiety, which can tip the person into full-blown psychosis. As the model states, a person with low vulnerability becomes mentally ill only at a very high-stress intensity (i.e., more resilient at point R^0). A vulnerable person would easily become ill despite a very low-stress level (i.e., at point H'). With the same vulnerability level, a person at a higher resilience level can tolerate more stress than a person at a lower resilience level without becoming ill ($R^0 > H^0$ and R' > H' with the same vulnerability level).

In general, renters can have more flexibility regarding their residential locational choices, while homeowners often have a misallocation problem [33]. In addition, renters are not burdened with mortgage repayment (s). Of course, renters could be burdened by landlords. However, the flexibility to move for renters provides them with the room to manoeuvre and adjust their living places whenever necessary. Homeowners are also subject to the "asset-specificity" in their own homes, including the fixtures in their owned

premises. [34]. Less stress related to residential locational choices is expected for renters. Thus, we hypothesised that:

Hypothesis 1 (H1) *Ceteris paribus, renters are, on average, less stressed than owner-occupiers.*

There is a caveat, though: the implication could only be generalisable to those countries with a lower rate of tenant eviction. For example, the rate of initiated tenants in the United States is the highest among the OECD countries [35]. This may add another layer of complexity in analysing the stress of home moving. However, in general, H1 is applicable to the majority of OECD countries. As OECD tenant eviction report [35] suggested that there is no European country with an eviction order rate above 1% (to total tenant households), even though Austria, France and the United Kingdom (England) were fairly close to this level. New Zealand records a physical eviction rate of less than 0.1% of tenant households, where tenant's rights are protected under a comprehensive Residential Tenancy Act. That is why we applied New Zealand as a case to study the stress of moving, which can exclude the anxiety associated with a tenant eviction.

In addition, this study further expands the implications of Zubin and Spring's [32] vulnerability–stress model in the context of moving home. Moving home is regarded by the general public as one of the most significant life events that cause stress on people's vulnerability and are typically conceptualised as a factor that can create a mentally unhealthy state [7]. While the earliest psychopathology models emphasise that vulnerability factors are primarily genetic or biological, the concept starts to include psychological factors [28]. Ingram et al. [30] noted several core features of vulnerability that help establish a working definition of the construct.

Thus, what causes the differences in the vulnerability of people? What makes one person more vulnerable than others? Evidence from family studies, particularly studies involving twins, shows that vulnerability is strongly related to their genetic makeup. "Relatives of people with schizophrenia have a greater risk of developing the illness, the risk being progressively higher among those more genetically similar to the person with schizophrenia." [36]. However, this is not the whole story. How a person deals with stress and their options are often related to their environment. Anything from the state of a person's home to their neighbourhood can make a difference. "If people who have had mental health problems live in a calm and relaxed home atmosphere, their problems are less likely to return." [36]. People with lots of supportive friends tend to perform better in times of crisis than people with fewer or perhaps no other people to turn to. Social support has long been recognised as a routine way of meeting psychological needs and enhancing the quality of life.

One pathway through which moving home may impact people's mental well-being is its disruption in social relationships. Frequent residential relocation may challenge one's ability to maintain social networks. Specifically, individuals who move frequently may experience less social and friend support [37]. Additionally, individuals who move around may have greater difficulty developing social ties with others and easy to induce social isolation. Under stressful circumstances, less support from social networks may further contribute to depressive symptoms and may make it more challenging to deal with associated stressors. Therefore, a change in residence often represents a loss of neighbourhood/social support in coping with stress. Such change can be shown by the inward shift of the resilience curve in Figure 1. Thus, we hypothesised that:

Hypothesis 2 (H2) *Ceteris paribus, a more frequent change in residence will increase the overall stress level of individuals.*

Enz et al. [38] further theorised that a life involving a major transition, such as home moving, should give rise to a higher density of memories because the transitions give individual events a novel backdrop. If home movers are owner-occupiers, their autobiographical memories would be expected to be stronger in a specific location. The association

between home moves and stressors is that moving around may interfere with accessing health and social services and resources. Such access to resources is more substantial for homeowners. Duchon et al. [39] suggest that residential instability is associated with a lack of health care and found that mobility may prevent individuals from accessing care providers. Likewise, moving home likely disrupts consistent and appropriate mental health support and utilisation of related social services, such as public and employment assistance. In addition, owner-occupier movers may also interrupt informal sources of care such as self-help and church groups. "People whose social situation protects them from stress, or the effects of stress, fare much better than those whose social situations are stressful or that do not protect them from the effects of stress." [36]. Thus, we hypothesised that:

Hypothesis 3 (H3) *Ceteris paribus, the change in residence will increase the stress level of owner-occupiers more than renters.*

4. Research Design

The research design was covered in two stages. First, the SRRS within the New Zealand Integrated Data Infrastructure (IDI) was adapted. Second, the empirical test was conducted to investigate those developed hypotheses.

4.1. Social Readjustment Rating Scale (SRRS)

The best-known scale for comparison of stress caused by different life events is the SRRS, a ratio measurement developed in 1963–1967 by psychiatrists Thomas Holmes and Richard Rahe. The SRRS is collected as a self-reported survey to determine how stressed people are in 43 significant life stress events. The life events were selected from an initial survey in 1963 based on a questionnaire of patients at 6 Seattle hospitals determining their demography and their recollection of major life stress events within their last 10 years. The subsequent survey determined the average weighting of each of the life stresses, or Life Change units (LCU), on a scale of hundred being the maximum, thus establishing the rating scale.

In order to use the rating scale, the user sums the LCU from the checklist of major life events to quantify the stress experienced through these events over a quarter, ranging from a hundred points for a spouse's death to eleven points for minor law violations [8]. On the list of stressors within the SRRS, the stress of change in residence (20) or incurring a large mortgage (37) is minor compared with the significant causes of stress such as the death of a spouse (100), divorce (73), and marital separation (65). While the stress indicators do not put moving to a new house near the top of the list, combined stresses often accompany a change in residence, a phenomenon that has not been examined but can be captured by the SRRS. Appendix A contains the original Holmes and Rahe SRRS identified life events and their corresponding stress scores. The table also contains whether each life event was adapted into the IDI and which proxy criteria were used to describe the life event.

The SRRS was devised as a predictor that connects stressful life events with rates of depression and poor health outcomes; it is shown to be applicable in modern times and is still a tool used today [40]. It has been frequently challenged as a well-established instrument and has known methodological, context, and sensitivity limitations, particularly its cost to implement scaling up the survey [41]. While Hough et al. [41] (p. 81) raised much criticism of SRRS, the authors indeed emphasised that "the critique of the development and use of the SRRS has not been presented for the purpose of inhibiting the use of the instrument in further research. The use of such a ratio measurement scale may make the social scientist's explanation of variance in illness much more complete, and even in its present form, the scale has helped to accomplish that task. We would therefore like to promote its improvement and usage." This study aimed to introduce a scaleable method to adopt SRRS to improve social scientists' stress measures. Additionally, it was confirmed to be robust enough to represent most major life stresses and as a good predictor for future health outcomes, even across different ethnic groups [42–44]. Moreover, it was

found that the rank ordering of the life stresses remained consistent for both healthy adults (r = 0.96–0.89) and patients (r = 0.91–0.70). Gerst et al. [45] indicating the SRRS has good reliability and robustness.

The added advantage of the SRRS is that it captures stresses between family members and household members, effectively capturing intergenerational trauma and generating a holistic and quantifiable picture of people's stress and social circumstances. Although SRRS is a valuable tool for quantifying stress at individual levels, its implementation costs are a shortcoming. The SRRS is a survey instrument that is very costly to scale up, especially for population-level studies with a large enough sample required for sufficient statistical power.

By using the microdata of people and households in the IDI, we reconstructed the SRRS in census data, which can involve the whole population in New Zealand at any point in time. Using the census-based SRRS can multiply the statistical power without incurring the exorbitant cost of conducting an extensive longitudinal survey. The microdata allows us to track an individual's residence and corresponding housing tenures, i.e., movers versus non-movers and owner-occupiers versus renters. This study indexed the SRRS of individuals' life events from their first home move (normalised as zero) and tested the pre-and post-stress level of moving homes.

For further time series analysis, the study further reconciled the scores for each quarter and/or conducted a difference-in-differences analysis across moving homeowners and renters (treatment group) and non-movers (control group).

We constructed a difference-in-differences model to examine how the moving home event affects the individual stress level in the IDI Datalab. Specifically, we used two comparison groups (i.e., renters versus owners). We estimated the population difference-in-differences, which measures the treatment effect of interest (i.e., moving home in our case).

$$
\begin{aligned}
E(S_{i,t}|Rent,\ post\ move) - E(S_{i,t}|Rent,\ pre\ move) - \\
E(S_{i,t}|owner,\ post\ move) - E(S_{i,t}|owner,\ pre\ move) = \beta
\end{aligned}
\tag{1}
$$

where S is the stress level, i is an individual renter/owner, and t is the time period. This is the key outcome of the difference-in-differences method. We eliminated the common trend between the groups, and the permanent differences between the groups, leaving a straightforward estimate of the treatment effect, β [46].

4.2. New Zealand Integrated Data Infrastructure (IDI)

As previously mentioned, stress is personal and hard to investigate at an aggregate level. Therefore, the New Zealand Integrated Data Infrastructure (IDI), based on the micro-level individual census data, is a unique dataset for studying stress-related issues at an individual level. The IDI contains person-centred microdata from more than thirty governmental agencies, census surveys and non-government organisations, which is used to support scientifically based policy research. Many significant life changes, such as health, marital status and job changes, are all captured within the IDI, which can be translated into the SRRS. This person-centred microdata allows us to apply the life-course framework to study residential mobility [18]. In adapting SRRS into IDI, we identified 19 adult stressors and 25 non-adult stresses/stressors as proxies for individual stress levels. Even though some measures are not adaptable in the IDI, most of the major life stresses are captured by this census-based SRRS. This study tested several hypotheses using the IDI-based SRRS to measure the averaged stress levels of individuals between the ages of 19 and 54 residing in the Auckland Region between 2013 and 2018. We assessed (H1) the overall stress level of non-mover individuals amongst homeowners and renters, (H2) the frequency of moves that affected the stress levels of individuals and (H3) the comparison between the stress level before and after their home moves.

4.3. Sample Selection and Method of Analysis

The method of sample selection is a crucial piece of the research design. As the IDI contains a vast amount of data from various data sources and in multiple formats (stocks format vs. flow formats), a good understanding of the IDI's data properties and a representative/accurate sampling method is key to conducting robust analysis. Within the IDI, there are variations, for each data source, in availability and accuracy over time; for example, police data are only available from 2014 onwards, while rental housing counts via the rental Bond database are only 60–70% accurate. Hence the data-model construction and sampling method must account for the data source limitations.

In order to properly represent relevant mobility, a whole-of-population data model is required to capture the people who move into and out of an area during any period of time. If the data model does not include whole populations, then gaps appear in the data. The construction of the movement data model involves internal government administrative records, StatsNZ's address notification data model, and DIA travel records. Logically, the sample selection ought to be grounded on the most certain datasets, and the most grounded of datasets is Census data, which captures people at their location of residence and indicates their housing tenure.

However, accuracy is always in question. In an audit performed in relation to Tamaki Regeneration Company over their housing stock, it was found that the social housing tenants were under-reported in both the Census and the housing tenure; only around 55% of the social housing had been accounted for in the Census 2018. The causes were issues due to misreporting and non-responses characteristically prevalent in low-socio-economic households. Regardless, census data are still regarded as the gold standard. Therefore, our methodology used the 2013 and 2018 censuses as the primary indicator for location and housing tenure, with a combination of other data sources, such as housing stock data and Rental Bond data, as secondary/supplementary indicators.

There is also the issue of the homogeneity of the sample. Suppose a segment of sampled residents stayed longer in a particular place compared with another group who stayed for a shorter period. In that case, they are more likely to have fewer stressors before they move for the index event and are more likely to move. Therefore, this segment has a particular bias in the sample. Moreover, economic situations change at different periods and regions, affecting the population's stress. Thus, movements sampled must start from a specific period in time, from a particular region. Additionally, the index movement period bracket must be long enough to capture a good sample, where quarterly movement may not be sufficient; hence a year-long aggregation period was used.

This is the basis for structuring the data for interventional analysis, utilising the first move in 2015 as the index event. Therefore, the selected samples are individuals who initially moved into Greater Auckland in 2013, as confirmed by the 2013 census. The identified individuals are followed longitudinally to the 2018 census to determine whether they have moved or not. The index measurement period of movement is within the year 2015, which means that the residents moved approximately after two years from the initial location to any address within New Zealand. The movement and tenure capture use the StatsNZ address notification data model linked to DIA travel data, the Housing Register, and Housing Bond data.

Other considerations are the age of the sampled individuals: the SRRS has different types of stress for adults and children; therefore, combining their stress scores in the analysis would not be accurate. Additionally, as children under the age of 18 typically do not have the agency to choose where they may move to and hence, react to socioeconomic pressures the same way, their stress scores would not be accurate to compare. The elderly have different life stresses, particularly health-related stresses, and many people beyond 54 have retired and moved into residential care. Therefore, the sample only selects those who are 19 to 54 years old.

Another factor that can be controlled includes locations with a large number of residents registered against a single address. In an audit of these addresses, it has been found

that three main types of domicile exist. The first type is those with 80% of its residents being older than 65; these are identified as aged care facilities. The second type is the majority of its adult residents receiving WINZ benefits, which are identified as homeless shelters, transitional housing, or organisations that use their addresses to help the homeless receive WINZ payments. The third type is rental properties, which have large numbers of adult residents with income, which are private community lodges. The residents of these types of residences are excluded from the analysis.

The interventional analysis is conducted at two levels, the macro level and the micro level. The data extract collects stresses over time at an individual's event level, though it is then aggregated differently for the two levels of analysis. At the macro level, the individual stress scores are aggregated into quarters and averaged for the sample population segment to create a stress profile. This is to allow time series analysis to be completed between different population cohorts. This is different from the original SRRS methodology, which uses aggregated yearly stresses to predict health outcomes, whereas our approach is to determine the change in stresses before and after the individual's change in residence. The quarter in which the home move took place was considered 0 in the Index, while in seven quarters before (−ve) and after (+ve), the move event was then compared, which is the minimum number of aggregated points to show a trend. At the micro level, the individuals' stress scores for each of the population segments for the seven quarters before and after the movement event were then tested for differences in means before and after to determine if there was a significant difference in mean; by using the macro level analysis, we can determine the extent of the difference.

5. Empirical Results

While past studies utilise qualitative approaches to allow participants to articulate personal experiences of place and home, they can miss how residential mobility is enacted. Much quantitative life-course research in residential mobility remains aggregate and is unlikely to focus on individual and personal stressors. This research adopted an established clinical survey tool leveraging existing big-data infrastructure to quantitatively explore an individual's life stresses and examine the resulting behaviours and outcomes of moving one's home. By utilising this approach, several potential sources of stress in each move can be inferred; this enables more visibility of lived experiences through the life course framework perspective, perhaps facilitating actions for building resilience in different socioeconomic groups. Limitations of the method were discussed, and further development was suggested. As an initial baseline test, the analysis of whether the non-mover renters experience less stress than owner-occupiers was presented.

In Figure 2, the average stress levels of non-movers renters, homeowners, and social housing residents aged between 19 and 54 residing in urban Auckland between 2013 and 2018 are presented. The figure indicates that the mean stress level of homeowners is significantly higher than renters (owner occupied (*n* = 11,499), rental (*n* = 2166), 2-sided *t*-test *p*-value = 0.002). The mean stress level is slightly higher for homeowners than for renters who remain in the same property over five years (i.e., non-movers). The figure also shows that stress levels have a cyclical component that decreases over time when individuals do not move. The result supports Hypothesis 1 that, on average, ceteris paribus, renters are less stressed than owner-occupiers. It is worth noting that social housing tenants (as shown by the grey line) have a much higher baseline stress level than both homeowners and renters. The higher stress level among social housing tenants also tallies with a general understanding that the stress level, such as pain, worry, sadness, and anger, is significantly higher among low-income cohorts than among wealthy ones [47]. The pattern suggests that the whole-of-population-based SRRS in this study is sensitive to capturing the socioeconomic differences amongst various demographic groups and could be a potential measure of economic deprivation.
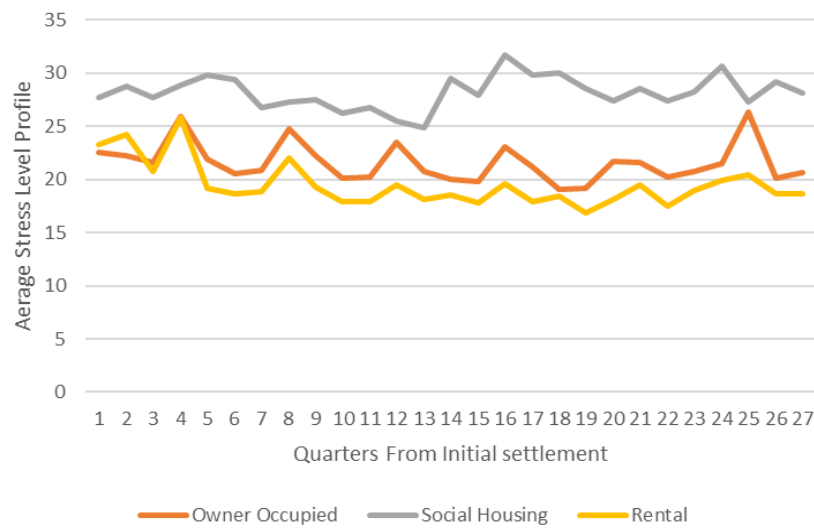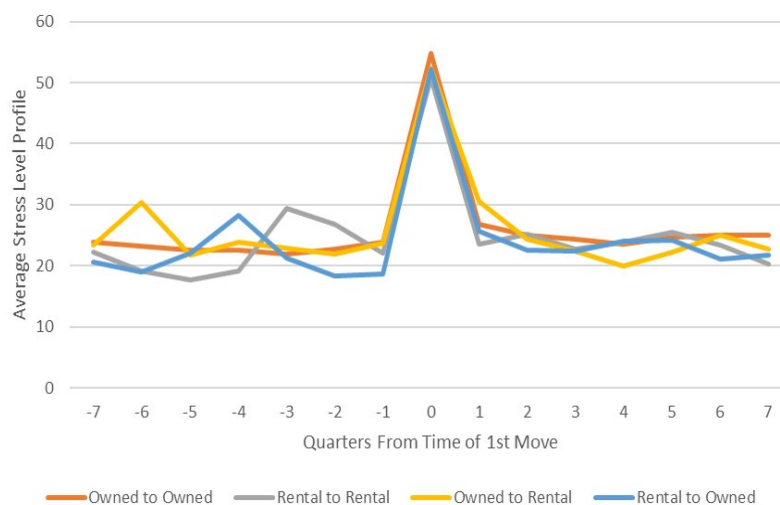
Figure 2. Average stress of non-movers by tenure, in time.

Additionally, it is unsurprising that there is a jump in stress at the time of the move, which is reflected in our whole-of-population-based SRRS. Figure 3 shows the averaged stress levels of mover-individuals (homeowners and renters only) between the ages of 19 and 54 residing in urban Auckland between 2013 and 2018, the first move after two years of stay and by frequency of moves within five years. The jump is higher than the stress score assigned to the change in residence (20 points), which indicates other stressors were present at the time of the move. However, what is pertinent is that the average baseline stress after the move event increases with the number/frequency of moves over the 5-year period (i.e., 3-moves > 2-moves > 1-moves). This supports our hypothesis 2 that *ceteris paribus*, a more frequent change in residence, will increase the overall stress level of individuals. Furthermore, the average stress after a moving event is higher than before.
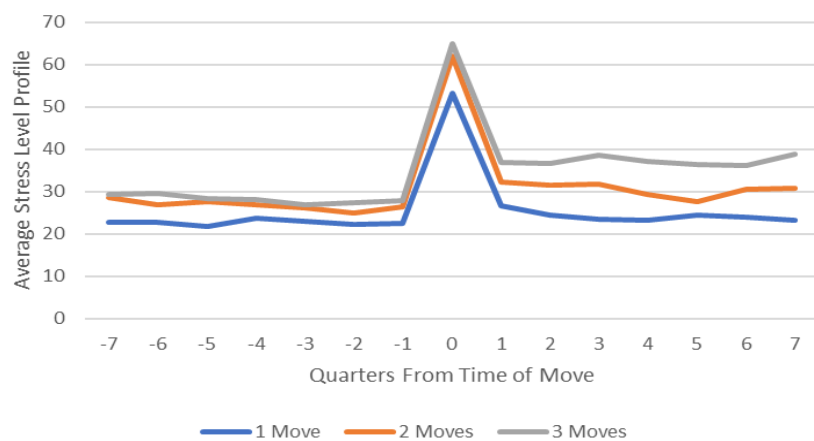
Figure 3. Average stress of both owners and renters, by frequency of moves within 5 years. Notes: (1 Move (*n* = 3609), 2 Move (*n* = 3753), 3 move (*n* = 1773)).

To further test our hypothesis 3, i.e., the change in residence will increase the stress level of owner-occupiers more than renters, we compared groups of renters versus owners before and after their home move. Figure 4 shows the average stress levels of 1-move individuals (Homeowners and renters only) between the ages of 19 and 54 years old residing in urban Auckland between 2013 and 2018, moving once after two years. The purpose was to determine whether there are differences in the stress of an individual moving from various tenures and its time-series stress profile.

Figure 4. Average stress of one-off movers by tenure, 7-quarter before and after a move. Notes: 2-sided *t*-tests are conducted amongst different housing tenures before and after a home move. The mean stress level for an owner-to-owner increases from 22.96 to 24.91 (+1.95; *p*-value = 0.02303; with *n* = 1770). The mean stress level for renter-to-renter only shows an insignificant increase from 22.35 to 23.49 (+1.14; *p*-value = 0.3332; with *n* = 489). For renters who become homeowners after the home move, the stress level exhibited a significant increase in average stress level from 21.18 to 23.12 (+1.94; *p*-value = 0.03292; with *n* = 849). For the owner who becomes a renter after the move, the stress level slightly decreases from 24 to 23.92, but the change is statistically insignificant (−0.08; *p*-value = 0.4566; with *n* = 501).

By using Student's *t*-tests at the individual level sample, we compare their stress level before and after the home move and see if such difference is statistically significant. The result shows that individuals who moved from owned-to-owned properties have their stress level increase from 22.96 to 24.91 (+1.95; *p*-value = 0.02303); which is higher than the insignificant increase for rent-to-rent properties 22.35 to 23.49 (+1.14; *p*-value = 0.3332). This confirms our Hypothesis 3 (H3). Furthermore, one can note that the stress level of new homeowners, who change from rent to own after the home move, also exhibited a significant increase in average stress level from 21.18 to 23.12 (+1.94; *p*-value = 0.03292).

6. Discussion, Limitations, and Future Studies

The empirical results confirmed that moving homes is stressful. Our use of the whole-of-population-based SRRS was able to assemble time-series data and generate observations that are methodologically challenging to be captured using the conventional household, income and well-being surveys, or at least with much lower cost.

In Figure 2, it is observed that there is a cyclical component to the stress being recorded, visible in both the long-term renters' and the owners' segments. This has never been noted in other research articles and warrants further investigation to determine whether this is an instrument's artefact or an actual socioeconomic phenomenon. Furthermore, when long-term renters in Figure 2 are compared with renters who moved only once, in Figure 4, it is shown that the average baseline stress levels of those who moved were both changing and fluctuating before the move event. This would suggest that there are stresses/stressors creating pressure to move, perhaps from the need for home ownership or housing insecurity.

This idea of the stresses/stressors on individuals to move is also reinforced in Figure 3, where it is noted that the baseline stress preceding the movement event. On average, those who moved more frequently were higher than those who moved only once. From the observations above, the data suggest that individuals under high-stress levels, which may be related to housing insecurity, are predisposed to housing movement. While acute stresses seem to result in one-off movements, chronic stresses result in more frequent movement. This also requires further investigation.

Given that this dataset allows being down into the different stresses before and after the move event, other observations can also be made. Table 1 demonstrates the capability of this SRRS instrument in analysing aspects of an individual's circumstances/stresses, which are traditionally not captured in conventional surveys. Another capability of this instrument is the ability to dissect households' socioeconomic segmentation; occupancy of houses, incomes vs. market rent, ages of inhabitants, income, family structure, and also changes in tenure. For example, in Figure 2, stresses experienced by social housing individuals can also be analysed.

Table 1. For 1-move individuals, moving between their owned property to another owned property, the percentage changes in stress types, 7 quarters before to after the move.

Alcohol and Drug Use	433%
Abortion	350%
Retirement	57%
Victim of Violent Crimes	54%
Sexual Dysfunction	37%
Acute Hospitalisation	34%
Depression	26%
Arranged Hospitalisation	22%
Birth of Child	20%
Pregnancy	13%
Spouse Starting/Stopping work	13%
Change in Health of Family Member	6%
>70% Reduction in earned Income	3%
Divorce	2%
Change in Financial State	0%
Congenital Deformities	0%
Physical Deformities/Disability	−8%
Marital Separation	−12%
Change in Residences	−13%
Marriage	−28%
Death of a Close Family Member	−50%

For owner-occupiers moving to another owned property, there seems to be an increase in the stresses, which are not captured in traditional stress analysis, such as drug use, childbirth and abortions. The potential explanation for this pattern is that drug use is a mechanism to alleviate stress [48], and people may need to use it to reduce their stress during home moves. Other stressors such as childbirth could be closely associated with the motivations for home moves [49]. For instance, home movers want to improve the educational outcome for existing or future children, given that homeowners are more engaging parents [50]. The link between home ownership and wanting to have children seems to be associated with stress experienced by owner-occupier movers. The marriage-induced homeownership is also shown as a driver of housing market booms [51].

The original SRRS was useful in identifying suicide victims and attempters [52]. This may be an instrument that can also be used to look at other similar social contagions, including many socioeconomic and housing movement phenomena. Whilst not within the scope of this paper, in Figure 2, it is noted that adult social housing occupants, who are high in the deprivation index, experience notably more elevated stress levels, which is not unexpected. One possible use of this instrument could be as an early warning tool for detecting socioeconomic stress associated with high levels of deprivation. This could be valuable to policymakers and public/private support services, who currently can only use lagging measures that can quantify their effects 10–20 years post-events. This tool could also potentially be used to measure the impact of changes in the socioeconomic environment or policies on a quarterly basis. Housing market is often analysed in a sociopolitical context in which the state government plays an important role [53]. Identifying various stresses/stressors can provide a valuable understanding of what circumstances

the population experiences and how we may collectively assist. These are some future research directions.

Even though the adapted population-based SRRS instrument and methodology in this research seem to be sensitive enough to capture and quantify stresses to be used for mobility research, there are limitations of use and further work which will improve this approach. While the adapted SRRS instrument was able to capture major individual and intergenerational life stresses/stressors, it is unable to capture the full spectrum of the stresses/stressors included in the original SRRS, particularly stresses/stressors coming from social and workplace sources. Since the 1960s, new stresses and psychological conditions have been recognised and should also be included in the SRRS. Since this limitation is acknowledged, many catchalls were built into the dataset, such as depression and violent crime victimisation. These catchall characteristics and stress scores are estimated, untested, and will require further testing and development.

7. Conclusions

By using a life-course perspective, combined with a well-established stress instrument, leveraging off a big-data infrastructure, this paper demonstrates the possibility of arriving at a new method to conceptualise the human life journey. In this study, we advanced our understanding of the stresses of moving homes; the influence of mobility on place experience; and the circumstances, advantages and challenges of moving home over a resident's lifetime. The new method resulted in an instrument that can empirically measure the socioeconomic impact on an individual in any population segment far more quickly than current measures and far more cheaply than conventional surveys, with better sensitivity and ability to identify the influences on the individual.

While research has shown that home moving is detrimental to mental health, our studies further suggest that frequent relocation and the housing tenure types, especially owner-occupier, is a substantial contributors to stress. Therefore, the findings indicate that housing strategies should be implemented to ensure that housing can be sustained over time. This may include assistance programs that make housing more attainable for those encountering mental illness. In addition, economic programs that aid individuals at risk of losing their homes are needed. In addition to providing stable housing, mental health services must be available, easily accessible among urban residents, and designed to remain amenable under transient circumstances.

Engaging with new conceptualisations of home and place can help urban researchers resolve longstanding tensions, ambiguities, and uncertainties about when, where, and why mobility and immobility are desirable practices. The findings also potentially offer practical levers for groups such as policymakers, urban planners, mental health professionals, and the rank-and-file public on how to shape habits and policies and measure their immediate impact on whole populations to minimise stress and maximise human potential. This whole-of-population-based stress measurement approach may become an essential tool in our collective quest to understand and ultimately achieve urban well-being.

Author Contributions: Conceptualisation, K.-S.C. and D.W.; methodology, K.-S.C. and D.W.; software, D.W.; validation, K.-S.C. and D.W.; formal analysis, K.-S.C. and D.W.; investigation, K.-S.C. and D.W.; resources, K.-S.C. and D.W.; data curation, D.W.; writing—original draft preparation, K.-S.C. and D.W.; writing—review and editing, K.-S.C.; visualisation, D.W.; supervision, K.-S.C.; project administration, K.-S.C. All authors have read and agreed to the published version of the manuscript.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Appendix A

Phases of Life	Life Event	Stress Score	IDI Proxy Criteria
All	Depression	-	Not officially in SRRS but an overall catchall for stress. Uses MoH Drugs Prescription for antidepressants
All	Victim of Violent Crimes	-	Not officially in the SRRS, but PTS is now a recognised stress/stressor. Sourced from Police victimisation data.
Adult	Death of a Spouse	100	Spouse as defined by a current DIA Marriage/Civil Union record, against the DIA Death records
Adult	Divorce	73	Divorce as recorded in the DIA Marriage/Civil Union Records
Adult	Marital separation	65	Marriage and civil unions as recorded in the DIA Marriage/Civil Union Records
Adult	Imprisonment	63	Corrections records for any incarceration event
Adult	Death of a close family member	63	Family member (limited by immediate family line) as defined by DIA Birth Records, against DIA Death records
Adult	Personal injury or illness	53	MoH Acute and Arranged Inpatient hospital admissions
Adult	Marriage	50	Marriage and Civil Unions as recorded in the DIA Marriage/Civil Union Records
Adult	Dismissal from work	47	IRD data, 70% drop in Wage and Salary income of the current month is compared with the average of the last 3 months
Adult	Retirement	45	Those individuals who do not have a wage or salary income for more than a year, over 45 year old.
Adult	Change in health of family member	44	Family member (limited by immediate family line) as defined by DIA Birth Records against MoH Inpatient admission
Adult	Pregnancy	40	MoH NNPAC data of first Obstetrics clinic visit OR DIA Birth Records without a prior NNPAC record for 9 months.
Adult	Sexual difficulties	39	Male: MoH Prescription of Viagra, Female: MoH Coded diagnosis of Gynaecological disorders (endometriosis, ovarian cysts, uterine disorders, hysterectomies)
Adult	Gain a new family member	39	Family member (limited by immediate family line) as defined by DIA Birth Records, against DIA birth records
Adult	Change in financial states	38	IRD Data, 70% drop/increase in Total income of the current month in compared with the average of the last 3 months
Adult	Child leaving home	29	
Adult	Spouse starts or stops work	26	Spouses at current DIA marriage/civil union record, against IRD 70% drop/increase in spouses income (vs. past 3 months)
Adult	Begin or end school	26	MoE School records
Adult	Change in residence	20	Address changes as identified within the address notification system
Adult	Minor Viloation of law	11	Police offense data
Non Adult	Death of parent	100	Death of a defined parent as recorded in the DIA Births and Marriages records.
Non Adult	Unplanned pregnancy/abortion	100	Abortion records based on clinical coding within MoH inpatient records, OR visits to an obstetrics clinic within the MoH NNPAC Data, before the age of 18

Phases of Life	Life Event	Stress Score	IDI Proxy Criteria
Non Adult	Getting married	95	Marriage and Civil Unions as recorded in the DIA Marriage/Civil Union Records
Non Adult	Divorce of parents	90	Divorce as recorded in the DIA Marriage/Civil Union Records, against parental records in DIA Births and Marriages
Non Adult	Acquiring a visible deformity	80	Physical Deformity codes defined by Clinical Coding within MoH Inpatient records
Non Adult	Fathering a child	70	Parental records as defined in DIA Birth records
Non Adult	Jail sentence of parent for over a year	70	Corrections records for any incarceration event >1 year.
Non Adult	Marital separation of parents	69	Divorce as recorded in the DIA Marriage/Civil Union Records, for parents as defined in DIA Births and Marriages records
Non Adult	Death of a brother or sister	68	Siblings as defined by connection with Parent in the DIA births, against DIA Death records
Non Adult	Unplanned pregnancy of sister	64	Siblings as defined by connection with Parent in the DIA births and Death records, against, DIA births data.
Non Adult	Marriage of parent to stepparent	63	Parental records in DIA Birth records, against DIA marriage record not as parents
Non Adult	Having a visible congenital deformity	62	Congenital Deformity codes defined by Clinical Coding within MoH Inpatient records
Non Adult	Serious illness requiring hospitalisation	58	MoH Acute and Arranged Inpatient hospital admissions
Non Adult	Hospitalisation of parent	55	Parental records as defined in DIA Births and Marriages, against MoH Inpatient Hospital admission records
Non Adult	Jail sentence of parent for over 30 days	53	Corrections records for any incarceration event >30 days, not including those over 1 year
Non Adult	Suspension from school	50	MoE Truancy and Suspension Data
Non Adult	Becoming involved with drugs/alcohol	50	MoH PrimHD Drug and Alcohol rehabilitation Data
Non Adult	Birth of a brother or sister	50	Siblings as defined by connection with Parent in the DIA births, against DIA Birth records
Non Adult	Loss of job by parent	46	IRD data, 70% drop in Wage and Salary income of the current month in comparison with the average of the last 3 months
Non Adult	Change in parent's financial status	45	IRD Data, 70% drop/increase in Total income of the current month in comparison with the average of the last 3 months.
Non Adult	Being a senior in high school	42	MoE School data
Non Adult	Hospitalisation of a sibling	41	Siblings as defined by connection with Parent in the DIA births, against MoH Inpatient Admission data
Non Adult	Brother or sister leaving home	37	Siblings as defined by connection with Parent in the DIA births, against address notification data
Non Adult	Addition of third adult to family	34	Adult as defined by individuals who are over 18yo and reside at the same location as the individual, of the address notification data
Non Adult	Mother or father beginning work	26	IRD data, 70% increase in Wage and Salary income of the current month in comparison with the average of the last 3 months

References

1. Winstanley, A.; Thorns, D.C.; Perkins, H.C. Moving House, Creating Home: Exploring Residential Mobility. *Hous. Stud.* **2002**, *17*, 813–832. [CrossRef]
2. Boston Medical Center. Housing Instability Negatively Affects the Health of Children and Caregivers: New Research Finds One in Three Low-Income Renters Face Housing Instability at Greater Risk of Poor Health and Other Hardships. ScienceDaily. 22 January 2018. Available online: www.sciencedaily.com/releases/2018/01/180122110815.htm (accessed on 29 November 2021).
3. Webb, R.T.; Pedersen, C.B.; Mok, P.L.H. Adverse Outcomes to Early Middle Age Linked With Childhood Residential Mobility. *Am. J. Prev. Med.* **2016**, *51*, 291–300. [CrossRef] [PubMed]
4. Rumbold, A.R.; Giles, L.C.; Whitrow, M.J.; Steele, E.J.; E Davies, C.; Davies, M.J.; Moore, V.M. The effects of house moves during early childhood on child mental health at age 9 years. *BMC Public Heal.* **2012**, *12*, 583. [CrossRef] [PubMed]
5. Kemper, P.; Blumenthal, D.; Corrigan, J.M.; Cunningham, P.J.; Felt, S.M.; Grossman, J.M.; Kohn, L.T.; Metcalf, E.C.; Peter, R.F.S.; Strouse, R.C.; et al. The design of the community tracking study: A longitudinal study of health system change and its effects on people. *Inquiry* **1996**, *33*, 195–206.

6. Crosswell, A.D.; Lockwood, K.G. Best practices for stress measurement: How to measure psychological stress in health research. *Health Psychol. Open* **2020**, *7*, 2055102920933072. [CrossRef]

7. Morris, T.; Manley, D.; Northstone, K.; Sabel, C.E. How do moving and other major life events impact mental health? A longitudinal analysis of UK children. *Health Place* **2017**, *46*, 257–266. [CrossRef]

8. Holmes, T.H.; Rahe, R.H. The social readjustment rating scale. *J. Psychosom. Res.* **1967**, *11*, 213–218. [CrossRef]

9. Gibb, S.; Bycroft, C.; Matheson-Dunning, N. *Identifying the New Zealand Resident Population in the Integrated Data Infrastructure (IDI)*; Statistics New Zealand: Wellington, New Zealand, 2016.

10. Bowlby, J. Processes of mourning. *Int. J. Psycho Anal.* **1961**, *42*, 317–340.

11. Rubin, Z. *Children's Kiendships*; Harvard University Press: Cambridge, MA, USA, 1980.

12. Weir, B.; Bard, R.S.; O'Brien, K.; Casciato, C.J.; Stark, M.J. Uncovering Patterns of HIV Risk Through Multiple Housing Measures. *AIDS Behav.* **2007**, *11* (Suppl. 2), 31–44. [CrossRef]

13. German, D.; Davey, M.A.; Latkin, C.A. Residential Transience and HIV Risk Behaviors Among Injection Drug Users. *AIDS Behav.* **2007**, *11* (Suppl. 2), 21–30. [CrossRef]

14. Dong, M.; Anda, R.F.; Felitti, V.J.; Williamson, D.F.; Dube, S.R.; Brown, D.W.; Giles, W.H. Childhood residential mobility and multiple health risks during adolescence and adulthood: The hidden role of adverse childhood experiences. *Arch. Pediatr. Adolesc. Med.* **2005**, *159*, 1104–1110. [CrossRef] [PubMed]

15. Rossi, P.H. *Why Families Move: A Study in the Social Psychology of Urban Residential Mobility*; The Free Press: Glencoe, IL, USA, 1955.

16. Holdsworth, C. *Family and Intimate Mobilities*; Springer: Berlin/Heidelberg, Germany, 2013.

17. Coulter, R.; Van Ham, M.; Findlay, A.M. Re-thinking residential mobility. *Prog. Human Geogr.* **2015**, *40*, 352–374. [CrossRef] [PubMed]

18. Bailey, A. Population geography: Lifecourse matters. *Prog. Hum. Geogr.* **2008**, *33*, 407–418. [CrossRef]

19. Cheung, K.S.; Wong, S.K. Entry and exit affordability of shared equity homeownership: An international comparison. *Int. J. Hous. Mark. Anal.* **2019**, *13*, 737–752. [CrossRef]

20. Wong, S.K.; Deng, K.K.; Cheung, K.S. Housing wealth effects for private and subsidized homeowners. *Int. J. Hous. Mark. Anal.* **2018**, *11*, 771–787. [CrossRef]

21. Mills, C.W. *The Sociological Imagination*; Oxford University Press: New York, NY, USA, 1959.

22. Elder, G.H. Age Differentiation and the Life Course. *Annu. Rev. Sociol.* **1975**, *1*, 165–190. Available online: http://www.jstor.org/stable/2946043 (accessed on 20 October 2022). [CrossRef]

23. Smith, R.C. Response Bias in the State-Trait Anxiety Inventory: Detecting the Exaggeration of Stress. *J. Psychol.* **1974**, *86*, 241–246. [CrossRef]

24. Coffman, J.A. Chronic stress, physiological adaptation and developmental programming of the neuroendocrine stress system. *Futur. Neurol.* **2020**, *15*, FNL39. [CrossRef]

25. Lazarus, R.S.; Folkman, S. *Stress, Appraisal, and Coping*; Springer publishing company: Berlin/Heidelberg, Germany, 1984.

26. Luthar, S.S.; Zigler, E. Vulnerability and competence: A review of research on resilience in childhood. *Am. J. Orthopsychiatry* **1991**, *61*, 6–22. [CrossRef]

27. Monroe, S.M.; Peterman, A.M. Life stress and psychopathology. *Life Events Psychol. Funct. Theor. Methodol. Issues* **1988**, 31–63.

28. Monroe, S.M.; Simons, A.D. Diathesis-stress theories in the context of life stress research: Implications for the depressive disorders. *Psychol. Bull.* **1991**, *110*, 406. [CrossRef] [PubMed]

29. Selye, H. *The Stress of Life*; McGraw-Hill Book Company: New York, NY, USA, 1956.

30. Ingram, R.E.; Miranda, J.; Segal, Z.V. *Cognitive Vulnerability to Depression*; Guilford Press: New York, NY, USA, 1998.

31. Li, L.H.; Cheung, K.S.; Tse, W.S. Understanding the shoppers' perception in retail shopping malls: A self-determination theory perspective. *J. Strateg. Mark.* **2021**, 1–16. [CrossRef]

32. Zubin, J.; Spring, B. Vulnerability: A new view of schizophrenia. *J. Abnorm. Psychol.* **1977**, *86*, 103. [CrossRef]

33. Cheung, K.S.; Wong, S.K.; Chau, K.W.; Yiu, C.Y. The Misallocation Problem of Subsidised Housing: A Lesson from Hong Kong. *Sustainability* **2021**, *13*, 1855. [CrossRef]

34. Wong, S.K.; Cheung, K.S. Renewing a Lease at a Discount or Premium? *J. Real Estate Res.* **2017**, *39*, 215–234. [CrossRef]

35. OECD. OECD Affordable Housing Database Section HC 3.3 EVICTIONS. *Technical Report, Social Policy Division.* 2021. Available online: http://www.oecd.org/els/family/HC3-3-Evictions.pdf (accessed on 27 May 2021).

36. Warner, R. How much of the burden of schizophrenia is alleviated by treatment? *Br. J. Psychiatry* **2003**, *183*, 375–376. [CrossRef] [PubMed]

37. Sluzki, C.E. Disruption and reconstruction of networks following migration/relocation. *Fam. Syst. Med.* **1992**, *10*, 359–363. [CrossRef]

38. Enz, K.F.; Pillemer, D.B.; Johnson, K.M. The relocation bump: Memories of middle adulthood are organised around residential moves. *J. Exp. Psychol. Gen.* **2016**, *145*, 935. [CrossRef]

39. Duchon, L.M.; Weitzman, B.C.; Shinn, M. The Relationship of Residential Instability to Medical Care Utilization Among Poor Mothers in New York City. *Med Care* **1999**, *37*, 1282–1293. [CrossRef]

40. Kullmann, P.; Alana, J.; Hayes, S.; Pamphlett, R. Is psychological stress a predisposing factor for amyotrophic lateral sclerosis (ALS)? An online international case-control study of premorbid life events, occupational stress, resilience and anxiety. *PLoS ONE* **2018**, *13*, e0204424.

41. Hough, R.L.; Fairbank, D.T.; García, A.M. Problems in the Ratio Measurement of Life Stress. *J. Health Soc. Behav.* **1976**, *17*, 70–82. [CrossRef] [PubMed]

42. Hobson, C.J.; Kamen, J.; Szostek, J.; Nethercut, C.M.; Tiedmann, J.W.; Wojnarowicz, S. Stressful Life Events: A Revision and Update of the Social Readjustment Rating Scale. *Int. J. Stress Manag.* **1998**, *5*, 1–23. [CrossRef]

43. Alejandra, D.; García, G. The Social Readjustment Rating Scale of Holmes and Rahe in Mexico: A rescaling after 16 years. *Rev. Mex. Psicol.* **2012**, *29*, 16–32.

44. Woon, T.-H.; Wagner, N.N.; Holmes, T.H.; Masuda, M. The Social Readjustment Rating Scale: A Cross-Cultural Study of Malaysians and Americans. *J. Cross Cult. Psychol.* **1971**, *2*, 373–386. [CrossRef]

45. Gerst, M.S.; Grant, I.; Yager, J.; Sweetwood, H. The reliability of the social readjustment rating scale: Moderate and long-term stability. *J. Psychosom. Res.* **1978**, *22*, 519–523. [CrossRef]

46. Yiu, C.Y.; Cheung, K.S. The Age–Period–Cohort Problem in Hedonic House Prices Models. *Econometrics* **2022**, *10*, 4. [CrossRef]

47. Graham, C. The High Costs of Being Poor in America: Stress, Pain, and Worry. In *Brookings Institution Social Mobility Memo*; Immerwahr, J., Tony, F., Eds.; Brookings Institution: Washington, DC, USA, 2000. Available online: http://www.brookings.edu/blogs/socialmobility-memos/posts/2015/02/19-cost-poverty-stress-graham (accessed on 20 October 2022).

48. Sinha, R. Chronic Stress, Drug Use, and Vulnerability to Addiction. *Ann. New York Acad. Sci.* **2008**, *1141*, 105–130. [CrossRef]

49. Tan, T.H.; Khong, K.W. The Link between Homeownership Motivation and Housing Satisfaction. *Int. J. Econ. Manag.* **2012**, *6*, 1–20.

50. Grinstein-Weiss, M.; Shanks, T.R.W.; Manturuk, K.R.; Key, C.C.; Paik, J.-G.; Greeson, J.K. Homeownership and parenting practices: Evidence from the community advantage panel. *Child. Youth Serv. Rev.* **2010**, *32*, 774–782. [CrossRef]

51. Cheung, W.K.S.; Chan, J.T.K.; Monkkonen, P. Marriage-induced homeownership as a driver of housing booms: Evidence from Hong Kong. *Hous. Stud.* **2020**, *35*, 720–742. [CrossRef]

52. Blasco-Fontecilla, H.; Delgado-Gomez, D.; Legido-Gil, T.; de Leon, J.; Perez-Rodriguez, M.M.; Baca-Garcia, E. Can the Holmes-Rahe Social Readjustment Rating Scale (SRRS) Be Used as a Suicide Risk Scale? An Exploratory Study. *Arch. Suicide Res.* **2012**, *16*, 13–28. [CrossRef] [PubMed]

53. Li, L.H.; Cheung, K.S. Housing price and transaction intensity correlation in Hong Kong: Implications for government housing policy. *Neth. J. Hous. Built Environ.* **2016**, *32*, 269–287. [CrossRef]