

# Empowering Ageing-in-place



This report is the fourth instalment of a series of annual reports published by the Centre for Research on Successful Ageing (ROSA). The purpose of this series is to outline the yearly achievements made by ROSA in the research being conducted on the well-being of older adults in Singapore.

We would like to thank The Ngee Ann Kongsi for their generous support and contribution towards ROSA, enabling us to produce this series of reports for dissemination to the public and key stakeholders.



# Contents

<b>Introduction</b>	4
<b>Research Collaborations</b>	5
SkillsFuture Singapore	5
Agency for Integrated Care	6
Geriatric Education and Research Institute	6
<b>Events</b>	7
3 <sup>rd</sup> ROSA Annual Symposium on Successful Ageing	7
2 <sup>nd</sup> Annual SIGMA Research Symposium	8
SMU-DBS Foundation Symposium on Essential Household Needs in Singapore	9
Meet-up Sessions with the Singapore Life Panel <sup>®</sup> (SLP) Members	11
Launch of e-Vouchers	12
<b>Research Developments</b>	13
Research on Ageing-in-place	13
Research at ROSA	19
Health and social impacts of an ageing population in Singapore, and why it matters	19
Social engagement, networks, and well-being by gender and marital status	19
Activity participation and well-being	20
Application of causal discovery methodology in social science	21
<b>Looking Ahead at the Coming Year</b>	23
<b>Acknowledgements</b>	25
<b>About the Centre for Research on Successful Ageing (ROSA)</b>	26
<b>Our Supporters</b>	27

# Introduction

In the past year, three governmental ministries – the Ministry of Health, Ministry of National Development, and Ministry of Transport – have jointly led Age Well SG, a national programme that seeks to support older Singaporeans in ageing well in their homes and their communities. This programme reflects the government's priority in enabling ageing-in-place, a trend that has been increasingly welcomed by older Singaporeans. Current policies that seek to enable ageing-in-place are centred on three forms of enhancements in the environments in which older Singaporeans live, such as the implementation of Active Ageing Centres, strengthening of support for care needs, and improvements to the built environment such as the neighbourhood. Along with these policy developments, the Centre for Research on Successful Ageing (ROSA) has been building on existing research on the role of different aspects of the environments in enabling ageing-in-place, alongside the multitude of themes that are central to successful ageing. In the following sections, the report details the key developments in our research, our collaborations with industry partners, and the events that we have been a part of.

In the first section, we present an overview of our institutional developments. First, we provide details of our collaborations with key industry partners, including newly forged ones. Such partnerships are key in the exploration of emerging research areas that encompass various aspects of the lives of older Singaporeans. Next, we showcase the events that we have participated in the past year, both locally and abroad. These events have served as invaluable opportunities for us to showcase our work while learning from others' and engage in constructive discussions involving a wide

variety of perspectives. Finally, we provide an update of the latest engagements with our Singapore Life Panel<sup>®</sup> (SLP) members.

In the second section, we share the findings and progress from our research projects. Recently, our team has leveraged computer science methods in our research. These methods have enabled us to better understand phenomena that are immediately relevant to the well-being of older Singaporeans, such as the different factors causing life satisfaction and social isolation, and how physical activities and the neighbourhood factors affect well-being. We have also investigated how the extent of social engagement differs across subgroups of older Singaporeans and how variations in activity participation may have differential implications for their well-being. As our team continues to explore and apply new methodologies to the rich data in the SLP, we hope to leverage the full potential of our datasets and generate key insights that will help us to better understand older Singaporeans.

We hope that this fourth instalment of our annual report will provide valuable insights on the ageing landscape in Singapore. Through our research developments and partnerships with key stakeholders, we endeavour to generate evidence-based insights that can be translated into policies and practices that seek to advance the holistic well-being of older Singaporeans. To this end, the members of the SLP – past and present – are an invaluable asset to ROSA and are very much appreciated by our team. We would like to express our gratitude to The Ngee Ann Kongsi and the Ministry of Education for supporting our vision to advance successful ageing in Singapore.



# Research Collaborations

## SkillsFuture Singapore

In October 2023, we engaged SkillsFuture Singapore (SSG) to jointly develop a set of research questions to capture the perceptions that older adults have towards meaningful work, and how they can be encouraged to participate in upskilling / re-skilling. To this end, we sought to explore six research areas: (i) the activities and goals that older adults perceive to be important, (ii) the factors that motivate or discourage older adults from continuing waged work (iii) why and how older adults find their work to be meaningful, (iv) the types of skills that older adults are interested in reskilling themselves with, (v) whether older adults are seeking employment opportunities, and if so, where they do so; and (vi) whether older adults are looking to enrol in

reskilling opportunities, and if so, where they usually turn to for these opportunities.

We signed a research collaboration agreement (RCA) with SSG in May 2024 and created a set of 27 questions, which measured a range of work-related indicators, such as current employment status, work-life balance, work meaningfulness, autonomy at work, relationship with work colleagues, work hours, flexibility of work arrangements, reskilling aspirations and opportunities, and beliefs regarding work, reskilling and volunteerism. We fielded these questions in June 2024, and we hope that the findings will support SSG's efforts in workplace transformations and reskilling opportunities for older adults in Singapore.



## Agency for Integrated Care

The Agency for Integrated Care (AIC) continues to be a valued collaborator. In 2023, we co-studied the issues of social isolation and loneliness among older Singaporeans through a series of focus group discussions involving members of the SLP. We found that most participants believed that maintaining social connections and active engagement in the community is an individual responsibility. However, other participants were also aware of barriers that may hinder social participation (e.g., caregiving duties, limitations in physical infrastructures). Some participants suggested that continued employment may be a way to allow older adults to be socially and mentally engaged, while others pointed to the utility of social media platforms in helping older adults connect with like-minded individuals. At the end of the discussions, we consolidated our findings in a report that was presented to the AIC.

In the next phase of our collaboration, we aim to investigate the various caregiving arrangements of older Singaporeans, including their care preferences and needs, as well as the well-being of caregivers.

## Geriatric Education and Research Institute

In December 2021, we began collaborating with the Geriatric Education and Research Institute (GERI), with the aim of examining the intrinsic capacity among older Singaporeans. Intrinsic capacity is an important indicator for successful ageing, as it looks at an individual's physical and mental capabilities. Declines in intrinsic capacity may foreshadow limitations in self-care and social participation and are therefore important to track longitudinally.

In this collaboration, there are three areas of focus. The first area involves the construction of an intrinsic capacity scale. Building upon the World Health Organisation's (WHO) framework for healthy ageing (i.e., meeting basic needs, learning and decision-making, mobility, relationships, and social contribution), we will

validate a scale that measures the five dimensions of intrinsic capacity, which comprises (i) locomotion, (ii) sensory function, (iii) vitality, (iv) cognitive function, and (v) psychological well-being. The second area examines how intrinsic capacity is associated with everyday functioning in older adults. We will propose and validate the use of the International Classification of Functioning, Disability and Health (ICF) framework, which measures the physical health or disability of a population<sup>1</sup>, to capture relevant areas of functioning – including social participation. Finally, we aim to build upon previous studies that have established that intrinsic capacity influences social participation through disability, by verifying whether the results from such past studies can be replicated in the Singaporean context.



<sup>1</sup> World Health Organization, 'International Classification of Functioning, Disability and Health (ICF)', n.d., <https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health>.



# Events

## 3<sup>rd</sup> ROSA Annual Symposium on Successful Ageing



L-R: Prof Lily Kong, President, SMU; Mr Ong Ye Kung, Minister for Health; Mr Lie Kee Pong, Vice President of The Ngee Ann Kongsi; and Prof Paulin Straughan, Director, ROSA.

On 12 October 2023, we held the 3rd Annual ROSA Symposium on Successful Ageing, which was attended by over 300 participants. The event was graced by our Guest of Honour, Mr Ong Ye Kung, Minister for Health. The symposium revolved around themes such as the importance of the physical environment in supporting ageing-in-place, and how the current working landscape can be transformed to better accommodate older employees.



L-R: Assoc Prof William Tov, Deputy Director, ROSA; Prof Ursula Staudinger, Rector, Technische Universität Dresden; Asst Prof Tan Shin Bin, National University of Singapore; and Dr Wan Chen K Graham, Deputy Director (Research), Agency for Integrated Care.

In the first segment, esteemed researchers in the field of ageing – such as Professor Ursula Staudinger from Technische Universität Dresden and Professor Tughrul Arslan from the University of Edinburgh – gathered in a panel discussion to provide their expertise and experience on how Singapore can support the formation of better physical infrastructures that would be suitable for older adults to age in place comfortably. In the second segment, scholars and practitioners – such as Professor Takashi Oshio from the Hitotsubashi University and Dr Gog Soon Joo from SkillsFuture Singapore – also shared about the benefits that older employees can bring to the workplace and how society can better support these individuals. Finally, the symposium also highlighted the importance of ground-up translational research projects, such as Project Silverlight, and how they can bridge the gap between academia and policy / practice to combat issues pertaining to ageing.



L-R: Prof Takashi Oshio, Hitotsubashi University; Asst Prof Joelle Fong, National University of Singapore; Prof Paulin Straughan, Director, ROSA; Asst Prof Xuan Zhang, SMU; and Dr Gog Soon Joo, Chief Skills Officer, SkillsFuture Singapore.

## 2<sup>nd</sup> Annual SIGMA Research Symposium



Participants of the 2nd Annual SIGMA Research Symposium. In picture: Prof Timothy Clark, Provost, SMU (1st row, 5th from right); Prof Paulin Straughan (1st row, 2nd from right)

The Societal Impact and Global Management Alliance (SIGMA) is a global network of universities that have pledged to develop closer interdisciplinary research collaborations. As SMU is a key collaborating institution within SIGMA, ROSA was invited to share about its academic contributions at the 2nd Annual SIGMA Research Symposium. The conference was held in Beijing, China, from 23 to 24 May 2024, in conjunction with the 20th International Conference on Pensions, Insurance and Savings.

Our team presented on a variety of research topics at the conference. First, Professor Paulin Straughan, Director of ROSA, and Ms Lim Wensi, Centre Manager of ROSA, shared about Project Silverlight, a ground-up social initiative that empowered older adults to design and lead social engagement initiatives. Their presentation

showed that by providing older adults with the agency to organise ground-up events with some assistance from student volunteers, these individuals experienced improved social engagement and well-being and fostered improved intergenerational relationships. They concluded their segment by explaining how the success of Project Silverlight is crucial in bridging the gap between academia and policy / practice.

Second, Dr Tan Yi Wen, Research Fellow at ROSA, shared in a panel discussion session about his paper on the determinants of social isolation among older adults. By utilising causal discovery – a computer science method – Dr Tan and his team was able to identify the factors that most likely influenced the level of social isolation among older Singaporeans. From the results, he found that feeling a sense of meaning in



life leads to the perception of the self as being helpful, which leads to decreased feelings of social isolation. Thus, he recommended that besides enhancing one's sense of meaning in life, interventions can also look for ways to make older adults feel helpful, such as by encouraging them to partake in volunteerism, to lessen social isolation among these individuals.

Meanwhile, Associate Professor William Tov, Deputy Director of ROSA, presented his research on the stability of life satisfaction. The main purpose of Assoc Prof Tov's study was to assess how much of a person's life satisfaction is stable versus changeable. Using an advanced statistical analysis called STARTS (Stable Trait--Auto-regressive Trait--State) modeling, Assoc Prof Tov discovered that life satisfaction is largely stable in the short term, such as within a year, but is more influenced by slower changing factors in the long term, such as within six years. He concluded the presentation by suggesting that the evaluation period of a policy should extend beyond just a single year after it has been enacted, to observe and test the effects of policies on a population's life satisfaction more effectively.

Finally, Assistant Professor Cheng Cheng, a Collaborator with ROSA, showcased her study which examined spousal differences in activity levels and engagement. As prior literature has rarely considered how a spouse's social participation may affect one's own well-being and how the nature of social participation is often gendered, Asst Prof Cheng sought to use a dyadic approach to examine how the relative social participation between spouses affects later-life life satisfaction among heterosexual couples in the United States. Using dyadic data from the Health and Retirement Study (HRS) 2008–2018, Asst Prof Cheng reported that (i) formal and informal social participation has a stronger impact on husbands' life satisfaction than on wives', (ii) wives' formal social participation has a positive spillover effect on their husbands' life satisfaction, and that (iii) spousal disparities in informal social participation negatively affect husbands' life satisfaction. She concluded her presentation by highlighting how these results illustrate

the intricate, gendered linkages between spouses' social participation and subjective well-being.

Importantly, apart from the showcase of our research, participating at the symposium enabled our team to network with key ageing researchers such as Professor Zhao Yaohui from Wuhan University, who leads the China Health and Retirement Longitudinal Study (CHARLS). We also further engaged with various legal experts to explore the topic of retirement using legal and economic frameworks.



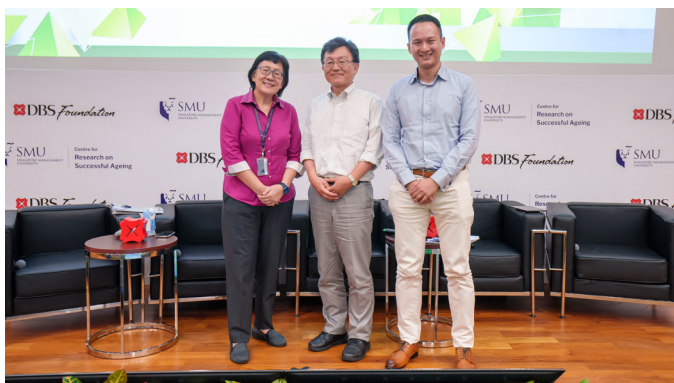
Prof Paulin Straughan participating in a Questions & Answers segment with one of the speakers.

## SMU-DBS Foundation Symposium on Essential Household Needs in Singapore



L-R: Asst Prof Nathan Peng; Dr Tan Ern Ser; Prof Paulin Straughan; Prof Lily Kong; Mr Masagos Zulkifli; Prof Takashi Oshio; Dr Mathew Mathews; Ms Joyz Tan Dunlin; Mr Mohamed Fareez Bin Mohamed Fahmy; and Ms Monica Datta.

The SMU-DBS Foundation Symposium on Essential Household Needs in Singapore took place on 12 July 2024 at The Ngee Ann Kongsi Auditorium at SMU. Our Guest of Honour, Mr Masagos Zulkifli, Minister for Social and Family Development, graced the half-day event and concluded it with a closing speech. The symposium aimed to promote greater public awareness on the topics of essential household needs, relative deprivation, and poverty. Two studies that were supported by the Ministry of Social and Family Development (MSF) were presented in the symposium, titled the Household Needs Study (HNS) and the Public Perceptions of Provision of Essential Needs study, respectively. Conducted by SMU, the HNS investigated a wide range of items that Singaporeans – from varying demographics – deemed a necessity, their ability to afford these items, and their general beliefs and attitudes towards poverty. The other study – the Public Perceptions of Provision of Essential Needs study – conducted by the Institute of Policy Studies (IPS) sought to examine who Singaporeans believe should be responsible for providing for those who are unable to afford basic necessities. In total, over 220 participants – comprising individuals from government agencies, SMU, and corporate and social services sectors – attended the symposium.



L-R: Prof Paulin Straughan; Prof Takashi Oshio; and Asst Prof Nathan Peng.

Prof Paulin Straughan shared key findings from the HNS and explained that although there was consensus among Singaporeans on which items are deemed a necessity, there were certain demographic differences regarding these perceptions. Following this, both

Professor Takashi Oshio from the Institute of Economic Research, Hitotsubashi University, and Professor Aya Abe, Director of the Research Center for Child and Adolescent Poverty at the Tokyo Metropolitan University, presented their studies on relative deprivation and essential needs in Japan. The second segment was opened by Dr Mathew Mathews, Principal Research Fellow and Head of the Social Lab at the IPS, who presented findings from the Public Perceptions of Provision of Essential Needs study. Dr Mathews summarised that while most Singaporeans believed that they should be self-reliant, they also believed that the government should still be responsible for providing essential healthcare needs.

The scholars, as well as practitioners from corporations and social service sectors, such as Ms Joyz Tan Dunlin from Fei Yue Family Service Centre, Mr Mohamed Fareez Bin Mohamed Fahmy from Allkin Singapore, and Ms Monica Datta from the DBS Foundation, were then engaged in two panel discussions moderated by Asst Prof Nathan Peng at SMU and Dr Tan Ern Ser, Adjunct Principal Research Fellow and Academic Adviser at the IPS. These discussions covered themes such as the rapidly changing perceptions of what essential needs are, the societal barriers preventing the lower income from receiving assistance, and how social services and corporations can partner with one another to empower those with lower income.



L-R: Dr Mathew Mathews; Mr Mohamed Fareez Bin Mohamed Fahmy; Ms Joyz Tan Dunlin; Ms Monica Datta; and Dr Tan Ern Ser.



## Meet-up Sessions with the Singapore Life Panel<sup>®</sup> (SLP) Members



A group photo with our SLP members and our team during the meet-up session held in June 2024.

A total of 15 SLP meet-up sessions were conducted from January 2023 to August 2024, with each session consisting about ten SLP members. During these sessions, we discussed a variety of topics that are relevant to ageing in Singapore, such as our participants' opinions on government initiatives, such as the Healthier SG and Healthy 365 schemes, how to age in place successfully, the rising cost of living, volunteerism, and keeping mentally and physically active during one's twilight years.

Through these meet-up sessions, we found that most participants displayed a high sense of self-responsibility in maintaining their physical, mental, and social well-being, with many of them taking the initiative to seek enrichment activities and social engagement within their communities. In terms of government initiatives like the Healthy 365 programme, many participants have been enrolled in them and articulated its effectiveness and helpfulness in managing their health and well-being. However, our participants also noted that not everyone may be able to access these resources. They further explained that government

initiatives like Healthier SG can be better marketed to provide adequate support for the older demographic, as some of them may be reluctant to enrol in certain schemes because they may not be fully aware of the mechanism or enrolment process of these initiatives. Overall, the SLP meet-up sessions have provided our team with invaluable information on the current needs of older Singaporeans, as well as new potential areas of research.



A group photo with our SLP members and Prof Paulin Straughan during the meet-up session held in August 2024.



## Launch of e-Vouchers

In April 2024, we introduced the option for SLP respondents to receive their vouchers digitally via a weblink provided by a text message sent to their mobile phones. The e-vouchers are provided using the RedeemSG voucher system which is also used for nationwide campaigns such as the Community Development Council (CDC) Vouchers Scheme.

As technology continues to advance, embracing digital transformation can offer numerous benefits to ROSA and the respondents. By adopting e-vouchers, we can streamline processes, enhance convenience, and improve overall efficiency. One key benefit that sets the e-vouchers apart from the physical vouchers is that respondents who opt for e-vouchers can enjoy increased flexibility of voucher usage at seven participating merchants.

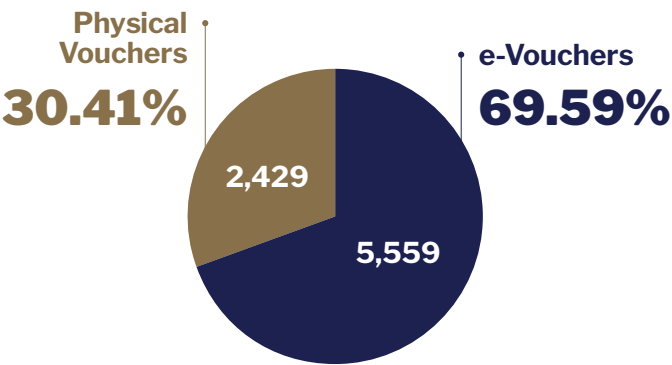
As of May 2024, 5,550 respondents (69.59%) have opted to switch to e-vouchers, while 2,429 respondents (30.41%) had opted to continue receiving physical vouchers. Among the respondents who had not made the switch to e-vouchers, we found that a common reason for not opting for e-vouchers was that they did not have a mobile data plan (35.52%).

We have designed a comprehensive user guide for the respondents to adopt the e-vouchers. The guide includes videos that demonstrate how users can navigate the self-checkout counters at the seven participating supermarkets. In addition, we conducted three outreach sessions in-person and online to address queries or concerns on the usage of the e-vouchers.

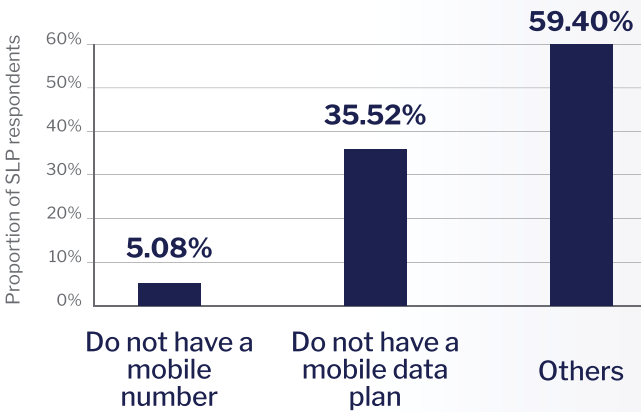
Through the outreach sessions, we received feedback from the respondents on their experience with the RedeemSG e-vouchers. One common issue that we addressed was the difficulty in accessing the e-vouchers for respondents who did not have a mobile data plan subscription. To address this issue, we advised respondents to access the e-vouchers using their Wi-Fi connection at home, screenshot the respective QR codes, and present them at the supermarket – a method which our team had tested. We also guided the respondents on identifying and authenticating the e-vouchers on their devices to guard themselves against scam attempts.

We will continue to extend our support to our SLP members through multiple channels to ensure a smooth transition and to encourage greater uptake of e-vouchers.

Proportion of SLP respondents who opted for e-vouchers



Reasons for not opting for e-vouchers



# Research Developments



## Research on Ageing-in-place

Ageing-in-place is a concept that involves allowing older adults to live independently, safely, and comfortably in their chosen environment. Recent literature has highlighted the role of technology and healthcare assistance in enabling older adults to age in place. In Singapore, current policies have emphasised providing technological assistance and healthcare services to support the needs of older adults. At the individual level, these include home modification programmes and healthcare device subsidies. At the community level, the integration of older adults' homes and caregiving resources into local neighbourhoods, alongside community-based services, help to foster a sense of rootedness and attachment. To further boost older adults' sense of attachment to their communities, policies such as the introduction of Community Care Apartments (CCAs) and the Live Well, Age Well programme play important roles in enabling ageing-in-place. Moving forward, we plan to examine ageing-in-place through the lens of some of these policies.

The following section provides a summary of the literature on ageing-in-place, including its definition, prevalent themes, importance for the holistic well-being of older adults, and Singapore's approach in empowering and supporting older adults to age in place.



## ► Literature review

### Definition of ageing-in-place

Ageing-in-place refers to the ability of older adults to live independently, safely, and comfortably in their chosen environment<sup>2</sup>. It is linked to healthy ageing through the interaction between individuals and the built and social environments in which they live. For instance, the place attachment theory and the human ecological model highlight the intricate connections between individuals and their environments. Both theories emphasise the importance of emotional, psychological, and environmental factors in the context of ageing-in-place<sup>3</sup>. More recent interpretations, however, recognise ageing-in-place as a complex interactional phenomenon requiring continuous adjustments to environmental resources with personal demands. Therefore, older adults are seen as active agents in shaping their environments, making ageing-in-place a proactive decision rather than a passive strategy.



<sup>2</sup>Cristina Bosch-Farré et al., 'Healthy Ageing in Place: Enablers and Barriers from the Perspective of the Elderly. A Qualitative Study', *International Journal of Environmental Research and Public Health* 17, no. 18 (4 September 2020): 6451, <https://doi.org/10.3390/ijerph17186451>.

<sup>3</sup>Setha M. Low and Irwin Altman, 'Place Attachment', in *Place Attachment*, ed. Irwin Altman and Setha M. Low (Boston, MA: Springer US, 1992), 1–12, [https://doi.org/10.1007/978-1-4684-8753-4\\_1](https://doi.org/10.1007/978-1-4684-8753-4_1).



In the following infographic, we highlight themes that have emerged in the discourse on ageing-in-place.

## Themes in Ageing-in-place

### Built environment

The built environment plays a crucial role in ageing-in-place by providing local amenities, accessible public transport, green spaces, and safe, walkable neighbourhoods, which enhance mobility and well-being of older adults [1]. Smart cities and well-maintained public spaces foster active and healthy ageing [2]. Urban spaces that are cohesive and promote place identity can support older adults in adapting to changes and maintaining independence and quality of life. Appropriate infrastructure is needed to support formal and informal care. Additionally, home designing programmes that prevent falls and assist mobility are important enablers for older adults to age in place.

### Social networks

Social networks are a source of support for older adults ageing-in-place [6]. Yet, these networks can be unstable due to factors like death and separation from family. Opportunities for community engagement, including grassroots efforts, are therefore important factors for older adults to age in place. Social connectivity not only fosters community engagement and well-being, but also integration, familiarity, and a sense of security. This instills a sense of cohesion, coherence, and continuity between their lives and their places of residence.



### Place integration

Age-friendly cities promote active ageing and community participation by supporting physical activity and social engagement among older adults [3]. For instance, neighbourhood centres that encourage social interactions have been found to reduce depression [4]. Some scholars have suggested involving older adults in the development of age-friendly housing projects [5]. While the dynamic concepts of home and neighbourhoods change over time due to social and physical factors, it nonetheless highlights the meaningful connections between place and the individual. Older adults' feelings of attachment are not restricted to a particular place, but the meaning behind those places takes precedence.

### Technology

Technology may be leveraged to support older adults to age in place, particularly in the form of independent living. For example, home-based devices provide older adults with entertainment, companionship, reminders, and emergency functions. However, low digital literacy may hinder some from adopting these technologies [7], though those who have successfully used them report benefits like an increase in their sense of security [8]. These highlight the potential of social support from family, friends or volunteers in helping older adults navigate technology use, a potential area for future research.

### Individual characteristics

This theme explores how older adults perceive their community and their ability to live independently. Psychological traits like resilience and self-efficacy play a part in motivating older adults to age in place. It is crucial to acknowledge that older adults are a heterogeneous group and experience ageing-in-place differently. From a policymaking perspective, there are no one-size-fits-all solutions. Moreover, there is a need to conceptualise ageing-in-place as an active choice, rather than a passive strategy. These are important considerations - in theory and practice - in supporting older adults to proactively adapt their environments to suit their individual needs.

[1] Monica Grieko and Anjali Joseph, 'The Role of the Built Environment in Supporting Older Adults' Engagement: A Narrative Literature Review', *HERD: Health Environments Research & Design Journal*, 13 May 2024, 19375867241250320, <https://doi.org/10.1177/19375867241250320>.

[2] Hannah R. Marston and Joost Van Hoof, "Who Doesn't Think about Technology When Designing Urban Environments for Older People?" A Case Study Approach to a Proposed Extension of the WHO's Age-Friendly Cities Model', *International Journal of Environmental Research and Public Health* 16, no. 19 (20 September 2019): 3525, <https://doi.org/10.3390/ijerph16193525>.

[3] Adithi Moogoor, Spela Monik, and Belinda Yuen, 'Neighbourhood Environmental Influences on Older Adults' Physical Activities and Social Participation in Singapore: A Photovoice Study', *Social Science & Medicine* 310 (October 2022): 115288, <https://doi.org/10.1016/j.socscimed.2022.115288>.

[4] Jia Miao, Xiaogang Wu, and Xiulin Sun, 'Neighborhood, Social Cohesion, and the Elderly's Depression in Shanghai', *Social Science & Medicine* 229 (May 2019): 134-43, <https://doi.org/10.1016/j.socscimed.2018.08.022>.

[5] Suzusu K. C. T. Tavy et al., 'The Participation of Older People in the Development of Group Housing in The Netherlands: A Study on the Involvement of Residents from Organisational and End-User Perspectives', *Buildings* 12, no. 3 (17 March 2022): 367, <https://doi.org/10.3390/buildings12030367>.

[6] Willeke H. Vos et al., 'Exploring the Impact of Social Network Change: Experiences of Older Adults Ageing in Place', *Health & Social Care in the Community* 28, no. 1 (January 2020): 116-26, <https://doi.org/10.1111/hsc.12846>.

[7] Shengzhi Wang et al., 'Technology to Support Aging in Place: Older Adults' Perspectives', *Healthcare* 7, no. 2 (10 April 2019): 60, <https://doi.org/10.3390/healthcare7020060>.

[8] J. Van Hoof et al., 'Ageing-in-Place with the Use of Ambient Intelligence Technology: Perspectives of Older Users', *International Journal of Medical Informatics* 80, no. 5 (May 2011): 310-31, <https://doi.org/10.1016/j.ijmedinf.2011.02.010>.

### Ageing-in-place and well-being

**Social well-being.** Given that the concept of ageing-in-place is strongly related to social connectedness, its relationship with social isolation and loneliness becomes apparent. As part of the process of ageing-in-place, older adults' experience of social cohesion and social capital plays a role in providing essential social support networks that help to counter feelings of social isolation. Furthermore, given the strong narrative of technology use in ageing-in-place, the use of communicative tools is valuable in buffering the risk of social isolation<sup>4</sup>. The subjective well-being of older adults is also related to their neighbourhood satisfaction<sup>5</sup>, which ties in with the importance of how the built environment supports overall well-being.

**Economic well-being.** The economic aspects of ageing-in-place also play a critical role in determining the quality of life and independence of older adults. Those from lower socioeconomic backgrounds may experience financial strain of living independently, and this has been found to be associated with poorer mental health and overall well-being<sup>6</sup>. These highlight the intersection of economic well-being and overall health, where innovative solutions like reverse mortgages offer a means for “asset-rich and cash-poor” older adults to access their home equity, thereby enhancing their ability to age in place without compromising their financial stability<sup>7</sup>. These economic strategies are essential for supporting the mental and physical health of older adults as they navigate the complexities of ageing-in-place.

### Ageing-in-place in Singapore

Ageing-in-place has been found to be an increasingly popular option for older adults in Singapore, with 85.9% of them showing a preference to age in place in their own communities in 2018 – a 5.7% increase from the figure in 2013<sup>8</sup>. Ageing-in-place enhances autonomy, fosters independence, and increases community engagement among older adults<sup>9</sup>, which leads to improved physical and social well-being<sup>10</sup>. On a larger scale, promoting ageing-in-place reduces the need for expensive eldercare institutions, allowing governments to allocate resources efficiently in other areas, potentially boosting economic growth<sup>11</sup>. Therefore, it is important for scholars and policymakers to understand how ageing-in-place can be successfully cultivated in Singapore.

The Singapore government has enacted several policies to promote ageing-in-place. For instance, the Housing and Development Board (HDB) offers schemes such as the Enhancement for Active Seniors (EASE) programme, which provides subsidies for older adults to select assistive home modifications (e.g., wheelchair ramps or anti-fall technology)<sup>12</sup>. The establishment of Community Care Apartments (CCAs) is another initiative that integrates older adults' homes and caregiving resources directly into their local neighbourhoods<sup>13</sup>. Additionally, several other policies allow older adults to access a variety of communal healthcare or lifestyle-related resources. For instance, the AIC has curated the Seniors' Mobility and Enabling Fund (SMF) to ensure that older adults with physical disabilities have equal access to assistive healthcare devices at a subsidised rate<sup>14</sup>. To promote active ageing in the community, the People's Association (PA) and Health Promotion Board (HPB) jointly launched the recent Live Well, Age Well programme to provide various free communal activity sessions or mental wellness workshops to older adults<sup>15</sup>.

<sup>4</sup>Maria Gabriella Melchiorre et al., 'Social Networks, Use of Communication Technology, and Loneliness of Frail Older People Ageing in Place in Italy: The Impact of the COVID-19 Pandemic', *Sustainability* 15, no. 20 (19 October 2023): 15073, <https://doi.org/10.3390/su152015073>.

<sup>5</sup>Rachel Wen Yi Ngu, Micah Tan, and William Tov, 'Neighbourhood Satisfaction and Networks Among Older Adults in Singapore', ROSA Research Brief Series, ROSA Research Brief Series (Centre for Research on Successful Ageing (ROSA), August 2023), <https://rosa.smu.edu.sg/sites/rosa.smu.edu.sg/files/Briefs/May%20Jun23/Neighbourhood%20Satisfaction%20%26%20Networks%20Among%20Older%20Adults%20in%20Singapore.pdf>.

<sup>6</sup>Maree Petersen and Tammy Aplin, 'Exploring Older Tenants' Healthy Ageing in Privately Rented Homes', *Australian Social Work* 76, no. 1 (2 January 2023): 100–112, <https://doi.org/10.1080/0312407X.2021.1970783>.

<sup>7</sup>Joelle H. Fong, Olivia S. Mitchell, and Benedict S. K. Koh, 'Asset-Rich and Cash-Poor: Which Older Adults Value Reverse Mortgages?', *Ageing and Society* 43, no. 5 (May 2023): 1104–21, <https://doi.org/10.1017/S0144686X21001045>.

<sup>8</sup>'Enabling Ageing in Place', in *Healthy Ageing in Singapore*, by Sabrina Ching Yuen Luk (Singapore: Springer Nature Singapore, 2023), 147–83, [https://doi.org/10.1007/978-981-99-0872-1\\_6](https://doi.org/10.1007/978-981-99-0872-1_6).

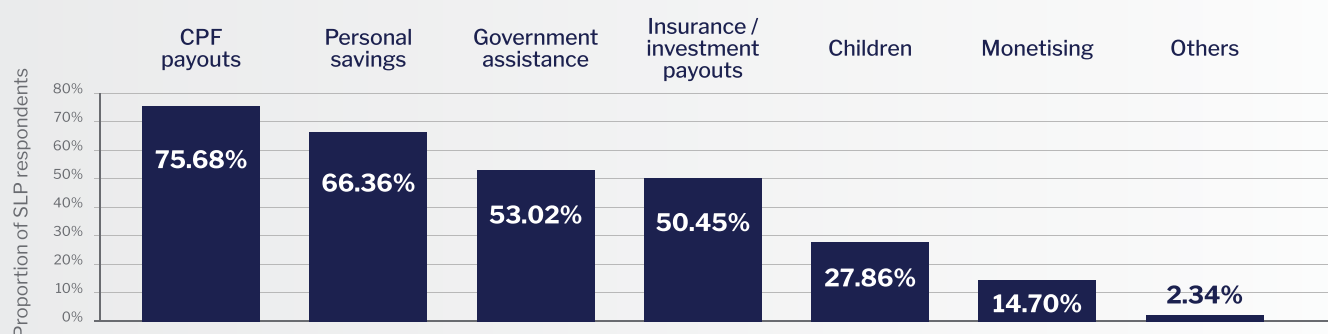
## ► Understanding emerging care trends in Singapore

As more older adults strive to age in place, it is important to understand emerging care trends in the community. To that end, we have collaborated with the AIC to explore care-related issues among older Singaporeans. Leveraging data from the SLP ( $n = 6,747$ ), we examined their perceptions towards caregiving services and private assisted living facilities. We present an overview of our findings in the following sections.

### Caregiving services

We sought to understand how older Singaporeans think that caregiving services for the self should be funded. According to the responses provided by the SLP respondents, we found that most of them perceived that caregiving services for the self should be funded by (i) CPF payouts, (ii) personal savings, and (iii) government assistance.

#### Preferred sources of funding for caregiving services for the self

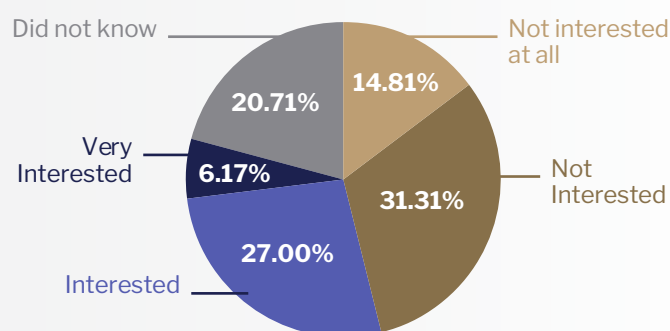


### Private assisted living facilities

We further sought to explore older Singaporeans' interests towards living in private assisted living facilities (e.g., nursing homes) and the characteristics which they perceived to be necessary in these facilities.

First, we found that the SLP respondents expressed varying levels of interest in living in a private assisted living facility. We found that more than one in four respondents expressed that they were interested / very interested in living in a private assisted living facility.

#### Interest towards living in a private assisted living facility



<sup>9</sup>J. L. Wiles et al., 'The Meaning of "Aging in Place" to Older People', *The Gerontologist* 52, no. 3 (1 June 2012): 357–66, <https://doi.org/10.1093/geront/gnr098>.

<sup>10</sup>Maggie Ratnayake et al., 'Aging in Place', *Delaware Journal of Public Health* 8, no. 3 (August 2022): 28–31, <https://doi.org/10.32481/djph.2022.08.007>.

<sup>11</sup>Barbara Horner and Duncan P Boldy, 'The Benefit and Burden of "Ageing-in-Place" in an Aged Care Community', *Australian Health Review* 32, no. 2 (2008): 356, <https://doi.org/10.1071/AH080356>.

<sup>12</sup>Housing Development Board, 'Enhancement for Active Seniors (EASE)', 16 July 2024, <https://www.hdb.gov.sg/residential/living-in-an-hdb-flat/for-our-seniors/ease>.

<sup>13</sup>Housing Development Board, 'Community Care Apartments', 13 June 2024, <https://www.hdb.gov.sg/residential/buying-a-flat/finding-a-flat/types-of-flats/community-care-apartments>.

<sup>14</sup>Agency for Integrated Care, 'Seniors' Mobility and Enabling Fund (SMF)', n.d., <https://www.aic.sg/financial-assistance/seniors-mobility-and-enabling-fund-smf/>.

<sup>15</sup>Joyce Teo, 'Action Plan to Help Older Singaporeans Live Well as They Age and Work Longer', *The Straits Times*, 30 January 2023, <https://www.straitstimes.com/singapore/health/national-plan-to-help-older-singaporeans-live-well-as-they-age-and-work-longer>.



Second, we delved into the reasons that the SLP respondents provided for their interests or disinterests in living in a private assisted living facility. In terms of their interests in doing so, we found that the top three reasons were as follows:



Continue living independently but I require some assistance with my daily activities  
**(65.23% of respondents)**



Feel safer living in a facility where my care needs are taken care of  
**(57.33% of respondents)**



Do not want to worry / trouble my children with my care needs  
**(51.90% of respondents)**

On the other hand, the top three reasons for not being interested in living in a private assisted living facility were as follows:



HDB's Community Care Apartments are good enough for my needs  
**(87.70% of respondents)**



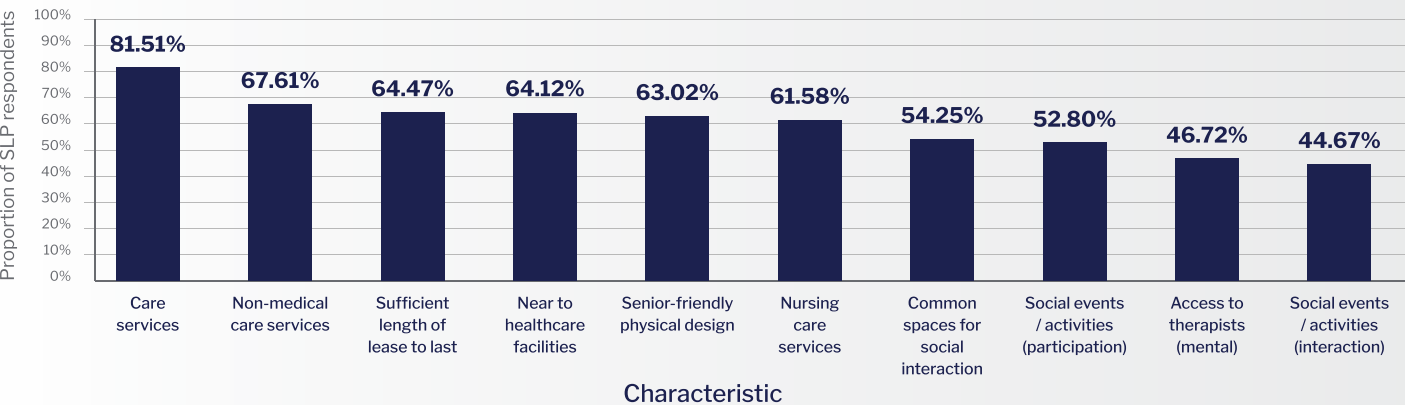
Not comfortable with only being able to lease a unit and prefer owning my own property  
**(81.81% of respondents)**



The facilities are similar to nursing homes, and I do not want to live in such facilities  
**(79.50% of respondents)**

Third, we identified several characteristics that SLP respondents perceived to be necessary in private assisted living facilities. The top three characteristics were (i) the provision of care services, (ii) non-medical care services, and (iii) having sufficient length of lease to last.

Necessary characteristics of private assisted living facilities



Proportion of SLP respondents selecting each characteristic as necessary for private assisted living facilities.

## Research at ROSA

### Health and social impacts of an ageing population in Singapore, and why it matters

- This essay examines the health and social implications of an ageing population in Singapore.
- Using data from the SLP, we explored health and health expenditure profiles of Singaporean older adults. The trends below highlight the need for healthcare system reforms to manage chronic diseases, rising healthcare demand, and economic sustainability.
  - ▶ The proportion of Singaporeans who experienced co-morbidity or multimorbidity increases with age.
  - ▶ Singaporeans who experienced a greater number of chronic conditions spent, on average, more on healthcare. These trends illustrate that more Singaporeans are expected to experience poor health, thereby prompting the need for reforms in the healthcare system to address chronic diseases, increased demand for healthcare, and the economic sustainability of the healthcare system.
- The social implications of an ageing population include an increasing population of older adults who lived alone from 2016 to 2023, and who experience poorer subjective health and lower levels of life satisfaction on average.
- Thus, there is a need to identify social, psychological, economic, and lifestyle factors that will minimise the gap between life expectancy (LE) and health-adjusted life expectancy (HALE), as well as to leverage older adults as assets by empowering them with the agency to contribute to their communities.

*You may scan the following QR code to access the essay:*



### Social engagement, networks, and well-being by gender and marital status

- Against the backdrop of demographic transitions and a rapidly ageing population in Singapore, this paper explores the patterns and trends of social engagement along marital status and gender lines, as well as its associations with social network resources and well-being indicators.
- Overall, single men fared significantly worse on social engagement scores, social network size and strength, social support, overall life satisfaction, physical health satisfaction, mental health satisfaction, economic situation satisfaction, social well-being scores, feelings of social isolation and perceived helpfulness, as compared to married men and women and single women. This highlights the need for community programmes to better engage men, especially single men, in social activities.
- While single women fared significantly worse than married older adults on emotional and instrumental support received, they were more likely to have larger close network sizes, where a greater proportion of single women reported having greater numbers of close relatives and close friends as compared to the other groups. This suggests that single women are more adept at actively engaging with and maintaining their close social networks as opposed to single men.

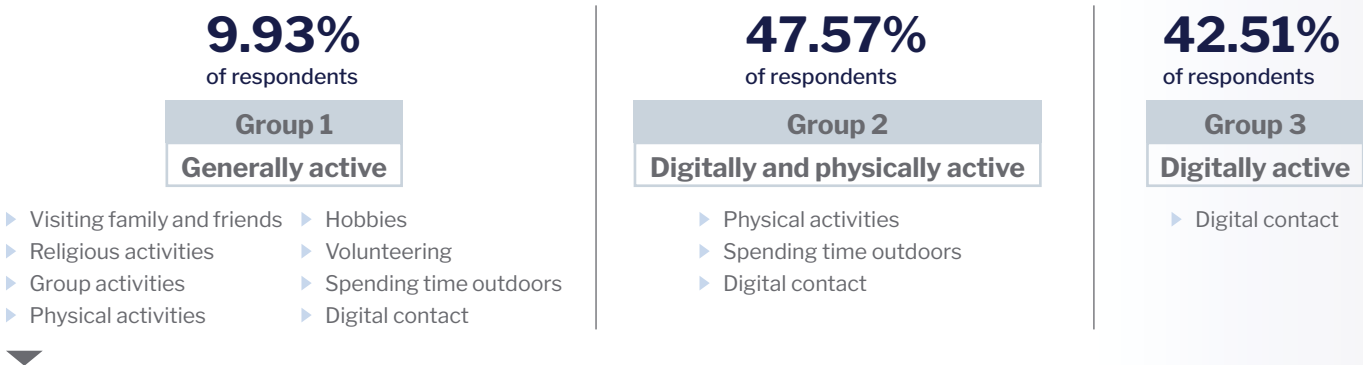
- As Singapore heads towards becoming a super-aged society, there needs to be a shift towards innovative social engagement models that can position older adults as positive assets of society and drivers of community programmes, thereby increasing their sense of helpfulness, which has been suggested to reduce social isolation, and bringing their community engagement to the next level.

You may scan the following QR code to access the research brief:



Activity participation and well-being

- Active engagement in life is an important aspect of successful ageing. In this study, we explored patterns of activity participation among older Singaporeans and how these may be related to their well-being.
- We found three types of activity participation among respondents, namely, those who were (i) generally active; (ii) digitally and physically active, and (iii) digitally active. The table below lists the activities that the respondents in each group were more likely to participate frequently in.



A classification of the activities that each group of respondents were likely to participate more frequently.

- Further, we found that respondents belonging to Groups 1 (generally active) or 2 (physically and digitally active) were significantly more likely to experience greater life satisfaction than those in Group 3 (digitally active). In addition, the likelihood of respondents in Group 1 experiencing greater life satisfaction was greater than those in Group 2, relative to those in Group 3.
- These findings suggest that the breadth of activity participation may be a contributing factor in the well-being of older adults. Specifically, those who participate frequently in a broader range of activities were more likely to experience higher levels of well-being than those who do so in a narrower range of activities.
- This research concurs with the notion of remaining active in the community as one ages, as highlighted in the 2023 Action Plan for Successful Ageing. Indeed, ageing actively would include keeping up with regular physical activities, being socially integrated in one’s social circles and the wider community and staying digitally connected, among many others. As Singapore receives a super-aged population, active engagement will remain key towards successful ageing.

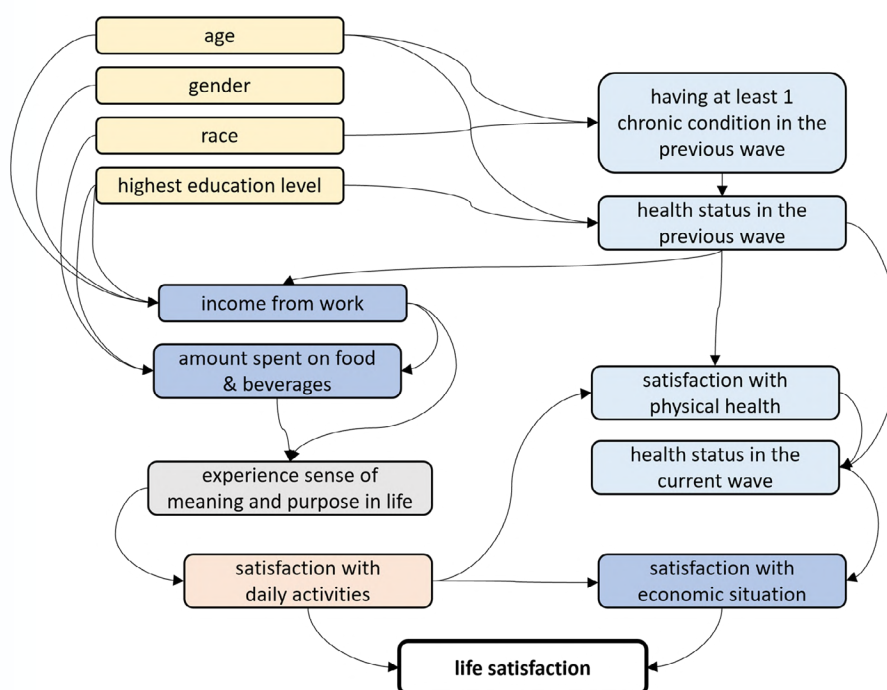


## Application of causal discovery methodology in social science

Computational social science is an interdisciplinary field where computer science methodologies are used to pursue social science research. We have recently begun to explore the use of causal discovery, a computer science method that uses data and input from experts in a specific field to examine the relationship between variables, where causal relationships are inferred using the software TETRAD. This method allows researchers to identify how changes in one variable directly or indirectly affects another. This exploratory method provides some preliminary insights and future potential for utilising computer science methodologies in social science research. In this section, we showcase two studies that utilised causal discovery to derive insights from our expansive datasets.

### Determinants of life satisfaction

- ▶ This study sought to identify potential causal effects of economic and lifestyle factors on life satisfaction.
- ▶ The results revealed the following factors as the strongest contributors to life satisfaction: economic situation satisfaction, satisfaction with daily activities, sense of purpose and meaning, and health conditions.



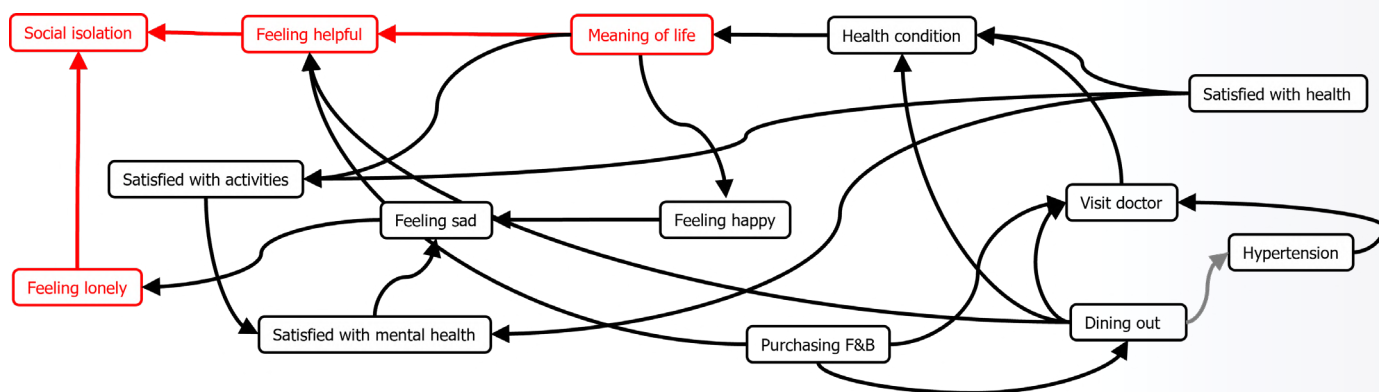
▼ A causal graph that shows the relationships between economic and lifestyle factors and life satisfaction.

You may scan the following QR code to access the research brief:



### Determinants of social isolation

- ▶ This study explored the potential determinants of social isolation, a prevalent phenomenon among older adults in Singapore.
- ▶ The results suggest the following:
  - ▶ A sense of helpfulness is likely to reduce social isolation.
  - ▶ A sense of meaning in life contributes directly to a sense of helpfulness, which, in turn, forms a direct causal link to social isolation.
  - ▶ Perceived isolation and loneliness may be distinct concepts, with loneliness being more likely to precede social isolation.
- ▶ Thus, increasing a sense of helpfulness of older adults, such as promoting volunteerism, may be a potential strategy to diminish social isolation and advance well-being.



A causal graph that shows the relationships between various indicators of well-being and social isolation.

**You may scan the following QR code to access the research brief:**



# Looking Ahead at the Coming Year



We are extremely grateful to the SLP, stakeholders, collaborators and researchers who have worked with us on advancing our collective knowledge of the holistic well-being of older adults in Singapore. In the new year, we have identified several areas of focus and look forward to leveraging our Centre's data and research capabilities for societal and policy impact.



## **SLP Sample Refresh**

The SLP is a valuable and representative sample of the older cohorts in Singapore. We will commence a second panel refresh from August 2024 to January 2025 to recruit 2,000 respondents aged 48 to 53 years (inclusive) to maintain the representativeness of the SLP and provide a voice to the 'Young Seniors' group. We envision that we can uncover key challenges that this cohort faces, such as caring for the young and old, reskilling and retraining to meet new job demands and resources such as social networks and financial literacy skills that can be developed to maintain or boost well-being.

## **International collaborations**

Successful ageing is a key priority for many countries in the world, especially with a number of countries reaching super-aged status (defined as having at least 20% of the total population aged 65 years and above) in the next five to six years. There is much to learn from the experiences of countries who have undergone this demographic transition. We aim to work with collaborators from the Asian countries such as China, Japan and South Korea to understand what research questions are being studied and how comparisons can be made with the longitudinal data that we have been collecting from the SLP.

## **Contribute to the ageing research ecosystem in Singapore**

Since ROSA's inception in 2020, the team has facilitated numerous meetings with organisations and researchers who are keen to better understand the ageing landscape and trends in Singapore and work on implementing possible policies and solutions from an evidence-based perspective. This includes fielding one-off modules to the SLP, preparing research briefs and reports based on emerging trends and raising the awareness of topics that impact older adults' well-being in Singapore. We will continue our efforts in this area and communicate our findings more effectively to key stakeholders such as the Ageing Planning Office and the AIC.

## **ROSA 2.0**

Our research findings support the exploration of successful ageing from a life-course perspective. Thus, we have developed a research proposal that outlines the refined hypotheses that we aim to test whilst introducing an even younger cohort (those aged above 21) to the SLP. Another key component is to build on the conversations that we have started with government agencies and the social sector to co-curate research questions that may be useful for policy work.



# Acknowledgements

We would like to express our gratitude for the able assistance of the following ROSA staff in putting together this report:

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Zidane Tiew

Hiah Wei Tin

Rachel Ngu

Lim Wensi

# About the Centre for Research on Successful Ageing (ROSA)

ROSA is a multidisciplinary research centre based in SMU. It was established with an MOE Tier 3 social sciences research grant, as well as the generous support of The Ngee Ann Kongsi. Research at ROSA seeks to define and measure a holistic construct of well-being and to identify the factors that impact Singaporeans' well-being as they progress through the later phases of life. Through close collaboration with government and other partner agencies, ROSA also aims to translate research insights into policy innovations that advance the well-being of older adults holistically and promote successful ageing in Singapore. ROSA brings together a diverse team of leading international and local researchers in ageing and age-related issues from various disciplines. Through empirical evidence derived from a longitudinal methodological approach, the multidisciplinary and multi-institutional research team advances propositions that promote successful ageing in Singapore. The work at ROSA is supported by The Ngee Ann Kongsi and the Ministry of Education, Singapore, under its Academic Research Fund Tier 3 program award reference number MOE2019-T3-1-006.





# Our Supporters



## The Ngee Ann Kongsi

The Ngee Ann Kongsi is a non-profit Teochew philanthropic organisation focused on educational, cultural and charitable activities in Singapore, while placing a deep emphasis on preserving the Teochew heritage. The organisation is an active advocate in education. It was founded in 1845 by Teochew immigrants from China to provide welfare services for its members, and was formally incorporated under the Ngee Ann Kongsi (Incorporation) Ordinance in 1933.



## Ministry of Education SINGAPORE

## The Ministry of Education, Singapore

The research at ROSA is also supported by the Ministry of Education, Singapore, under its Academic Research Fund Tier 3 programme (Award reference number MOE2019-T3-1-006). Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not reflect the views of the Ministry of Education, Singapore.



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