

The Health and Social Impacts of An Ageing Population in Singapore, and Why It Matters

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Introduction

Singapore's population is ageing rapidly, with the National Population and Talent Division estimating that about one in four Singaporeans will be aged 65 and above by 2030 (National Population and Talent Division 2022). It is anticipated that these demographic changes will have wide-reaching implications for the country that will span all sectors and dimensions of society. In this article, we focus in on two specific dimensions of the impact that an ageing population will have for society; health and social impacts. Using data from the Singapore Life Panel® (SLP) that has been running for the past seven years at the Centre for Research on Successful Ageing (ROSA), we provide evidence demonstrating some changes that are already occurring as a result of an ageing population. Yet, while we highlight two health and social implications of an ageing population, we concurrently demonstrate that such issues can and will influence other aspects of society. We thus emphasise that population ageing is a multidimensional issue, and that it is important for both policymakers and researchers to adopt multidisciplinary perspectives when addressing the problems anticipated to arise from an ageing population.



The evolving healthcare needs of an ageing population

One of the key implications of an ageing population is that the health profiles of the population will evolve, with a greater proportion of the population being likely to suffer from chronic conditions. This is because our vulnerability to chronic conditions increases as we grow older, which means that as the average age of Singaporeans increases, a growing proportion of

Singaporeans will be at an increased risk of suffering from chronic conditions. This trend has been captured by the data collected in the SLP over the past seven years. From the monthly data that we collect from our population representative panel of about 7,000 respondents aged between 57–77 in 2022, we have been able to track the health conditions – particularly with regards to chronic conditions – of multiple cohorts over the past five years. Our data provides empirical evidence that both the likelihood of having at

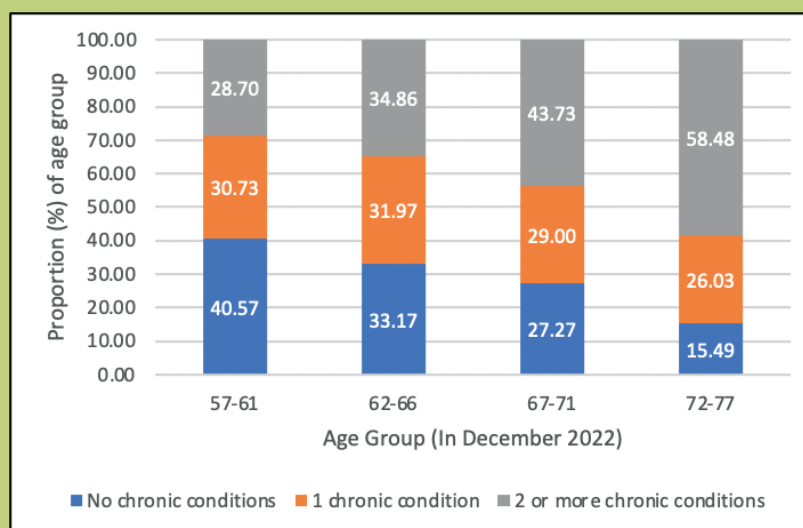


Figure 1: Proportions of respondents with no chronic conditions, one chronic condition, or two or more chronic conditions by age group

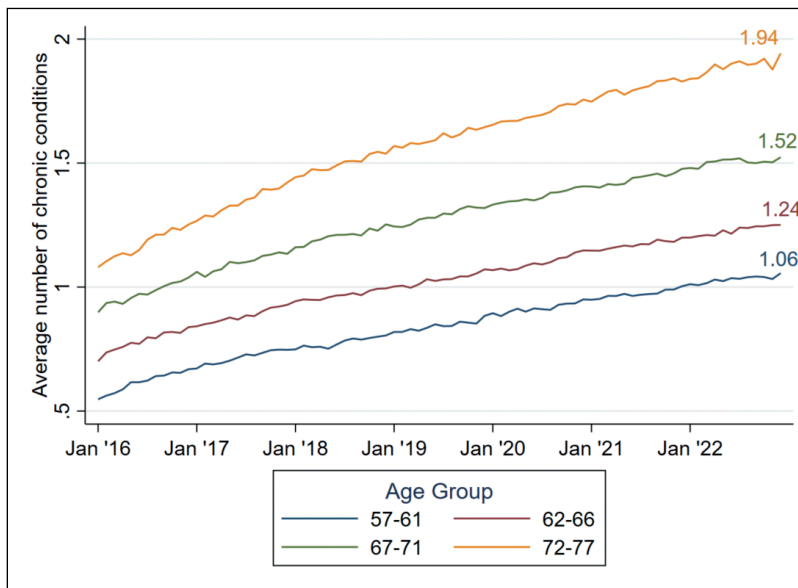


Figure 2: The average number of chronic conditions respondents have by age group, from January 2016 to December 2022 (age groups are defined by respondents' ages in 2022)

least one chronic condition increases over time and with age, as well as that the average number of chronic conditions that individuals suffer from also increases over time and with age. These trends are illustrated in the figures below. Figure 1 presents the proportions of respondents in each age group with no chronic conditions, one chronic condition, or two or more chronic conditions in December 2022. Figure 2 presents the average number of chronic conditions that respondents in each age group had since January 2016.

These figures illustrate the increased vulnerability

of older adults to developing chronic conditions as they age. From Figure 1, we see that the proportion of respondents within the ages of 72–77 that has not had a chronic condition (15.5%) is less than half of that of respondents within the ages of 57–61 (40.6%). Concurrently, we also observe that the proportion of respondents with two or more chronic conditions within the 72–77 age group (58.5%) is almost double the proportion for respondents within the ages of 57–61 (28.7%). On the other hand, Figure 2 demonstrates how the average number of chronic conditions respondents within

each age group has increased over time. Particularly, we see that respondents who were aged 72–77 in 2022 (or 66–71 in 2016) experienced steeper increases in the number of chronic conditions they had over the past six years, compared to respondents in other age groups.

Our data thus highlights the significant trends in ageing that we are already beginning to observe with respect to the health profiles and conditions of our population. These trends have important implications for the general well-being of Singaporeans, as more Singaporeans are expected to be experiencing poorer health. On a societal level, however, this also has important considerations for health policy – healthcare systems in Singapore will need to evolve so as to accommodate an increased need for chronic and long-term care that focuses on addressing chronic disease, as compared to current models that place a focus on addressing acute diseases.

Beyond health and well-being concerns, this is likely to have significant economic implications as well as healthcare costs rise substantially to meet

the increased demand. The affordability of healthcare, as well as the economic sustainability of the healthcare system is thus likely to also become a serious issue should nothing be done to address this trend. This impact has also been captured by our data in the SLP – the chart below plots the average cumulative amount that respondents aged between 72–77 in 2022 spent on healthcare over the past seven years based on their chronic condition status in December 2022, with the dollar

values presented representing the average amount spent since July 2015 for each group as of December 2022.

As can be seen, respondents with multiple chronic conditions in December 2022 spent, on average, more on healthcare over the past seven years as compared to respondents with no chronic conditions, or just one chronic condition. Respondents with two or more chronic conditions had spent an average of \$12,148.16 on healthcare related expenditures since July

2015 in December 2022, while respondents with no chronic conditions or just one chronic condition spent \$7,134.29 and \$6,828.06 respectively. This thus highlights the significant economic impact that the population health implications of an ageing population can have as healthcare costs rise significantly due to the increased demand for long-term and chronic care.

These trends thus illustrate overall how the issue of population ageing spans multiple disciplines, and why the issues that arise from population ageing will require a whole-of-society approach to being addressed. While not presented here in this article, research conducted at ROSA has also illustrated how the public health of an ageing population is also very much a social issue by illustrating how social network resources influence rates of healthcare utilisation among older adults in Singapore. Such findings are important in understanding how best to enable preventive approaches to healthcare such as Healthier SG that are contingent upon positive healthcare behavior. The challenges of an ageing

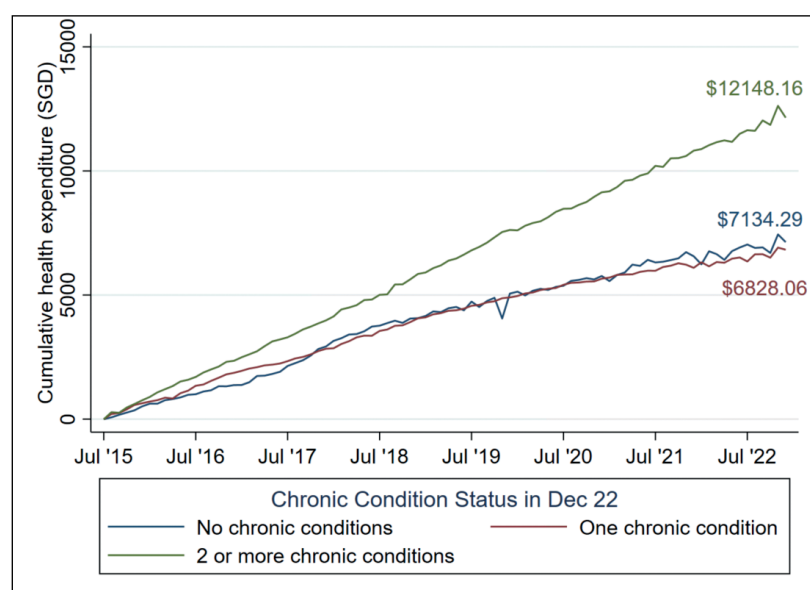


Figure 3: Cumulative healthcare expenditure¹ of respondents since July 2015, limited to respondents aged between 72–77 in 2022 to control for age effects.

¹ Healthcare expenditure includes money spent on prescription medications, other medications, outpatient services, and hospital services.

population thus cannot be viewed in isolation, and will require multi-sector responses.

Social implications of an ageing population

Another key trend of concern arising from an ageing population is the rise in number of older adults who are socially isolated, be it objectively in terms of their living arrangements (i.e, living alone), or subjectively in terms of their feelings of loneliness. This issue has been raised as a key concern by scholars of ageing world-wide who have also noted the negative impact that social isolation can have on health outcomes among older adults (Cornwell and Waite 2009; Hawton et al. 2011) including living alone, having a small social network, infrequent participation in social activities, and feelings of loneliness. However, multiple forms of isolation are rarely studied together making it difficult to determine which aspects of isolation are most deleterious for health. Using population-based data from the National Social Life, Health, and Aging Project, we combine multiple indicators of social

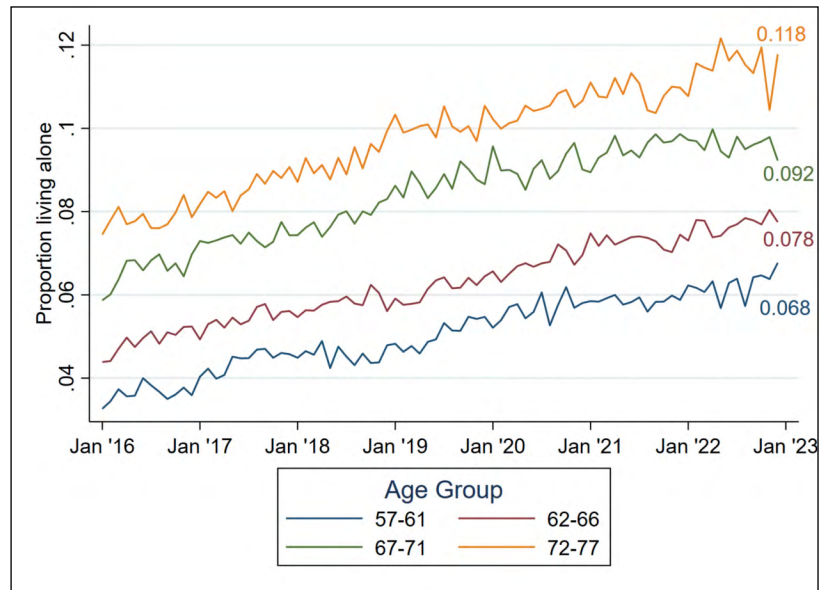


Figure 4: Average proportions of respondents within each age group that live alone since January 2016. Values displayed on the right hand of the chart reflect proportions in December 2022.

isolation into scales assessing social disconnectedness (e.g., small social network, infrequent participation in social activities. It has been illustrated, for instance, that both forms of social isolation are independently associated with poorer self-rated physical and mental health. One possible mechanism that has been identified that explains this effect of social isolation on health outcomes is the fact that socially disconnected individuals may have lower access to resources such as health information and other resources such as

transportation that enable pro-health behaviors (Lin 2001). Thus, social isolation among older adults is an issue of significant concern given the implication that it can have on their well-being outcomes.

A key issue with social isolation within the context of population ageing is the fact that as individuals age, they are more likely to become socially isolated. As such, as more of the population becomes older, we are likely to see a greater proportion of Singaporeans who are socially isolated. This is due to a range of factors, including the likelihood

of experiencing a loss of social contacts in the form of colleagues as older adults transition into retirement, as well as the fact that many older adults experience shrinking social networks as more of their acquaintances and friends pass on with age (Wrzus et al. 2013). This is a trend that has been captured by our SLP data over the last seven years as the following chart demonstrates.

As can be seen, the proportion of respondents living alone increases with age, with those aged 73–78 having the greatest proportion of respondents living alone (0.118 or 11.8% in December 2022), compared to respondents within the ages of 58–62 (0.068 or 6.8% in December 2022). Furthermore, we observe that for every age group, the proportion of respondents living alone has increased over the past six years. This succinctly captures the trend where a growing proportion of the population becomes more socially isolated as they age.

Our data has also captured the impact that being socially isolated can have on the well-being of our respondents. The charts below illustrate the differences in the overall

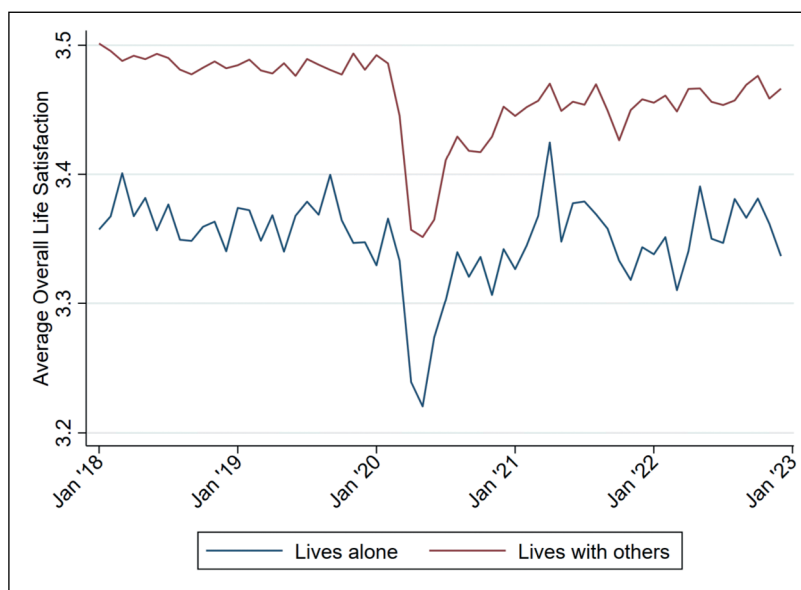


Figure 5: Average Overall Life Satisfaction² of respondents since January 2018 by living arrangement (lives alone or lives with others)

life satisfaction and subjective health status between respondents who live alone and respondents who live with others over the past five years.

From these charts we can observe that respondents who live with others historically report higher levels of overall life satisfaction (a key indicator of subjective well-being), and subjective health status (a key indicator of physical health status) as compared to respondents who live alone. As such, we can observe how

social isolation can have an impact on not just the social, but the mental and physical well-being of older adults. This illustrates once again the multi-dimensional nature of the issue of an ageing population as it shows that an anticipated social implication of an ageing population will likely have health impacts as well. It also highlights that the rising proportion of Singaporeans who are likely to be socially isolated as the population ages will be an important point of

² Overall Life Satisfaction is measured using a single item asking respondents to rate, on a five-point scale ranging from "Very Satisfied" to "Very Dissatisfied", how satisfied they are with their life as a whole. A higher score reflects better well-being.

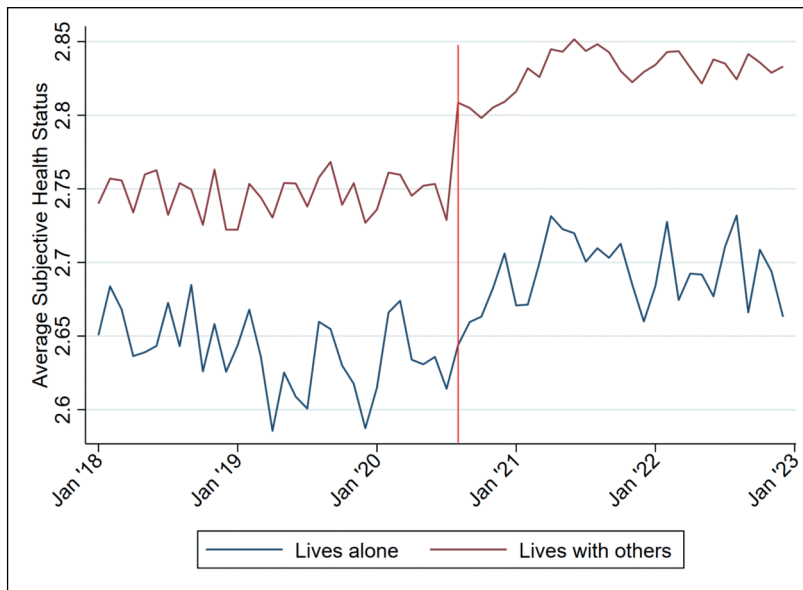


Figure 6: Average Subjective Health Status³ of respondents from January 2018 to December 2022 by living arrangement (lives alone vs lives with others)⁴

concern for efforts to enable successful ageing and improve older adult well-being.

Conclusion – how can we move forward?

In this article we have highlighted two significant implications of an ageing population – the rise in the proportion of individuals suffering from one or more chronic conditions, and the

rise in social isolation – and also discussed why these implications are a cause for concern for all segments of society. While the data that we collect at ROSA has enabled us to track and highlight these trends and implications, another very important aspect of the research being done at ROSA is also concerned with developing and identifying potential solutions that can address such implications.

Specific to the issues raised in this article, our research aims to enable effective responses in two key ways.

Firstly, ROSA's research aims to discover ways in which the gap between the health-adjusted life expectancy (HALE)⁵ and the life expectancy (LE)⁶ of Singaporeans can be minimised. In other words, we endeavour to discover ways in which we can maximise the amount of time that Singaporeans spend their lives in good health by identifying social, psychological, economic, and lifestyle factors that can help to reduce the onset of chronic conditions. In line with national healthcare efforts, our research thus emphasises a preventive approach and advances pro-health interventions that can alleviate disruptions to everyday life due to chronic ailments.

Secondly, ROSA's research aims to discover ways in which we can empower older adults themselves to address the issue of social isolation. This

³ Subjective Health Status is measured using a single item asking respondents to rate, on a 5-point scale ranging from "Excellent" to "Poor", how they would rate their health. A higher score reflects a better subjective health status.

⁴ The vertical red line denotes August 2020 when the order of the survey that we field monthly was amended. As a result of the revised order, we noticed an artificial inflation of the subjective health status. This likely explains the sharp increase in subjective health status observed in August 2020.

⁵ Health-adjusted life expectancy, or HALE, refers to the number of years that an individual can expect to live in full and good health.

⁶ Life expectancy, or LE, refers to the average period that an individual is expected to live, regardless of whether they live in good or poor health.

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work is driven by the idea that older adults should not be viewed as passive recipients of aid, but active citizens with the potential to contribute back to their communities. In this sense, we believe that tapping on the resources that older adults can provide for their communities would be a sustainable way to address the issue of social isolation. Similarly then, our research in this area aims to identify the social, psychological, economic, and lifestyle factors that can empower older adults to possess the agency to contribute to their communities.

ROSA thus leverages on our multi-disciplinary research team to support such holistic approaches to supporting successful ageing and addressing the issues

raised in this article. This is vital given the fact that such efforts will require a whole-of-society approach as we have demonstrated in this article. Researchers and policymakers who are actively working to address population ageing in Singapore will thus need to adopt multidisciplinary perspectives in understanding the issues that arise out of population ageing, and to establish cross-sector collaborations when developing interventions. Importantly, such new perspectives must also include a reconceptualisation of the way we think of older adults and move away from the impression that older adults are a burden by recognising older adults as a valuable resource that can be tapped on. Only in doing so can we truly enable 'successful ageing' in Singapore.

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A Caregiver's Reflections

Beyond the Economics of Caregiving

by **Mr Tan Tai Kiat**

Chief Operating Officer, SingHealth



Reflecting on my caregiving journey and what I have learnt in economics, public policy, and gerontology, I find that the key concepts of economics are still relevant in caregiving. Concepts such as scarcity and resource allocation, supply and demand, and costs and benefits are all relevant; albeit from the vantage of my life's course, these concepts go beyond economics and are layered with biopsychosocial considerations.

As a family caregiver to my parents and parents-in-law, the relevance of concepts like scarcity and resource allocation is apparent. Time is a scarce resource and there are competing demands on it such as family and work responsibilities. As with any resource, there are constraints on time and resource allocation in the form of time management is necessary. For example, caregiving responsibilities can overlap with work responsibilities when caregivers need to prepare food for their family members during working hours. However, the constraint may not be as binding as before as technological advancements

have enabled a multiplier effect on this finite resource of time. In this example, one can multi-task and fulfil both work and caregiving responsibilities by using apps to order food while working!

Technology as an enabler has stretched the boundaries of scarcity just in time to alleviate some of the issues caused by a rapidly ageing population in Singapore. Technology can help to manage the supply and demand of caregiving needs for both care recipients and older adults. On the demand side, the young-old group in the ageing population is likely more technologically-savvy and used to digital services. They can access caregiving resources on their own and are less reliant on their caregivers. On the supply side, caregivers can optimise their time by using the online services such as digital services to plan for the

medical appointments of their family members.

However, while technology may help, it is not a panacea. There may be unintended consequences of digitalisation in the form of entrenching inequity where those who are plugged in and have the means to do so enjoy the benefits while those who do not face increasing difficulty as in-person services are replaced by digital services. Additionally, technology cannot offer a complete and permanent solution. There can be changes in caregiving trajectories depending on the needs of the care recipients, different life courses and the dynamic caregiving context. The technological offerings at a point in time may not meet the needs over time. Finally, the family caregiver population is not homogenous. Such heterogeneity may require a mass yet customised

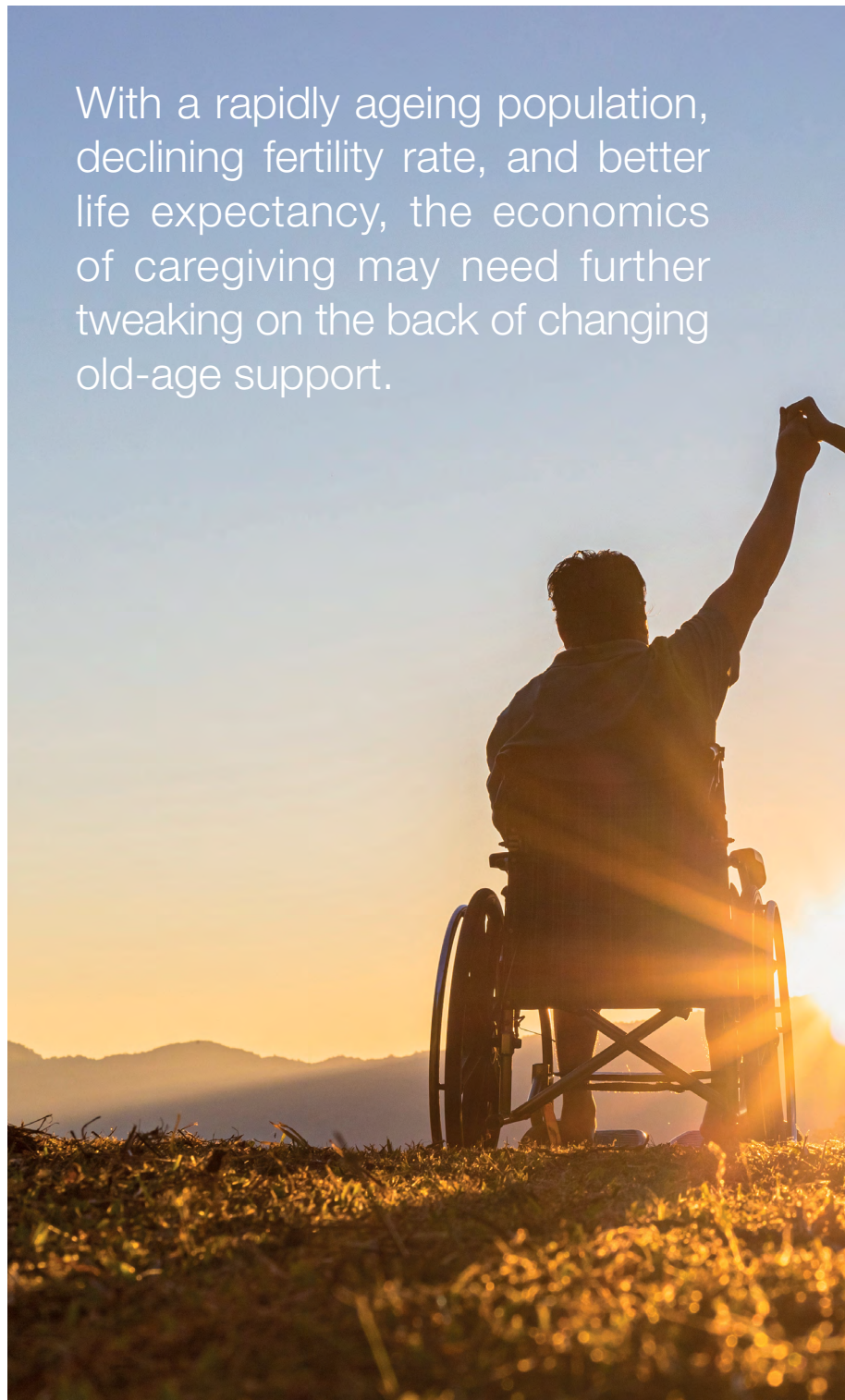
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supply approach to meet the diverse caregiving needs. Individuals may have specific biopsychosocial (i.e., physical, psychological, and social) considerations, which technology may not be able to replace fully.

Since the digital approach may not totally cater to different strokes for different folks as caregiving demand and supply both involve a biopsychosocial (i.e., physical, psychological, and social) aspect, it is crucial to include biopsychosocial considerations in planning the supply and demand of caregiving. Points of consideration include: how can biopsychosocial qualitative data be used to make economic sense and place a value on caregiver support and caregiver burden to guide resource allocation; and how do we place a value on the externalities of such social investment?

Reframing the economics of caregiving to include biopsychosocial considerations would influence the way we think about resource allocation, supply and demand, and cost-benefit. Perhaps it is a matter of perspective. Instead of starting with a budget constraint as is the case in conventional

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economics, perhaps we should consider what matters at what value, and the sustainable value is.

With a rapidly ageing population, declining fertility rate, and better life expectancy, the economics of caregiving may need further tweaking on the back of changing old-age support. How can economics ensure sustainable caregiving that focuses on the biopsychosocial aspects of caregiving? Can social prescription be extended to caregivers, and caregiver training grants be provided to help caregivers learn how to self-care? What about a time-bank programme to build community resourcing and credits for those to draw-down in future? How can we provide accessible caregiving support for those in need of help, including the underserved and sandwiched groups?

Caregiving is about caring and giving, I am sure there is an economic value to these and sustainable value creation to our society. The issue is definitely not one beyond economics.

Challenges of **Talent** **Recruitment** and Retention in the **Health and** **Care Sector**



by **Dr Kelvin Tan**

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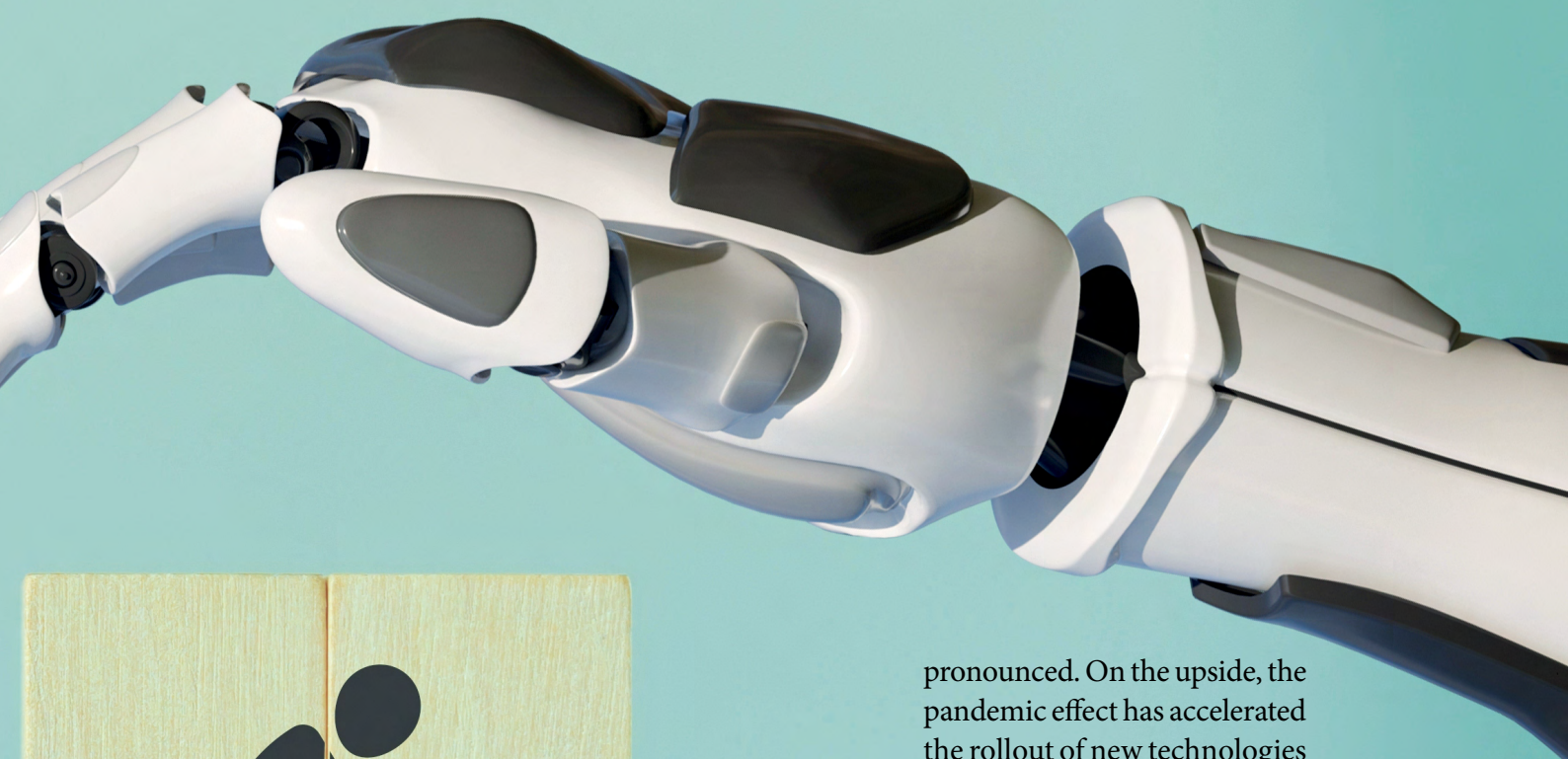
Singapore is approaching the status of a super-ageing country. We have one of the longest lifespans in the world. As we live longer lives, we also want to have a long health span – the number of years living happily, healthily and independently. To achieve the important objective of closing the gap between

health span and lifespan, the stakeholders comprising health and care providers, corporates, educational institutions and government agencies are important collaborators.

A study cited by US National Academy of Medicine (NAM) reports that social determinants of health (SDoH) such as patient behaviours,

environmental conditions and socioeconomic elements, account for a whopping 80–90% of factors that impact health outcomes.

The stark reality confronting all of us, not just in Singapore, but around the world, is that we all have manpower constraints. Singapore, in particular, cannot be growing our pool of health



care workers indefinitely. Neither are there sufficient Singaporeans to take on all the job vacancies in this sector. We need to approach the growing health care needs with creative and productive solutions.

Over the last 2.5 years, the health and care industry has grappled with many challenges. As a result of the pandemic, the need for resources, enhanced workflow systems and provision of care have become more

pronounced. On the upside, the pandemic effect has accelerated the rollout of new technologies and instilled an innovation culture in delivering health and care within and beyond the hospital walls. On a macro level, the health and care system aims to minimise any inequalities that result from the wide range of sociodemographic factors.

In the light of offering technology-driven replacement of selected tasks, care workers, doctors and nurses can have more bandwidth to provide attention and care to their care recipients. Effort is intensifying to prioritise technology in optimising the processes for care delivery. This will further

free up manpower resources for workers to focus on more specialised tasks and personalised care for their clients. Care providers can ensure the well-being of the patients and their care workers.

Increasingly, care providers are working with public health institutions and strategic partners to pilot new technologies that can improve efficiencies and transform care of patients. Hospitals have deployed robots to interact with patients and complement the service of care workers. For example, Singapore General Hospital (SGH) uses robot helpers to talk to patients during consultation sessions. In Tan Tock Seng Hospital, robots serve as pharmacy assistants to dispense medicine to patients.

Newly minted solutions like health screening system, and smartphone consultation booth are becoming more pervasive and widely accepted. AI, Robots and automated solutions are commonly deployed in the healthcare eco-system. It is not surprising to see robots moving around hospitals to assist the care workers in lightening their workload.

Indeed, the health and

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care services sector is more open to harness technology to overcome its operational challenges. The Future Health Index (FHI) Report is an annual publication by Philips to inform the readiness of countries in addressing the global health challenges and build sustainability, fit for purpose and the national healthcare systems. In the FHI 2022 report, findings reveal that healthcare leaders are realising the power of data and digital technology to cope with better customers' experience coming out of the pandemic.

Notably, FHI 2022 shows that Singapore health sector is well above the global average (92% vs 56%) in terms of working with predictive analytics. This is double the European average (47%), as well as significantly higher than the United States (66%) and China (79%).

We are witnessing some major shifts in health and care

facilities. Artificial Intelligence (AI), while not quite in the consciousness of healthcare workers, is actually ubiquitous without people's realisation. It is one of the major investment areas among the ranks of Digital Health and telehealth. In the field of predictive analysis, we are extracting more out of the information from the healthcare system. Beyond operational settings (16%), the expected potential of growth is expected in clinical decision making (25%). AI supports clinical processes and exists in diagnosis for example, the no-show predictive model uses machine learning to identify patients who are likely to be no-shows. Maximising available time while optimising clinic resources. AI can also be used to support the individual needs based on their medical conditions and records. Using AI to inform the care recipient of all kinds of activities and access of resources is a step towards

an ownership-based model. The future of AI technology is centred on making more sense out of the data collected from individuals and empowering them to take responsibility of their health and wellbeing.

Despite early successes with AI, we foresee barriers standing in the way of more widespread adoption including how it can be implemented correctly and well-integrated into workflows. Failing which, it can end up burdening the clinicians such as demanding more interpretation, post-processing and acquisition times. Unaddressed, these issues can damage clinicians' confidence in AI-enhanced systems over the long term. Some key questions lingering on AI and its perception in the society: How do you get the less able segment of the society to become comfortable with using

healthcare technology? How can AI play a role in the softer side of care, when it needs the human touch of reading non-verbal cues? Will Singapore's health and care providers be willing to use AI technology as much as they can? How much of it is attributed to workforce resistance? What infrastructure needs to be in place to achieve the maximum potential of technology in the health and care sector?

Healthcare leaders are refocusing on a number of new and existing priorities, from unlocking the full potential of technology, to extending care delivery and addressing staff shortages. It will affect the workforce management in the health and care sector. Digital transformation in the health and care sector is not a simple matter of technical change but requires adaptive

change in human attitudes and skills as well. Institutes of Higher Learning (IHL) play a critical role in developing a new mindset and upskilling the health and care workforce for new job opportunities and career planning. Utilising digital tools and new pedagogy to redesign professional development courses in the healthcare sector will increase the attractiveness of this sector and skills relevance especially in the technology age.

According to Philip's FHI 2022 report, almost one-third (32%) of healthcare leaders in Singapore are placing staff satisfaction and retention at the top of their priority list. The focus on improving staff satisfaction (18%) has risen from 2021 (15% vs 18%), and the emphasis on staff retention has increased significantly (9% vs 15%). Pay rises could help

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with recruitment and retention, more fundamental changes for example in roles, working hours, training and recruitment policies are equally important.

As demand for health and care for the ageing population continues unabated, healthcare providers are facing increasing staff shortages in many parts of the world, including the Asia Pacific region. The World Health Organization (WHO) estimates that by 2035 there will be a global deficit of 12.9 million skilled healthcare professionals.

Singapore can attract more talents to the health and care field by creating conducive working environments, reducing burnout rate and promoting more work-life balance, competitive remuneration structure and the use of technology to assist the work of care professionals.

Singapore has begun to

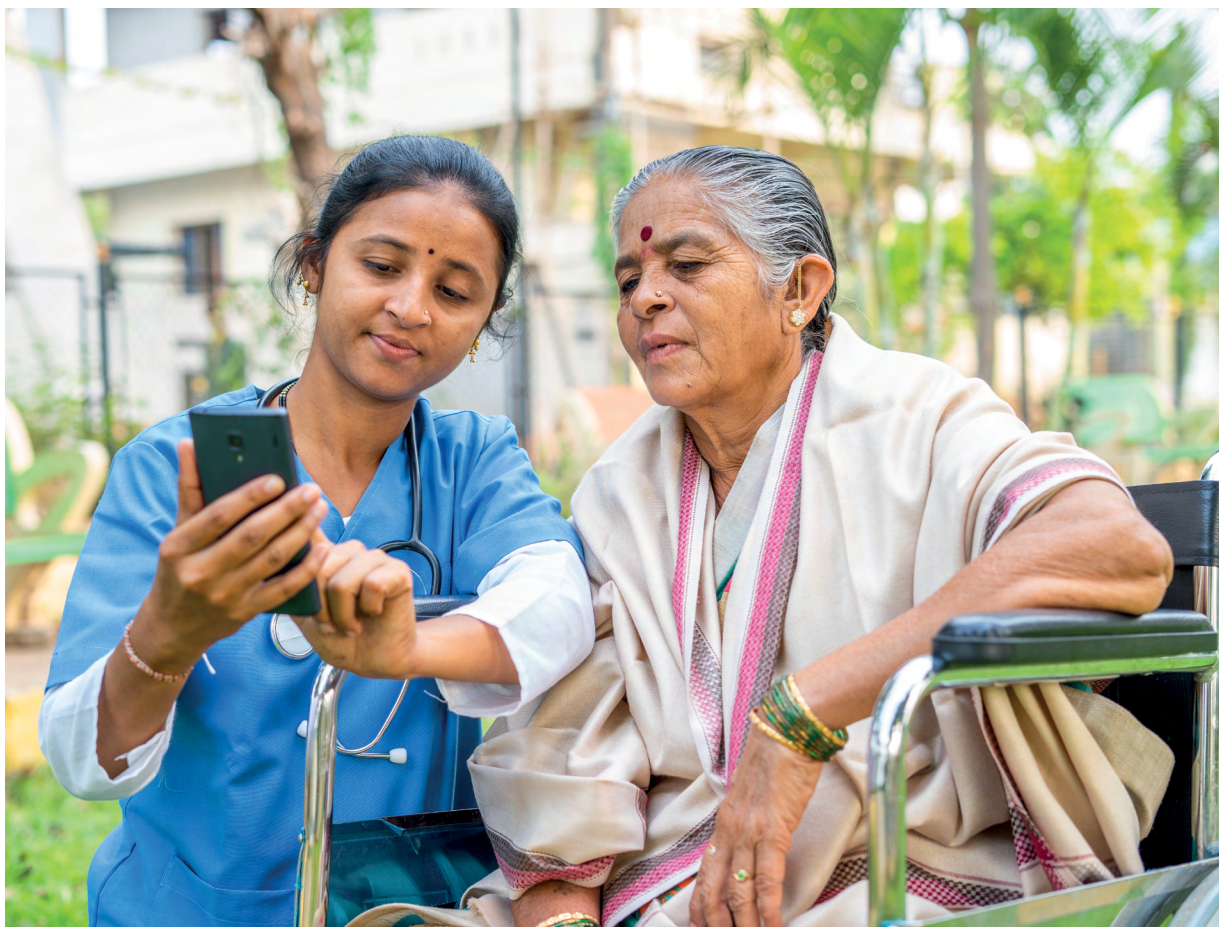
unlock the power of technology by building a more connected and engaged workforce. Alongside investments in digital health records, telehealth and artificial intelligence, healthcare leaders will also have to invest in their people. As Singapore pivots towards the prioritisation of preventative healthcare, the rules of engagement are changing for the healthcare workforce in multiple ways. Data and digital technology have an increasingly large role to play in shaping the future of care, and being part of the solution to our talent crunch.

The future of work is poised to bring better, more fulfilling jobs to health care. In Singapore, DPM Lawrence Wong has alluded to building a stronger social compact to strengthen social capital and foster trust in the system, with healthcare being a key pillar of the Forward SG strategy.

In doing so, Singapore can ride on these developments to build a more connected and engaged workforce that is equipped to support the transition away from disease-focused care, and towards persons-focused and integrated care. Care providers will need to step up as they not only need to be well-versed in delivering data-driven care in hospitals, but also be adept at engaging with patients meaningfully to encourage them in their digital health journey.

We may aspire to reach a tipping point similar to the manufacturing sector in scalability and order for the propagation of a new platform and app to reach saturation or maturity. We still need to make the health and care an exciting and successful sector. Then, more people can be expected to join and achieve a career progression. Technology is an

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enabler. It is not a means to replace the human touch, but to assist humans in the delivery of care to patients.

Finally, IHLs have the pivotal role of training more multi-disciplinary talents with better knowledge of the health and care sector to join the industry. Lifelong learning for healthcare workers with the updated skillsets shall be a norm. More can be equipped

with technological tools like AI, which works with the new generation of healthcare workers. Technology will continue to play an important role in attracting digital talent to the healthcare sector and in improving efficiency. With more investment in technology and recognition of the important work of health and care professionals. We can retain older workers and also

broaden the strategy to attract new ones with a narrative that there are forward-looking careers in the health and care sector.

With an eye on the right investments in the required human capital and more widespread adoption of healthcare technology, closing the gap between lifespan and health span is definitely achievable!



Man and Ageing

by **Mr Ryan Wong**
Hwa Chong Institution

Wisdom from Mr Lee

In 1972, our late founding father and former Prime Minister Mr Lee Kuan Yew made a speech at the Fifth Asia-Pacific Congress of Cardiology Delegates. In his speech, I found this nugget of wisdom: “Life is better short, healthy and full than long, unhealthy and dismal.”¹

To understand why Mr Lee said that, we have to know he was a practical man. In the same speech, he wished that human lives were like that of cars, where “in America, the economics have been worked out one stage further: don’t buy a car, lease it for two years.” Indeed, a short but full life maximises its quality by reaping the benefits of youth and avoiding the diminishing wellbeing in one’s later years.

Yet, this is a false dichotomy. Mr Lee himself lived a long, (mostly) healthy and very full life. As he aged, he continued to contribute to Singapore’s development as Senior Minister and then Minister Mentor, offering erudite wisdom from his decades of experience.

It is evident that Mr Lee had figured out the economics of life for himself, and maximised the richness of his own life; his contributions to Singapore did not wane as he aged. However, Mr Lee is an extraordinary example. What about the average Singaporean? Does a worker add more value to the economy as he/she ages? What are the implications of that?

¹ https://m.facebook.com/nt/screen/?params=%7B%22note_id%22%3A3333132406785775%7D&path=%2F-notes%2Fnote%2F&refsrc=deprecated&_rdr

On the upside, there are both tangible (more experience, knowledge, skills) and intangible (loyalty, commitment, work ethic) benefits of hiring older workers that will indubitably add value to any company they join.

Ageing workers: a cost-benefit analysis

There are both up and downsides to the economy when a worker ages.

On the upside, there are both tangible (more experience, knowledge, skills) and intangible (loyalty, commitment, work ethic) benefits of hiring older workers that will indubitably add value to any company they join². This would lead to higher productivity and output, which is good for an economy since it drives growth and reduces unemployment.

However, as workers age, their cognitive ability declines³, which balances out the aforementioned productivity gains. In addition, their decline in physical health also increases healthcare costs for employers, making them more expensive to hire. Employers who have a longer time horizon might also be reluctant to hire older workers, as they will be retiring in a few years, resulting in rehiring and retraining costs being incurred.

So, are older workers beneficial to our local economy? I think it depends on the industry. For blue-collared workers, their jobs consist mostly of manual labour. As such, one's physical fitness is a major factor in determining a blue-collared worker's productivity. Since physical fitness generally declines with age, blue-collared workers become less valuable as they age as their productivity will inevitably decline.

For white-collared workers, this is not so much the case. The aforementioned tangible and non-tangible benefits of ageing are more germane to them because there are multitude of factors that go into determining a white-collared worker's productivity. Thus, their economic value is likely to hold as they age, assuming external factors like technological change and job demand hold constant. As such, in a corporate environment, it would make

² https://www.tal.sg/tafep/-/media/tal/tafep/employment-practices/files/the-value-of-mature-workers-to-organisations-in-singapore_2014.ashx

³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4906299/>

the most sense for employers to hire a mix of both younger and older workers to play off their different strengths.

In practice, this is not what we are seeing; ageism is still pervasive in Singapore⁴ and older workers are finding themselves marginalised in terms of both salary and opportunities solely on the basis of their age. According to the Schwartz Centre for Economic Policy Analysis, the wages of older workers have been trailing their younger counterparts' for the last three decades⁵. I believe that this is unacceptable, not just on a moral basis, but also an economic one.

Ageism and salary

To explain why under-compensation is unacceptable, we first have to understand why it happens. Let's use a game-theoretic lens to find out.

As workers age, their bargaining power decreases. This is due to a multitude of reasons, such as inflation eroding their retirement security⁶, digitalisation threatening their competitiveness⁷, and the erosion of labour unions⁸, just to name a few.

A direct consequence of this is the weakening of their Best Alternative To a Negotiated Agreement (BATNA), which basically means that their fallback option has worsened. In variable-threat bargaining, a worse BATNA leads to a worse negotiated outcome. Intuitively, this makes sense: a weaker BATNA means that there are fewer/poorer options to fallback on, so the negotiated agreement, the salary in this case, becomes more important. This leads to a reduced confidence in risk-taking during the negotiation and thus one is less likely to walk away from worse deals.

In Singapore, a survey conducted by Duke-NUS⁹ found

As workers age,
their bargaining
power decreases.

⁴ <https://www.randstad.com.sg/hr-trends/workforce-trends/ageism-in-the-workplace-singapore/>

⁵ <https://www.economicpolicyresearch.org/jobs-report/2019-q2-older-workers-report>

⁶ <https://www.mercer.com/our-thinking/wealth/the-rise-of-inflation-pension-savings.html>

⁷ https://academic.oup.com/innovateage/article/2/suppl_1/398/5171185?login=false

⁸ <https://www.epi.org/publication/what-labor-market-changes-have-generated-inequality-and-wage-suppression-employer-power-is-significant-but-largely-constant-whereas-workers-power-has-been-eroded-by-policy-actions/>

⁹ https://www.duke-nus.edu.sg/docs/librariesprovider3/research-policy-brief-docs/triumphs-and-tribulations-of-older-workers-findings-from-a-focus-group-inquiry-into---amended5342e88c41d-e4d12981389305e25ea61.pdf?sfvrsn=a5ebdc19_0

Workers who feel that they were unfairly discriminated against based on age might file lawsuits, while consumers might show their stance by boycotting that brand.

that older workers felt that they had a “low market value” due to the threat of technology and their age, amongst other factors which contributed to their troubles negotiating a better salary. One participant even lamented his “(lack of) bargaining power”, indirectly acknowledging their worsened BATNA. Albeit anecdotal, I believe that this game-theoretic logic is sound in explaining the rise in relative poverty amongst the working elderly¹⁰.

Underpaying older workers doesn't add up

Having understood firms' rationale for underpaying workers, why is it still economically unwise for local firms to do so? I have two reasons.

1. *Reputational and legal costs*

As mentioned earlier, the marginal productivity of older and younger workers are roughly the same¹¹. As such, underpaying older workers is unfair, leading to dissatisfaction from the workers themselves and society at large.

Workers who feel that they were unfairly discriminated against based on age might file lawsuits, while consumers might show their stance by boycotting that brand. The lawsuits would waste a firm's valuable resources and drive up their short term costs, while the boycotts from an increasingly ethical consumer market¹² will lead to a fall in revenue; when put together, underpaying older workers is clearly an unprofitable move.

Detractors of my argument will be quick to point out that while ageism lawsuits can be easily filed, they are hardly won¹³,

¹⁰ https://www.channelnewsasia.com/cna-insider/ploughing-faces-and-insecurities-singapores-elderly-working-poor-1014426?cid=internal_app-web-view_iphone_03012023_cna

¹¹ <https://pubmed.ncbi.nlm.nih.gov/33612506/>

¹² https://www.accenture.com/_acnmedia/PDF-134/Accenture-COVID-19-Pulse-Survey-Wave7.pdf%20-%20zoom=40

¹³ <https://www.bloomberg.com/news/articles/2022-09-12/age-discrimination-is-common-winning-lawsuits-rare-quicktake>



and Singaporean consumers are still very pragmatic and cost-conscious¹⁴. Indeed, I agree that these findings might make reputational and legal costs a non-factor in the short term. However, the trend is still pointing towards eliminating ageism in the long run, and local consumers will progressively enter a paradigm shift as the Gen Zs enter the workforce and gain greater purchasing power. Thus, there will be an incentive for firms to act ethically in future, which definitely does not include shortchanging older workers.

Furthermore, as a country with strong enforcement and legislation, it would be remiss for companies to think that ageism is still acceptable and that they can get away with it. If Singapore can impose fines for not returning one's trays at food centres, what's to say of ageist practices in the workplace? In 2020, the Ministry of Manpower (MOM) penalised five employers for age discrimination practices¹⁵. MOM has already shown that it is taking a hard line when it comes to punishing blatant ageism, and they are likely to make it very costly for firms with internalised ageism as well.

¹⁴ https://www.channelnewsasia.com/singapore/big-read-rise-ethical-consumer-can-it-uplift-low-wage-workers-too-2187176?cid=internal_sharetool_iphone_30122022_cna

¹⁵ <https://www.mom.gov.sg/newsroom/press-releases/2020/0320-five-employers-penalised-for-age-related-discriminatory-hiring>

Associate Professor Teo You Yenn found that the salary of low-income elderly workers is insufficient for them to retire, and for some jobs just barely enough to cover living costs.

2. Financially unsustainable

In addition to reputational and legal costs, underpaying older workers is unviable in the long run. Older workers have poorer health in general, and thus they are more likely to incur higher healthcare bills. Underpaying them will leave them with financial hardship if a rainy day were to strike, which is something the older workers are most definitely aware of. This could cause more stress and adversely affect their long-term productivity and turnover rates, leading to higher costs and lower revenue for the firm.

Research concurs with my belief. In a local study of the financial situation of low-income elderly in 2019, head of the sociology department in Nanyang Technological University and author of national best-selling book *This is What Inequality Looks Like*, Associate Professor Teo You Yenn found that the salary of low-income elderly workers is insufficient for them to retire, and for some jobs just barely enough to cover living costs¹⁶. Worldwide, ageism costs our society \$63 million in excess healthcare costs annually¹⁷.

As profit-maximising entities, I can be fairly certain that employers are aware that these risks exist. Why are their policies and actions still ageist then? I turn to behavioural economics for answers.

Explaining the uneconomical wage gap

There are two possible reasons why underpayment still persists.

1. Halo effect

The halo effect is a cognitive bias where positive impressions in one area positively influence our feelings in another. Studies into this effect have shown that the young are seen as more competent and hireable than older workers¹⁸, even though this is not necessarily true. This type of subjective perception is innate and difficult to overcome.

¹⁶ <https://whatsenough.sg/wp-content/uploads/2019/05/what-older-people-need-in-singapore-a-household-budgets-study-full-report.pdf>

¹⁷ <https://academic.oup.com/gerontologist/article/60/1/174/5166947?login=false>

¹⁸ https://web2-bschool.nus.edu.sg/wp-content/uploads/media_rp/publications/w2GMz1422939647.pdf



2. Narrative economics

Nobel prize-winning economist Robert Shiller contended that dominant social narratives have the capability to drive significant economic events¹⁹, such as the 2008 financial crisis.

Similarly, today's dominant narrative where the elderly are still discriminated based on age²⁰ may further reinforce current practices of underpaying older workers. The infantilisation of the elderly in Singapore²¹ is another practice that reinforces the belief that older workers are incompetent and need more hand-holding. These beliefs that are prevalent in Singapore's society may mislead employers into thinking that older workers are indeed less competent and thus should be compensated less.

¹⁹ <https://www.jstor.org/stable/44251584>

²⁰ <https://www.mom.gov.sg/newsroom/press-replies/2020/0304-protecting-and-supporting-seniors-who-face-discrimination>

²¹ <https://dr.ntu.edu.sg/bitstream/10356/93631/1/Felicia%20Chee.pdf>

Fortunately, Shiller's theory offers some hope: if we can propel the facts of the matter, that older workers are just as productive as younger workers, the ensuing narrative will see older workers being compensated more fairly in lieu of the aforementioned economic downsides of not doing so.

Exploring solutions

To tackle the spectre of ageism in Singapore, I suggest a two-pronged approach: First, to drive a paradigm shift in eliminating the ageist narrative. Second, to integrate older workers back into the workforce with fair compensation.

To change the ageist narrative, more needs to be done to debunk misconceptions surrounding the elderly. This can be done by leveraging current anti-misinformation policies like Protection from Online Falsehoods and Manipulation Act to tackle insidious misconceptions surrounding the productivity and competency of the elderly that perpetuate ageism. I believe this would work well in Singapore because we are becoming an increasingly liberal²² and digitalised society. This duo enables us to leverage social media to spread the true value of older workers and start anti-ageism campaigns as well.

In addition, we must begin to retain and reintegrate the elderly into our workforce. What else can we do besides the obvious move of raising the minimum retirement age? A study conducted in 2017 found that a combination of job-search training and hiring subsidies worked well in Germany²³. It makes sense: job-search training reduces frictional unemployment and the subsequent loss of motivation to work, while hiring subsidies incentivise firms to hire older workers, giving competent individuals a chance to build trust with their employers: a critical ingredient for long-term performance²⁴.

However, these policies might not necessarily work in Singapore just because they did in Germany. As a resource-scarce country that prides herself on meritocratic values, older workers

²² https://lkyspp.nus.edu.sg/docs/default-source/ips/st_younger-people-more-liberal-than-older-responses-polled_030519.pdf

²³ <https://www.econstor.eu/bitstream/10419/172881/1/dp1717.pdf>

²⁴ <https://ryanwongyh.com/2022/11/25/what-is-trust/>

have to be equally competent to justify equal pay. While this might be the case for white-collared workers, blue-collared workers will continue to struggle, especially with cheap foreign labour competing for non-PMET (professionals, managers, executives and technicians) jobs²⁵. Furthermore, there are already existing subsidies by MOM to support low-income elderly workers such as Workfare and the Silver Support Scheme.

I believe that financial aid like the Silver Support Scheme does not tackle the root cause of ageism, and should be used merely as a short-term solution while time is being invested into changing the perception of the elderly amongst Singaporeans. However, the Workfare scheme is immensely helpful in providing opportunities for older workers to access better jobs. In a world where change is constant, it is imperative for us to adapt and upgrade our skills to stay relevant. In addition, I believe hiring subsidies are an effective short term incentive for firms to hire older workers, so that they can witness their productivity and value first-hand to kick-start a practice of recruitment free from ageist stereotypes. In the long term, when the information gap has been bridged, these subsidies would no longer be necessary.

Final thoughts

In the labour market, perhaps age is really just a number. With public perceptions slowly shifting, I hope that future policies will aid old but competent workers to remain in the workforce for as long as they wish. Then, more people can live like Mr Lee did and lead a long, yet rich, life.

Ryan is currently serving his full-time national service in the Singapore Armed Forces. An environment and finance enthusiast, he is keen on making an impact by sharing his ideas through writing on his blog. In the future, he hopes to study economics in the UK and use his education to help the economy go net-zero and beyond.

²⁵ <https://www.businesstimes.com.sg/singapore/economy-policy/border-reopenings-fill-non-pmet-jobs-labour-market-stay-tight-economists-0>