PUBLIC ATTITUDES TO PERSONS WITH DISABILITY AND THEIR INCLUSION WITHIN SINGAPORE SOCIETY

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EXECUTIVE SUMMARY

Public attitudes towards people with disabilities (PWDs) in Singapore are generally positive as shown by the results of an online survey using a consumer panel of over 1800 eligible respondents. Respondents express strong support for fostering inter-personal relationships with PWDs and for achieving more inclusive socio-political outcomes.

The majority — more than three in five — report no significant concerns about interacting with PWDs in either professional or social settings (see Chapter 3). For those who do express concerns, these often relate to (i) the perceived challenges of accommodating PWDs effectively in professional environments or (ii) a lack of knowledge about how to assist PWDs appropriately in social contexts.

Despite these positive attitudes, respondents tend to show a preference for interactions with individuals with physical and sensory disabilities, and a consistent avoidance across multiple contexts for persons with cerebral palsy, developmental disabilities and learning disabilities (see Chapters 2–4). Most respondents demonstrate a willingness to assist PWDs in need. However, a minority (i) choose to maintain distance in situations where they feel inadequately informed about disabilities or (ii) are unsure how to behave appropriately around PWDs (see Chapter 4).

In the context of disability service provision, respondents show the strongest support for meeting the full needs of PWDs in relation to public space accessibility and residential services. By contrast, support is weakest when it comes to fulfilling the educational needs of PWDs. (see Chapter 5) Nonetheless, the majority of the sample expressed support for the development of more inclusive socio-political outcomes — more than eight in 10 expressed their support for policy outcomes that entail greater benefits for people with disabilities even at the potential risk of inconveniencing some persons without disabilities (see Chapter 6). Furthermore, more than three in five indicated that the Singapore government should seek to do more for people with disabilities when it comes to the provision of services related to employment, education, accessibility of public space, accessibility of public transport and financial help (see Chapter 7).

Regression analyses reveal that demographic characteristics, social networks (measured by the frequency of contact with PWDs) and attitudinal factors significantly predict various outcomes (see Chapters

2–7). These include (i) levels of comfort with friendships and professional relationships with PWDs; (ii) levels of comfort and concerns with social interactions with PWDs across various settings; (iii) the willingness to help PWDs who seem to be in need; (iv) levels of support for inclusive policies and policy outcomes which seek to meet the full needs of PWDs; and (v) perceptions of government support measures.

Overall attitudinal factors are the most influential. The strongest and most consistent predictors include (i) the degree of respondents' interest in learning how to be supportive of PWDs and (ii) the level of comfort expressed by respondents with social relationships and social interactions with PWDs.

While survey findings demonstrate openness of the population to the inclusion of PWDs, the qualitative segment of the study show the range of concerns of PWDs, their caregivers and disability service professionals — reminding us that inclusion is still very much a work-in progress. Greater public awareness and policy support could help address existing gaps and foster a more inclusive Singapore society for PWDs and their families.

Chapter 1

Introduction

CHAPTER 1: INTRODUCTION

1.1 AIMS AND OBJECTIVES

The aim of this research is to investigate public attitudes on disability to better contextualise the findings of two separate waves[1] of qualitative research investigating the attitudes of key stakeholders in Singapore's disability sector (i.e., people with disabilities (PWDs), caregivers and employed professionals).

1.2 PROJECT CONTEXT AND LITERATURE REVIEW

This survey research is intended to supplement a broader qualitative examination of recent developments in Singapore's disability sector. Taken together, the qualitative and quantitative phases of this project (conducted in 2022) aim to update and supplement the findings gleaned from a previous wave of qualitative research conducted in Singapore between August 2019 to July 2020[2].

The Singapore government has introduced/updated a gamut of disability-focused services as part of the Third Enabling Masterplan (2017-2021). These include the introduction of new employment and training opportunities in 2021[3,4] (namely, Plane-and-Train programmes, Attach-and-Train programmes and Skills Development programmes), the SG Together Alliance for Action on Caregivers of people with disabilities

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[1] The first wave of qualitative research was conducted between August 2019 and July 2020 whilst the second wave was conducted more recently between May 2022 and July 2022.

[2] In this first phase of qualitative fieldwork, participants from a mix of key stakeholder groups in Singapore's disability sector were recruited to participate in a series of 24 focus group discussions (FGDs) and 27 in-depth interviews, from August 2019 to July 2020.

[3] *1,200 Job and Training Opportunities for Persons with Disabilities in 2021.* (2021, January 29). Ministry of Social and Family Development. https://www.msf.gov.sg/media-room/Pages/1200-job-and-training-opportunities-for-pwds-in-2021.aspx

[4] *Around 4,500 Jobs And Skills Opportunities In The Social Service And Early Childhood Sectors And For Persons With Disabilities.* (2021, March 5). Ministry of Social and Family Development. https://www.msf.gov.sg/media-room/Pages/Around-4500-Jobs-And-Skills-Opportunities-In-The-Social-Service-And-Early-Childhood-Sectors-And-For-PWDs.aspx

(PWDs)[5,6], new initiatives to improve disability services and case management support for PWDs with high support needs as well as the spread of recommendations released by three Enabling Masterplan Workgroups on employment[7,8], independent living[9,10] and inclusive preschools[11].

In addition, COVID-19 brought to the fore new needs and gaps Some gaps that have already gained media attention in Singapore include the (a) challenges faced by the blind and visually impaired in navigating a system of safe distancing stickers, crowd control barriers and SafeEntry QR codes[12,13], (b) difficulties faced by the deaf and hard-of-hearing in

[5] *Speech by Ms Sun Xueling, Minister of State for MSF and MOE at 2021 Budget Debates, 25 February 2021*. (2021, February 25). Ministry of Social and Family Development. https://www.msf.gov.sg/media-room/Pages/Speech-by-Ms-Sun-Xueling-Minister-of-State-for-MSF-and-MOE-at-2021-Budget-Debates-25-February-2021.aspx

[6] *Better Support For Caregivers Of Persons With Disabilities Through New Singapore Together Alliance For Action*. (2021, March 5). Ministry of Social and Family Development. https://www.msf.gov.sg/media-room/Pages/Better-Support-For-Caregivers-Of-Persons-With-Disabilities-Through-New-Singapore-Together-Alliance-For-Action-.aspx

[7] *Report by the Third Enabling Masterplan Workgroup on: Preparing Persons with Disabilities for the Future Economy*. (2021). https://www.msf.gov.sg/media-room/Documents/Report-by-EMP3-Employment-Workgroup-%2814-Apr-2021%29.pdf

[8] Low, Y. J. (2021, April 14). Suite of recommendations aims to help people with disabilities secure jobs more easily, live independently. *TODAY*. https://www.todayonline.com/singapore/suite-recommendations-aims-help-disabled-persons-secure-jobs-more-easily-live

[9] *Report by the Third Enabling Masterplan Workgroup on: Promoting Independent Living of Persons with Disabilities through Technology and Design*. (2021). https://www.msf.gov.sg/media-room/Documents/Report-by-EMP3-Independent-Living-Workgroup-%2814-Apr-2021%29.pdf

[10] Low, 2021.

[11] *Report by the Inclusive Preschool Workgroup on: Enhancing Inclusion and Support for Children with Developmental Needs*. (2021). https://www.msf.gov.sg/policies/Disabilities-and-Special-Needs/Enabling-Masterplans/Documents/InclusivePreschoolReport30Apr.pdf

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[13] Wong, S. (2021, September 29). Which seats are marked for safe distancing? Covid-19 challenges the visually impaired in S'pore face. *The Straits Times*. https://www.straitstimes.com/singapore/community/navigating-virus-measures-a-challenge-for-those-with-visual-impairment

communicating with public health professionals[14], (c) disruption of disability sports[15], (d) new barriers faced by persons with physical disabilities as entrances and exits are cordoned off to facilitate SafeEntry[16] as well as the (e) challenges faced by wheelchair users in scanning SafeEntry QR codes and tapping SafeEntry tokens[17]. News reports show that such challenges continue to persist even more than a year later[18].

Moreover, while some of these gaps have already been started to be addressed[19,20], sustainable solutions for meeting other needs continue to be elusive even as Singapore has come to the end of two years of living with the pandemic[21,22]. More research on needs and gaps brought about by Covid-19 can thus start to provide insights on how services could be better improved so that PWDs in Singapore will be able to have key needs met even as Singapore prepares to treat Covid-19 as an endemic disease.

Thus, given these recent developments, the current study aims to address these gaps by conducting updated qualitative research[23] with key

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[14] Tan, T. (2022, January 5). Deaf Covid-19 patients can now communicate with MOH through SMS and e-mail instead of phone call. *The Straits Times.* https://www.straitstimes.com/singapore/community/deaf-covid-19-patients-can-now-communicate-with-moh-through-sms-and-email-instead-of-phone

[15] *Speech by Mr Eric Chua, Parliamentary Secretary of Social and Family Development & Culture, Community and Youth, at the virtual launch event of the Singapore Disability Sports Council's LIFE Mobile Application*. (2021, July 8). Ministry of Social and Family Development. https://www.msf.gov.sg/media-room/Pages/Virtual-Launch-Event-of-the-Singapore-Disabiity-Sports-Councils-Life-Mobile-Application.aspx

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[17] Pal, A. (2022, January 13). Forum: More thought could have been given to vulnerable groups' access to public spaces. *The Straits Times.* https://www.straitstimes.com/opinion/forum/forum-more-thought-could-have-been-given-to-vulnerable-groups-access-to-public-spaces

[18] Wong, 2021.

[19] Tan, 2022.

[20] *Speech by Mr Eric Chua, Parliamentary Secretary of Social and Family Development & Culture, Community and Youth, at the virtual launch event of the Singapore Disability Sports Council's LIFE Mobile Application,* 2021.

[21] Lim, 2022.

[22] Pal, 2022.

[23] In the second qualitative phase of the study conducted in 2022 from May to July 2022, 50 additional participants were recruited to participate in 12 focus group discussions (4 with PWDs, 5 with caregivers, 3 with professionals).

stakeholders in Singapore's disability sector. These stakeholders include PWDs, caregivers as well as professionals employed in the sector.

However, while the qualitative phase of the study focuses on the views of stakeholders within the disability sector, the quantitative phase examines attitudes held by those outside the sector. Just as the feedback of stakeholders within the sector are crucial for the continued improvement of disability services, public attitudes are an integral factor shaping the everyday, lived realities of PWDs — in Singapore as well as overseas.

For instance, negative public attitudes have been linked to a plethora of adverse outcomes for PWDs in virtually every aspect of their lives. Crucially, negative public attitudes limit the quality and availability of disability services in societies and result in the social exclusion of PWDs[24]. Indeed, numerous research studies — conducted locally and internationally — have demonstrated how discriminatory behaviour stemming from negative societal attitudes can culminate in external barriers that circumscribe PWDs' quality of life in multiple domains of life such as:

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[24] The development, funding and successful implementation of disability services is directly impacted by the attitudes of able-bodied and neurotypical professionals employed in the sector as well as of the relatives of people with disabilities and other members of society including those of the political elite. Without their acceptance and support, it will not be possible to eliminate the social and structural barriers which exclude people with disabilities from full participation in society. Reference: F. Antonak, R., & Livneh, H. (2000). Measurement of attitudes towards persons with disabilities. *Disability and Rehabilitation*, *22*(5), 211–224. https://doi.org/10.1080/096382800296782

a) Education[25,26,27,28,29,30,31,32]

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b) Employment[33,34,35,36,37,38,39,40,41,42,43,44]
c) Healthcare[45,46,47,48,49]

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[37] Chiu, C. (2018, December 28). Let's shed more light on the disabled. *The Straits Times*. https://www.straitstimes.com/opinion/lets-shed-more-light-on-the-disabled

[38] Paramanantham, M. (2018, July 20). Course opens new job sector to those with disabilities. *The Straits Times*. https://www.straitstimes.com/singapore/course-opens-new-job-sector-to-those-with-disabilities

[39] *Discrimination Faced by People with Disabilities at the Workplace: A Qualitative Study by the Disabled People's Association (DPA) and the Institute of Policy Studies (IPS)*. (n.d.). https://www.dpa.org.sg/wp-content/uploads/2018/07/Discrimination-Faced-by-People-with-Disabilities-at-the-Workplace-Study-1.pdf

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[47] Nario-Redmond et al., 2019.

[48] Pruett et al., 2008.

[49] Wang et al., 2021.

d) Psychological Well-being and physical safety (includes freedom from bullying, abuse, assault and harassment)[50,51,52,53,54,55,56,57]

e) Community participation[58,59,60,61,62,63,64,65,66,67,68,69,70]

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[66] Findler et al., 2007.

[67] Nario-Redmond et al., 2019.

[68] Palad et al., 2016.

[69] Sheridan & Scior, 2013.

[70] Wang et al., 2021.

f) Social relationships[71,72,73,74,75,76,77,78,79,80]
g) Exercise of autonomy and personal agency[81,82,83]

For instance, the over-representation of PWDs in low-wage sectors — such as hospitality, food and beverage, wholesale, retail as well as administrative support — has been attributed by advocates and service providers for the prevalence of social prejudice in Singapore[84,85,86].

The extent of such prejudice was emphasised in an NCSS survey in 2015[87]. A third of Singaporean respondents indicated they would hesitate to employ a PWD. The executive director of the Disabled People's Association, Marissa Lee Medjeral-Mills, has observed that many Singaporeans first encounter PWDs in workplaces due to the segregation of students into mainstream and special education schools. This segregation limits opportunities for the abled and disabled to interact and grow up together. As a result, adult abled employers have little understanding of disability, she argues "are less likely to hire a person with a disability and, if they do, …are less aware of how to communicate and

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[71] Ee et al., 2021.
[72] Ee, Stenfert Kroese, et al., 2022.
[73] Yeo & Tan, 2018.
[74] National Volunteer and Philanthropy Centre, 2017.
[75] Barr & Bracchitta, 2008.
[76] Findler et al., 2007.
[77] Nario-Redmond et al., 2019.
[78] Palad et al., 2016.
[79] Sheridan & Scior, 2013.
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[87] *Understanding the quality of life of adults with disabilities.* (2017). National Council of Social Service.

work with that person"[88]. Prominent disability advocate, Cassandra Chiu, echoed these sentiments, reflecting that "many people with disabilities are prevented from gaining meaningful employment or accessing public services because of societal perceptions of what someone with a disability can or cannot do"[89].

Given its huge impact on the life outcomes of PWDs, public attitudes play a significant role in the actualisation of an inclusive society and the successful implementation of the principles[90] detailed in the United Nations Convention on the Rights of Persons with Disabilities (UN CRPD) ratified by Singapore in 2013[91]. Thus, an updated investigation of the attitudes held by members of the public is vital for the further development of support services for PWDs and the realisation of an inclusive Singapore.

The aim of this current study is to explore the types of public attitudes towards people with disability in Singapore. While the results of the study cannot be generalised to the broader Singapore population (see Section 1.3), they provide a reasonable sensing of attitudes held by a segment of the populace. Wherever possible, quantitative findings have been compared against the qualitative findings to demonstrate the range of attitudes that have been expressed by survey, focus group and in-depth interview respondents. Together, these data points add greater insight into the kinds of issues and challenges faced by people with disabilities in Singapore society.

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[88] Kok, X. H. (2017, March 5). Call to integrate people with disabilities early. *The Straits Times*. https://www.straitstimes.com/singapore/call-to-integrate-people-with-disabilities-early

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[91] *Singapore Ratifies UNCRPD.* (2013, July 19). Ministry of Social and Family Development. https://www.msf.gov.sg/media-room/Pages/Singapore-Ratifies-UNCRPD.aspx

That said, it must be acknowledged that social desirability bias is an inherent limitation of these methodologies[92]. Essentially, research studies examining socially or politically sensitive issues through self-reports by respondents are susceptible to the problems of "socially desirable responding"[93] whereby respondents have "the tendency to want to appear more altruistic and society-oriented than they actually are"[94]. In other words, there is a likelihood that respondents will seek to agree with statements that match prevailing social norms to "present a favourable image [of themselves] or to avoid negative feelings"[95]. While efforts have been taken to minimise this type of bias as far as possible[96], it cannot be completely eradicated. The findings must thus be interpreted with this in mind. However, despite these limitations, the current study provides an up-to-date exploratory sensing of public attitudes towards persons with disabilities amongst a segment of Singapore's resident populace. Moreover, the insights and trends from this study may be used to develop and refine a larger-scale, nationally representative study in the years to come.

The following sections will detail the survey methodology employed by this particular study in working towards this goal. Key considerations include data collection procedures, survey design deliberations and statistical methods.

1.3 SAMPLING AND RECRUITMENT

Participants were recruited through the global tech company, Toluna, which has an online consumer panel of over 100,000 Singaporean

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[92] Tan, H. C., Ho, J. A., Teoh, G. C., & Ng, S. I. (2021). Is social desirability bias important for effective ethics research? A review of literature. *Asian Journal of Business Ethics*, *10*(2), 205–243. https://doi.org/10.1007/s13520-021-00128-9

[93] H. C. Tan et al., 2021, p. 206.

[94] Ibid.

[95] Ibid.

[96] In the quantitative phase, survey respondents were given the privacy to fill up the questionnaire without any supervision from the research team. All participants were also assured that their results would be completely anonymous and that no personal identifiers would be given to the researchers analysing the data. In the qualitative phase, focus group and interview respondents were likewise assured that they would not be made identifiable in any writing or publication arising from the data. Focus group respondents were further instructed to be respectful of different views and encouraged to report their experience honestly.

participants. Two thousand participants were recruited for this survey over a period of three months from June to August 2022.

Only those who were (a) Singaporean citizens or Permanent Residents, (b) aged 21-75, (c) English-literate and (d) able to complete an online survey independently were invited to participate.

After conducting quality checks[97] on the data, the final sample consisted of 1801 participants (831 male, 970 female; M_{age} = 46.8 years, SD_{age} = 14.8) and was nationally representative in terms of gender, housing type and ethnicity (see section 1.4 for a more detailed demographic breakdown). Thus, sample weights were not applied to the analysis.

While there was a small number in the original dataset who had indicated some form of disability, we decided that we would not include this group in the sample to be analysed given their expected differences in views on disability matters (such as the extent of disability provision necessary). Neither was this segment in the sample sufficient in size for a comparative analysis of attitudes between those with and without disability. As such none of the 1801 participants included in the final sample reported experiencing any disabilities.

Unlike interviewer administered household surveys using a randomised administrative listing, an online consumer panel does not hold the same promise to provide generalisable population data. The online consumer panel does not account for views by small populations in Singapore who are not internet savvy such as the elderly and low income. Surveys to the panel are administered in English which also excludes those who are more comfortable in vernacular languages and are less educated. Nevertheless, an online survey conducted through a consumer panel when it is administered to a sufficiently large sample approximating 2000 respondents, allows for a reasonable sensing of prevalent sentiments and allows statistical analysis to derive significant predictors of a range of attitudes.

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[97] Participants who failed both attention checks and who clocked unrealistic survey durations were excluded.

1.4 DEMOGRAPHIC BREAKDOWN

1.4.1 The sample is nationally representative in terms of gender, ethnicity and housing type

The gender, ethnic and housing type breakdowns within the sample closely approximated those within the national resident population in Singapore in 2022 (see Figures 1, 2 and 3 below).

Figure 1: Breakdown of Sample and National Resident Population by Gender (%)

	Male	Female
National Resident Population (2022)	48.9	51.1
Sample	46.1	53.9
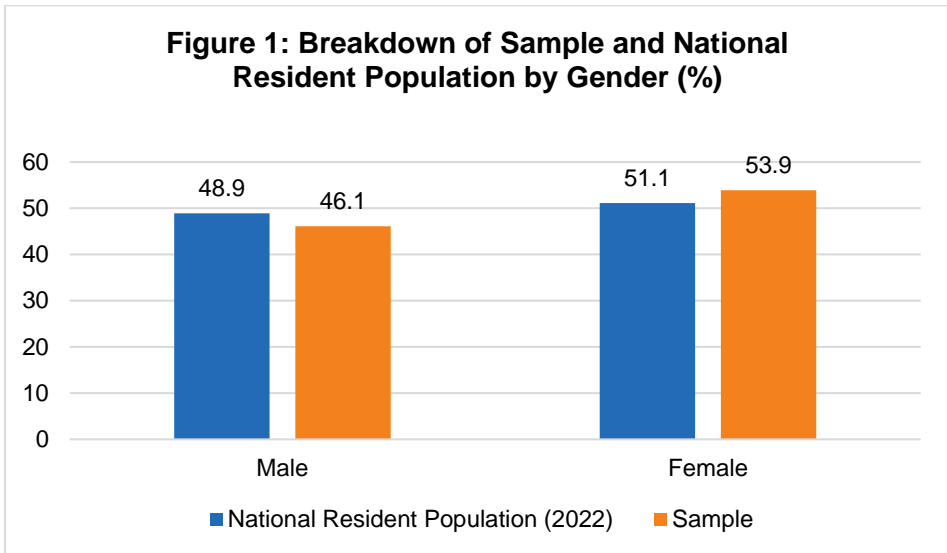
In the sample, 53.9% were female while 46.1% were male (see Figure 1).

Figure 2: Breakdown of Sample and National Resident Population by Ethnicity (%)

Ethnicity	National Resident Population (2022)	Sample
Chinese	74.1	75.3
Malay	13.6	12.8
Indian	9	9.1
Others	3.3	2.8
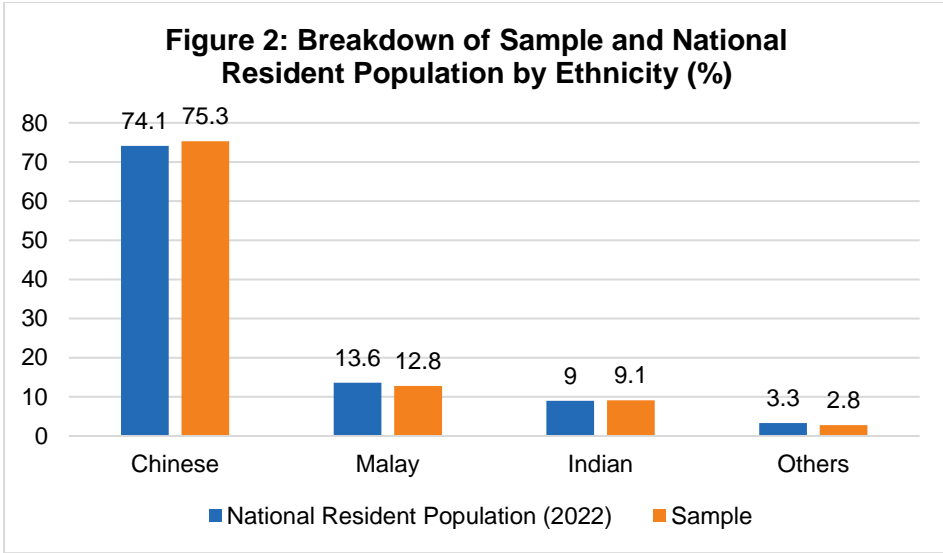
Over three quarters (75.3%) of the sample were Chinese, while another 12.8% and 9.1% identified as Malay and Indian, respectively. In the sample, 2.8% fell into the "Others" ethnic category (see Figure 3).

Figure 3: Breakdown of Sample and National Resident Population by Housing Type (%)

Housing Type	National Resident Population (2022)	Sample
HDB 1-2 Room	6.7	5.8
HDB 3-room	17.2	18.7
HDB 4-room	31.4	30.3
HDB 5-room…	22.5	22.5
Condominiums…	17	15.6
Landed…	4.9	5.6
Others	0.5	1.6
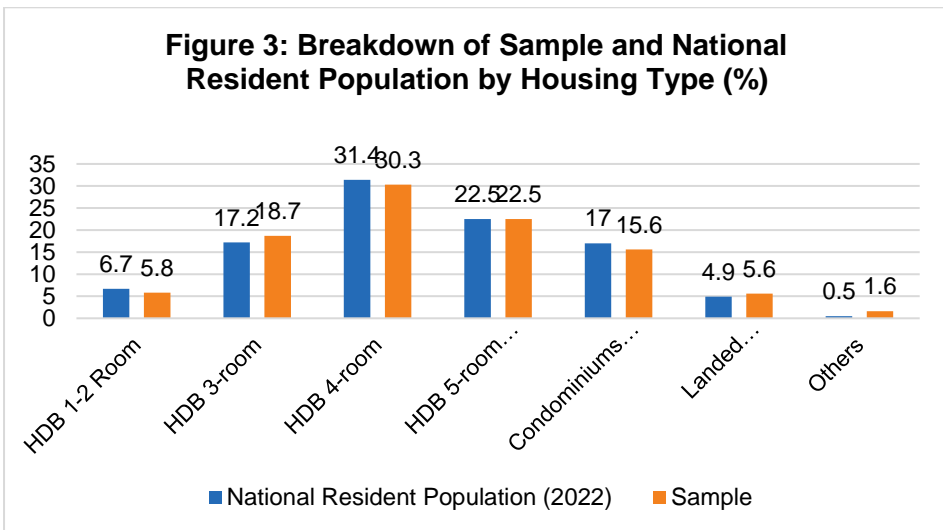
The most common housing type among sample respondents was the 4-room HDB flat. Close to three in 10 respondents (30.3%) fell into this category (see Figure 3). About one-fifth (22.5%) resided in 5-room HDB flats and executive flats while about another one-fifth (18.7%) resided in 3-room HDB flats. Another 15.6% resided in condominiums and other

apartments while a further 5.8%, 5.6% and 1.6% fell into the "HDB 1-2 Room", "Landed Properties" and "Others" categories.

1.4.2 The sample is not nationally representative in terms of monthly household income, education and age

The monthly household income, education and age breakdowns within the sample deviated noticeably from those within the national resident population in Singapore in 2022 (see Figures 4, 5 and 6 below). This deviation is common in studies which use an online sample.

Figure 4: Breakdown of Sample and National Resident Population by Monthly Household Income (%)
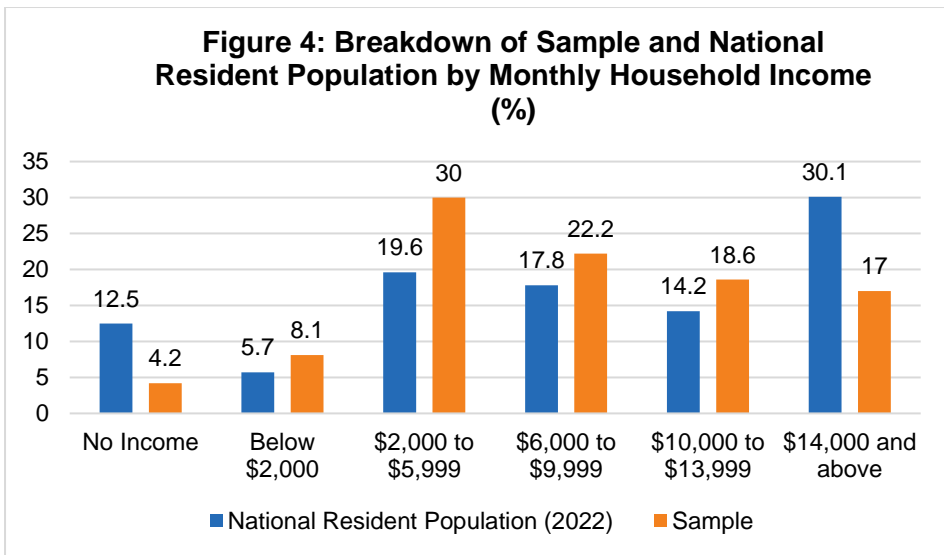
Close to three in 10 sample respondents earned a monthly household income between $2,000 to $5,999 (see Figure 4). Another one-fifth (22.2%) earned a monthly household income between $6,000 to $9,999 while about a further one-fifth (18.6%) earned between $10,000 to $13,999. For household income, 17% indicated that their monthly household income was $14,000 and above, while a further 8.1% indicated a monthly household income below $2,000. A small proportion of the sample (4.2%) reported no monthly household income at all.

This distribution differs from that of the national resident population in 2022 as the resident population recorded a greater proportion of residents in the "$14,000 and above" and "no income" categories as well as a lower

proportion of residents in the "$2,000 to $5,999", "$6,000 to $9,999" and "$10,000 to $13,999" categories (see Figure 4). However, the proportion of those in the "below $2,000" category (5.7%) do not differ greatly from that of the sample (8.1%) (see Figure 4).

Figure 5: Breakdown of Sample and National Resident Population by Highest Educational Qualification Attained (%)
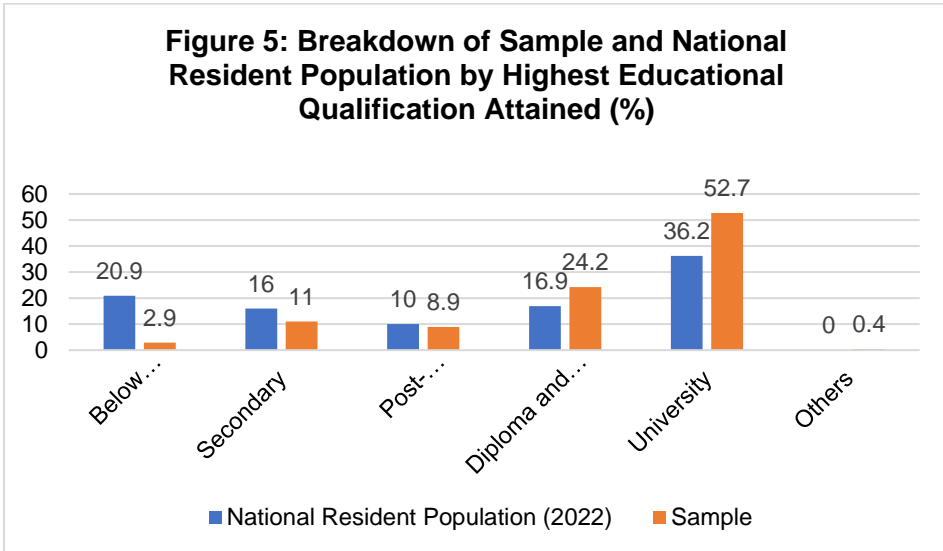
About half of the sample (52.7%) indicated that a University degree was their highest educational qualification attained. Close to one-quarter (24.2%) attained at least a diploma or professional qualification while a further 11%, 8.9% and 2.9% reported that their highest educational qualification was at the post-secondary (non-tertiary) level, the secondary level and the below secondary level, respectively. 0.4% of the sample fell into the "Others" category.

This distribution differs from that of the national resident population in 2022 as the resident population recorded a greater proportion of residents in the "below secondary" and "secondary" categories as well as a lower proportion of residents in the "diploma and professional qualification" and "University" categories (see Figure 5). However, the proportion of those in the "post-secondary (non-tertiary)" category (10%) do not differ greatly from that of the sample (8.9%) (see Figure 5).

Figure 6: Breakdown of Sample and National Resident Population by Age (%)
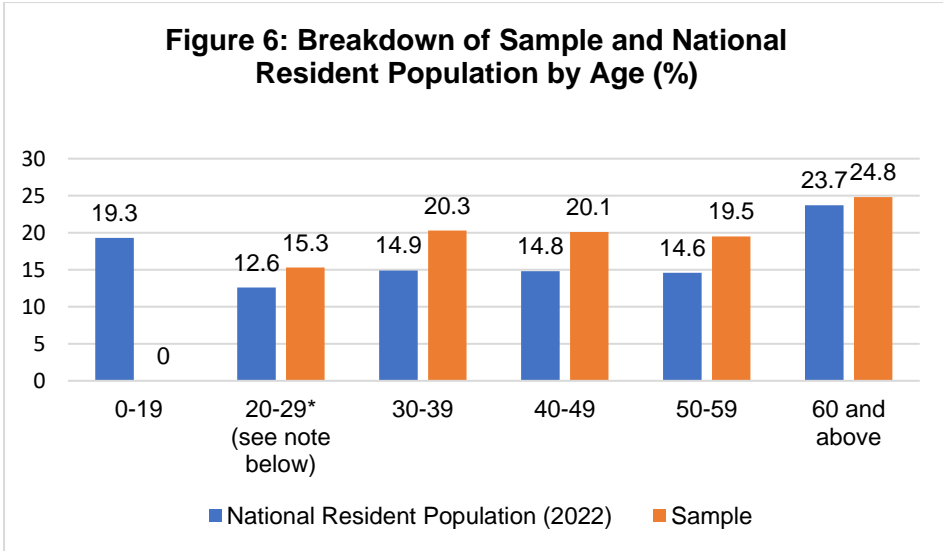
Note: Only those aged 21 and older were included in the sample

About one-quarter of the sample (24.8%) was aged 60 and above at the time of the survey (see Figure 6). Close to another one-fifth (20.3%) were aged between 30 to 39, while a further one-fifth (20.1%) was aged between 40 to 49. Yet another one-fifth (19.5%) was aged between 50 to 59 while the remaining 15.3% were aged between 21 to 29.

This distribution differs from that of the national resident population aged 20 and above in 2022 as the resident population recorded a lower proportion of residents in the "30-39", "40-49" and the "50-59" age brackets (see Figure 6). However, the proportions of those in the "20-29" (12.6%) and "60 and above" (23.7%) age brackets do not differ very greatly from those observed in the sample (i.e., 15.3% and 24.8%, respectively) (see Figure 6).

Figure 7: Breakdown of Sample and National Resident Population by Age (Males Only, %)
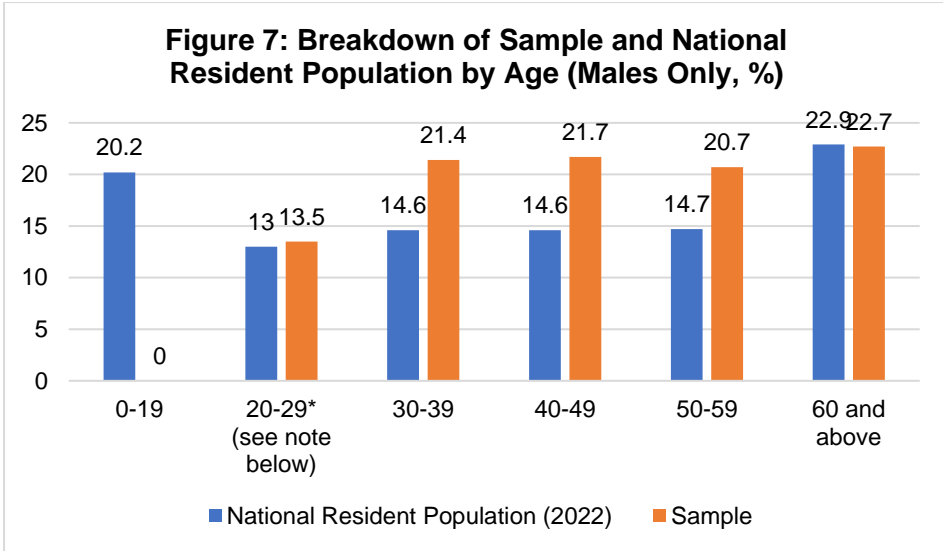
Note: Only those aged 21 and older were included in the sample

When the age distribution is compared across the categories of gender, it is evident that the age distribution of males in the sample differs from that of the national resident population of males in a similar pattern as the resident population recorded a lower proportion of male residents in the "30-39", "40-49" and the "50-59" age brackets (see Figure 7).

Once again, the proportions of those in the "20-29" (13%) and "60 and above" (22.9%) age brackets do not differ very greatly from those observed in the sample (i.e., 13.5% and 22.7%, respectively) (see Figure 7).

Figure 8: Breakdown of Sample and National Resident Population by Age (Females Only, %)
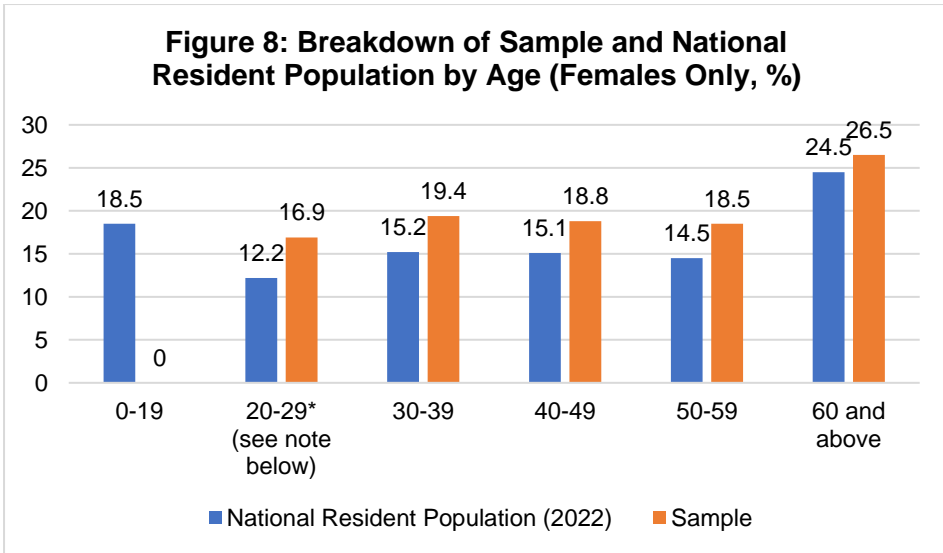
Note: Only those aged 21 and older were included in the sample

When comparing the age distribution of females between the respondents in the sample and the national resident population, it may be observed that the differences across the "30-39", "40-49" and "50-59" age brackets are not as stark as the discrepancies noted between male respondents in the sample and males in the resident population (see Figures 7 and 8).

That said, there is still a noticeably lower proportion of females in the resident population in 2022 across the "30-39", "40-49" and "50-59" age brackets than what is observed among female members of the sample (see Figure 8).

While there was a similar proportion of males in the sample and the resident population in the "20-29" age bracket, there is a noticeably lower proportion of females in the resident population aged between 20 and 29 (12.2%) than what is recorded among female members of the sample (16.9%) (see Figures 7 and 8).

However, the proportion of females in the "60 and above" age bracket did not differ very greatly across the resident population (24.5%) and the sample (26.5%) (see Figure 8).

1.5 ANALYTICAL FRAMEWORK AND METHODOLOGY

1.5.1 Survey Design and Administration

Participants of this study completed a 20-minute, online, English-language survey. Prospective respondents were first directed to a written explanation of the study and asked to indicate their consent to participate before commencing the survey. In total, the survey comprises of nine sections which include a range of question items addressing disability issues on top of those collecting relevant socio-demographic information (please refer to Annex 2 to view the survey in its entirety).

1.5.1.1 Demographic Information

This section collects participants' demographic information[98]. Specifically, 10 question items were included to gather the following data:

a) Citizenship status
b) Age
c) Gender
d) Race
e) Religion
f) Educational qualifications
g) Housing Type
h) Monthly Household Income
i) Monthly Personal Income
j) Experience of disability (self-reported)

1.5.1.2 Frequency of Contact

The second section of the survey measures the regularity with which participants encounter people with disabilities over the course of their everyday lives[99]. Specifically, participants are asked if they have "regular contact" with persons who have different disabilities, such as those with:

a) physical disability
b) deafness or hardness-of-hearing
c) blindness or visual impairment
d) muteness

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[98] This section includes question items 1-10 (please refer to the complete list of question items in Annex 2 for greater detail).
[99] This section includes question items 11a-11j (please refer to the complete list of question items in Annex 2 for greater detail).

e) intellectual disability

f) autism

g) cerebral palsy

h) learning disabilities (like ADHD or dyslexia)

i) complications arising from stoke

Response options include "No, never", "No regular contact, but sometimes meet" and "Yes, have regular contact". Those who indicate the latter are then asked to further indicate whether they have regular contact with persons from these categories as their family member, classmate, colleague, or friend. Based on past international and local research[100,101,102,103,104,105], it is expected for those with a higher frequency of contact with persons with disabilities — especially as family members — to be the most likely to express positive attitudes and support towards such persons.

1.5.1.2.1 Conceptual Significance

The positive impact that contact has on attitudes towards persons with disability is a phenomenon that has been explained through the disconfirmation of negative stereotypes[106] and the improved understanding of disability[107] which may result through engaging in social

[100] Barr, J. J., & Bracchitta, K. (2008). Effects of Contact With Individuals With Disabilities: Positive Attitudes and Majoring in Education. *The Journal of Psychology*, *142*(3), 225–244. https://doi.org/10.3200/JRLP.142.3.225-244

[101] Huskin, P. R., Reiser-Robbins, C., & Kwon, S. (2018). Attitudes of Undergraduate Students Toward Persons With Disabilities: Exploring Effects of Contact Experience on Social Distance Across Ten Disability Types. *Rehabilitation Counseling Bulletin*, *62*(1), 53–63.

[102] Morin, D., Rivard, M., Crocker, A. G., Boursier, C. P., & Caron, J. (2013). Public attitudes towards intellectual disability: A multidimensional perspective: Attitudes on intellectual disabilities. *Journal of Intellectual Disability Research*, *57*(3), 279–292. https://doi.org/10.1111/jir.12008

[103] Ouellette-Kuntz, H., Burge, P., Brown, H. K., & Arsenault, E. (2010). Public Attitudes Towards Individuals with Intellectual Disabilities as Measured by the Concept of Social Distance. *Journal of Applied Research in Intellectual Disabilities*, *23*(2), 132–142. https://doi.org/10.1111/j.1468-3148.2009.00514.x

[104] Wang, Z., Xu, X., Han, Q., Chen, Y., Jiang, J., & Ni, G.-X. (2021). Factors associated with public attitudes towards persons with disabilities: A systematic review. *BMC Public Health*, *21*(1), 1058. https://doi.org/10.1186/s12889-021-11139-3

[105] *Understanding the quality of life of adults with disabilities*. (2017). National Council of Social Service.

[106] Yuker 1994, as cited in Barr & Bracchitta, 2008.

[107] Morin et al., 2013.

interaction. In particular, "contact that is personal, intimate, and rewarding is associated with more positive attitudes toward individuals with disabilities"[108].

That said, public attitudes towards persons with disability have also been found to vary according to disability type — in particular, attitudes tend to be the most negative towards those with Intellectual Disability (ID) or Autism Spectrum Disorder (ASD)[109,110,111,112]. It has been suggested that people with ID and ASD may be viewed by members of the public to exhibit unpredictable social behaviour, due to a lack of knowledge about ID and ASD[113,114]. As such, they may be more easily perceived as threatening or difficult to communicate and interact with. Such perceptions could then lead to feelings of discomfort and culminate in more negative attitudes. In contrast, attitudes towards persons with physical disability have been found to be more positive[115,116,117]. Extrapolating from research on intellectual disabilities, this may be because persons with physical disabilities are perceived as easier to communicate and interact with.

Given this notable difference, however, in public attitudes according to disability type, it is imperative for question items in the survey to distinguish between persons of different disabilities when seeking to better understand public attitudes. Thus, all question items in Sections 2, 3 and 4 make a distinction between different types of disabilities when collecting participant responses.

1.5.1.3 Social Distance

The third section of the survey asks participants to indicate how comfortable they would be with (a) making friends with persons with disabilities and with (b) having such persons as colleagues[118]. In rating

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[108] Yuker 1994, as cited in Barr & Bracchitta, 2008, p.227.
[109] Wang et al., 2021.
[110] Huskin et al., 2018.
[111] Darawsheh, 2022.
[112] *Understanding the Quality of Life of Adults with Disabilities*, 2017.
[113] Wang et al., 2021.
[114] Morin et al., 2013.
[115] Huskin et al., 2018.
[116] Darawsheh, 2022.
[117] Understanding the Quality of Life of Adults with Disabilities, 2017.
[118] This section includes question items 12-13 (please refer to the complete list of question items in Annex 2 for greater detail).

their comfort, participants were asked to consider persons with nine different types of disability in turn — these categories are the same as those outlined in the preceding section.

1.5.3.1 Conceptual Significance

The concept of social distance helps to further capture public perceptions of people with disability as a measure of one's willingness to "take part in relationships of varying degrees of intimacy with a person who has a stigmatised identity"[119] such as a person with disability in contemporary Singapore.

1.5.1.4 Views on Social Interaction

In section 4, participants are shown four vignettes describing various scenarios where they or their family members might encounter other members of the public[120]. For each scenario, participants are asked to rate how comfortable they would feel if those they encountered were persons with different disabilities.

To a large extent, the categories of disability type participants are asked to consider follow those previously specified in preceding sections. There are a few minor changes, however, for response options for scenarios involving children and students — in these cases, the category "stroke survivor" was removed. Additional response options were also included for the scenario involving students — the categories "those with poor motivation for studying" and "those with disruptive tendencies in class" were added on to provide points of comparison.

The remaining questions in this section ask participants if they would have any concerns when interacting with persons with disabilities in professional or social settings[121]. Response options include "No, I would not have any concerns" and "Yes, I would have some concerns". Those selecting the latter are then further prompted to indicate their concerns — they may choose from a drop-down list with options such as "I do not know

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[119] Ouellette-Kuntz et al., 2010, p. 133.
[120] The vignettes in this section are presented in question items 14-17 (please refer to the complete list of question items in Annex 2 for greater detail).
[121] These question items are numbered 18-20 (please refer to the complete list of question items in Annex 2 for greater detail).

how to respond if PWDs require assistance" or write their own answer by choosing "Others (please specify)".

1.5.1.4.1 Conceptual Significance

All the question items in this section correspond to a specific theme or life domain — in total, the domains explored include those of education, employment and the shared use of public space. This distinction is made because previous research in Singapore has shown that public attitudes can vary depending on situational context[122]. In particular, attitudes towards persons with disabilities were found to be least favourable in the domain of employment due to perceptions that a person's disability would make them unable to work[123]. Thus, question items in Section 4 make a distinction between different situational contexts so as to better understand how public attitudes may vary depending on such differences.

1.5.1.5 Views on Inclusion

In section 5, participants are asked to indicate the degree to which they think the Singapore government should provide services for persons with disabilities across the various domains of education, employment, residential life, social life, public space and means-testing[124].

For each domain, participants indicate the extent to which the government should intervene to provide for PWDs. More specifically, participants are invited to choose between two outcomes per domain — one which aims to meet the full needs of PWDs or an alternative which only seeks to meet more basic needs.

1.5.1.6 Symbolic Ableism Scale

In this section, participants are asked to rate a series of 13 statements on a 7-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree"[125]. The statements have been adapted from the Symbolic Ableism Scale (SAS) by Friedman and Awsumb (2019) which measures

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[122] Understanding the Quality of Life of Adults with Disabilities, 2017.
[123] Understanding the Quality of Life of Adults with Disabilities, 2017.
[124] This section includes question items 21-26 (please refer to the complete list of question items in Annex 2 for greater detail).
[125] This section includes question items 27-40 (please refer to the complete list of question items in Annex 2 for greater detail).

prejudice against people with disabilities in the form of ableist attitudes[126]. The full SAS scale consists of four sub-scales which aim to measure more specific attitudes and correspond to distinct themes as follows[127]:

a) *"'perception that everyone is personally responsible for their outcomes"*
   o the belief that disability can simply be overcome through hard work and that disabled individuals should be entirely responsible for their own life outcomes — here, people with disability are thought of as underserving of external support
     ▪ such beliefs are held to be indicative of ableism

b) *"recognition of continuing discrimination"*
   o the recognition that people with disabilities continue to face external structural barriers that deny them equal participation in society
     ▪ the denial of such barriers in society is held to be indicative of ableism

c) *"empathy for disabled people"*
   o expressions of empathy based on the recognition that people with disabilities are subjected to unequal treatment in society
     ▪ the withholding of empathy towards people with disabilities is held to be indicative of ableism

d) *"excessive demands"*
   o the belief that people with disabilities are demanding special favours
     ▪ such beliefs are indicative of ableism

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[126] Friedman, C., & Awsumb, J. M. (2019). The Symbolic Ableism Scale. *Review of Disability Studies: An International Journal, 15*(1), 1–20.
[127] Friedman & Awsumb, 2019.

1.5.1.6.1 Conceptual Significance

"Ableism" may be understood as the prejudiced belief that able-bodiedness is a quality that is necessary to be considered fully human[128]. As such, those holding ableist beliefs tend to view PWDs as "a diminished state of being human"[129]. Ableist attitudes have been linked to discriminatory behaviour and pose a significant challenge to goals of inclusion[130].

1.5.1.7 Public Trade-Offs

In this section, participants are presented with a series of public policy outcomes which entail greater benefits for persons with certain disabilities while also running the risk of inconveniencing other members of the public or disrupting the status quo[131]. Participants are then asked to select their most preferred policy outcome.

The aim of these question items is to better understand participants" willingness to make accommodations and accept societal changes for the goal of building a more inclusive society.

1.5.1.8 Helping Hands

In Section 8, participants are presented with four scenarios in which persons with various disabilities seem to be in need of some assistance from a member of the public[132]. Participants are asked to select how they would respond if they encountered these persons in public.

Response options include "Go up to them and see if they need help", "Leave them alone unless they request for help", and "Keep a distance". Those selecting the latter are then further prompted to explain their choice — they may choose from a drop-down list with options such as "I do not want them to feel pitied" or write their own answer by choosing "Others (please specify)".

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[128] Bogart, K. R., & Dunn, D. S. (2019). Ableism Special Issue Introduction. *Journal of Social Issues*, *75*(3), 650–664. https://doi.org/10.1111/josi.12354
[129] Campbell 2001, as cited in Bogart & Dunn, 2019, p. 651.
[130] Bogart & Dunn, 2019.
[131] This section includes question items 41-44 (please refer to the complete list of question items in Annex 2 for greater detail).
[132] This section includes question items 45-48 (please refer to the complete list of question items in Annex 2 for greater detail).

The question items in this section seek to better understand reports by people with disabilities (collected in the qualitative phase of the study) specifying that members of the public can be aloof and hesitant in offering their assistance in times of need. As such, the scenarios in this section are inspired by incidents recounted in focus group sessions by persons with disabilities during the first wave of qualitative research conducted between August 2019 and July 2020.

1.5.1.9 Disability in Singapore Society

In this section, respondents are asked to read a series of 14 statements and indicate the extent to which they agree or disagree with them[133].

These statements touch on a variety of subjects including but not limited to:

    a) life with a disability in Singapore,
    b) knowledge of disability issues,
    c) experiences with people with disabilities,
    d) the willingness to learn more about disability issues, and
    e) the government's role in fostering inclusion.

The question items in this section thus aim to capture public sentiments that can feed into better policy making and illuminate opportunities to engage the public more productively as we journey towards a more inclusive Singapore.

1.5.2 Key Measures[134]

1.5.2.1 Demographics

1.5.2.1.1 Gender
Gender is divided into two categories, "Male" and "Female".

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[133] This section includes question items 50-63 (please refer to the complete list of question items in Annex 2 for greater detail).

[134] Reliability refers to the extent to which multiple trials using the same measurement instrument produce consistent results. Reliability for composite scales in this section is measured using Cronbach's Alpha. The latter measures the extent to which a set of items are related to each other as a group. As a guide, a value of at least or close to .7 is deemed acceptable, while any value above .8 is considered good or excellent reliability. Values above .95 are too high as they indicate that some items in the measure are redundant.

1.5.2.1.2 Age

Respondents were asked for their age. For analyses, age was entered into the respective models as a continuous variable. For ease of interpretation, they were then categorised into sub-categories to demonstrate differences across age categories. The age categories are as follows: "35 and below", "36 to 50", "51 to 65", and "Above 65".

1.5.2.1.3 Educational level

Respondents were asked to report their highest educational level attained, and options included: no formal qualification/lower primary, primary, secondary, port-secondary (non-tertiary), polytechnic diploma, professional qualification and other diploma, university first degree, university post-graduate diploma/degree, and others (to specify). Educational level was then categorised into sub-categories as follows: "O Level & Below", "Post-Secondary", "Degree and Above".

1.5.2.1.4 Housing Type

Respondents were asked to report their housing type, and options included: HDB 1-room flat, HDB 2-room flat, HDB 3-room flat, HDB 4-room flat, HDB 5-room flat, HDB Executive/Mansionette, Privatised HUDC Flat, Condominium and other private apartments, terrace house, semi-detached house, bungalow/detached house, and others (to specify). Housing type was then categorised into sub-categories as follows: "HDB 1-room flat to HDB 3-room flat", "HDB 4-room flat to HDB Executive/Mansionette", "Private or landed".

1.5.2.1.5 Frequency of Contact

Summed frequency of contact is a summed measure of respondents" frequency of contact with persons with different disabilities as outlined above in section 1.5 "Analytical Framework and Methodology" (please refer to sub-heading "Frequency of Contact'). Participants who indicated they had no contact with PWDs at all were coded as "0" while those who had at least some contact were coded as "1". Those with regular contact were then coded as "2". Scores for individual question items were then summed up to derive a composite score for this measure. Ratings for the sum of frequency of contact with persons with disabilities ranged from 0

(no contact at all) to 20 (regular contact with all persons with disabilities listed).

1.5.2.1.6 Social Distance

Level of comfort with friendships with Persons with Disabilities takes the average of respondents' rating of the level of comfort felt towards friendships with PWDs, across the different types of disabilities as described in section 1.4 (please refer to sub-section 3: Social Distance). Ratings for the mean level of comfort with friendships with persons with disabilities ranged from 1 (very uncomfortable) to 6 (very comfortable).

Level of comfort with professional relationships with Persons with Disabilities takes the average of respondents' rating of the level of comfort felt towards professional relationships with PWDs, across the different types of disabilities as described in section 1.4 (please refer to sub-section: Social Distance). Ratings for the mean level of comfort with friendships with persons with disabilities ranged from 1 (very uncomfortable) to 6 (very comfortable).

Level of Comfort with Social Relationships with Persons with Disabilities takes the average of respondents' rating of the level of comfort felt towards both friendships and professional relationships with people with disabilities. Ratings for the mean level of comfort with social relationships with persons with disabilities ranged from 1 (very uncomfortable) to 6 (very comfortable).

1.5.2.1.7 Social Interaction

Degree of Comfort with Social Interactions with PWDs Across Various Settings is the sum of the total number of times respondents indicated being comfortable with social interactions with persons of different abilities/disabilities across a series of given scenarios as specified in section 1.4 (please refer to sub-section: Views on Social Interaction). Ratings for this measure ranged from 0 (not comfortable across all scenarios) to 40 (comfortable across all scenarios). A mean score was likewise computed separately for each scenario. The scenarios are (i) *having your child in the same class with students of different learning abilities*, (ii) *being an employer who is considering applicants with*

disabilities, (iii) *sharing an empty lift with a person with disability*, (iv) *having your child play with other children with disabilities*. The ratings for the sum of the total number of times respondents indicated being comfortable in each scenario ranged from 0 to 11, 0 to 10, 0 to 10, and 0 to 9, respectively[135].

Degree of Concern over Social Interactions with PWDs Across Various Settings is the sum of the total number of times respondents expressed concerns over social interactions with persons with different disabilities across professional and social settings. Ratings for this measure ranged from 3 (no concerns at all) to 6 (concerned across all settings). Separately, for each setting, a mean score was likewise computed. The settings involve (i) *working with persons with disabilities in a professional setting,* (ii) *sharing public spaces with persons with disabilities*, and (iii) *having children be in close contact with persons with disabilities*. The ratings for the sum of the total number of times respondents indicated being concerned in each setting ranged from 1 to 2 for all settings, respectively.

1.5.2.1.8 Views on Inclusion
Degree of Support for meeting the Full Needs of PWDs is the sum of the degree of support that respondents express for forms of government support which seek to meet the full needs of PWDs (as opposed to only meeting basic needs) across a variety of domains (i.e., education, employment, residential life, social life, public space and means-testing). The ratings range from 6 (strongly identify with basic needs) to 36 (strongly identify with full needs) and has a Cronbach's alpha of 0.69.

1.5.2.1.9 Public Trade-offs
Degree of Support for Inclusive Policies is the sum of the number of times respondents indicated being supportive of more inclusive policies and practices. The ratings range from 0 (not supportive of any policies listed) to 4 (supportive of all policies listed) and has a Cronbach's alpha of 0.63.

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[135] Maximum scores differ across scenarios because the number of persons with different abilities/disabilities differ for each scenario. See preceding section for more detailed description.

1.5.2.1.10 Helping Hands

Willingness to help persons with disabilities is a measure of the willingness expressed by respondents to assist persons with disabilities who seem to be in need, as in a range of given scenarios.

The ratings for this measure range from 0 (keeping a distance across all scenarios) to 16 (helping proactively across all scenarios) and has a Cronbach's alpha of 0.59.

1.5.2.1.11 Disability in Singapore Society

Perceptions of Government Support measures the degree to which respondents believe the government should do more in supporting people with disabilities. This measure is derived from six question items (question items 57–61 and 63) that ask respondents to rate the degree to which they agree or disagree with statements that have been provided.

These seven items are averaged to derive a mean score measuring respondent perceptions of government support: ratings that ranged from 1 (the government should do a lot less for disability in Singapore) to 5 (the government should do a lot more for disability in Singapore). This measure has a Cronbach's alpha of 0.90.

1.5.3 Analysis and Methods

Descriptive analyses were first conducted to provide an overview of the attitudes expressed by participants and highlight relevant areas of concern.

Hierarchical linear regression analyses were then conducted to investigate if demographics, social networks, and individual attitudes and perceptions were predictive of:

   a) levels of comfort with friendships with PWDs;
   b) levels of comfort with professional relationships with PWDs;
   c) levels of comfort with social interactions with PWDs across various settings;
   d) levels of concern over social interactions with PWDs across various settings;
   e) the willingness to help PWDs who seem to be in need;

f)   levels of support for policy outcomes which seek to meet the full needs of PWDs;

g)   levels of support for inclusive policies; and,

h)   perceptions of government support measures.

The chapters that follow will detail the results of these analyses before concluding with a discussion of the key findings and relevant recommendations for Singapore's policymakers.

Where relevant, the results of the quantitative analyses will be compared with the findings of qualitative data elicited through the broader study. The qualitative phase was conducted between the periods August 2019–July 2020 and May 2022–July 2022 with a total sample of 216 respondents. 36 focus group discussions and 27 in-depth interviews were held with 40 persons of various disabilities, 60 caregivers and 116 professionals employed in the sector.

Respondents of the qualitative phase were asked to express their perspectives on the progress, needs and gaps of Singapore's disability sector with special attention given to the themes of education, employment, independent living, assistive technology, caregiver support and inclusion in society.

Ultimately, the comparison of quantitative and qualitative data allows us to build a more nuanced understanding of the state of disability-related issues in Singapore.

Chapter 2

Social Distance

CHAPTER 2: SOCIAL DISTANCE

2.1 OVERVIEW

Respondents were asked about their levels of comfort in building and/or maintaining a social and professional relationship with persons with disabilities. A list of different types of disabilities were presented to respondents, who were then asked to rate how comfortable they would be to engage with someone from each of the groups as a friend or colleague, respectively.

For ease of analysis, the different types of disabilities are categorised into sub-categories where applicable. **Persons with sensory disabilities** include persons who are hard-of-hearing, visually impaired, or mute. **Persons with developmental disabilities** include persons who have autism, down syndrome or other type of intellectual disability. **Persons with learning disabilities** include those who have ADD/ADHD or dyslexia.

For comparability, the minimum score is 1, which denotes being very uncomfortable, and the maximum score is 6, which denotes being very comfortable. Scores for these question items ranged between 3 (slightly uncomfortable) to 4 (slightly comfortable).

2.2 VIEWS ON FRIENDSHIPS WITH PWDS

2.2.1 Respondents are most comfortable with friendships with persons with physical disabilities or stroke survivors; they are the least comfortable with friendships with persons with cerebral palsy or developmental disabilities

Overall, respondents are the most comfortable with friendships with persons with physical disabilities (mean score = 4.33) and stroke survivors (mean score = 4.32) (see Table 1 below). However, they are least comfortable with friendships with persons with cerebral palsy (mean score = 3.93) and persons with developmental disabilities (mean score = 3.97).

Here, it is important to note that the scores do not differ greatly across disability categories. While there do seem to be some slight variations,

scores range from 4.33 (slightly comfortable) to 3.93 (slightly uncomfortable) and thus do not suggest strong sentiments of support or aversion for persons with any particular disability. Indeed, the mean score for this question was 4.18, and the median score was 4.20, indicating a slight level of comfort with friendships with people with disabilities overall.

Table 1: Level of Comfort with Friendships with PWDs, across Disability Type

	Comfort Level engaging with persons with physical disabilities	Comfort level engaging with persons with sensory disabilities	Comfort level engaging with persons with developmental disabilities	Comfort level engaging with persons with learning disabilities	Comfort level engaging with persons with cerebral palsy	Comfort level engaging with stroke survivors with resulting disabling conditions
Mean	4.33	4.30	3.97	4.19	3.93	4.32
Median	4	4.33	4.00	4.00	4.00	4.00

2.2.2 Respondents with a low frequency of contact with persons with disabilities are more likely to feel uncomfortable with friendships with such persons

Respondents reported different levels of prior experience with persons with different disabilities — while approximately 23% of the sample had no contact at all with persons with disabilities, others surveyed had experienced at least intermittent contact with someone with a disability.

Ratings for the frequency of contact with persons with disabilities ranged from 0 (no contact at all) to 20 (regular contact with all persons with disabilities listed). Responses from 0 to 2 indicate no contact or a low frequency of contact (39.4% of the sample); ratings from 3 to 6 indicate moderate frequency of contact (30.3% of the sample); and ratings from 7 to 20 indicate a high frequency of contact (30.4% of the sample) (see Figure 9 below).
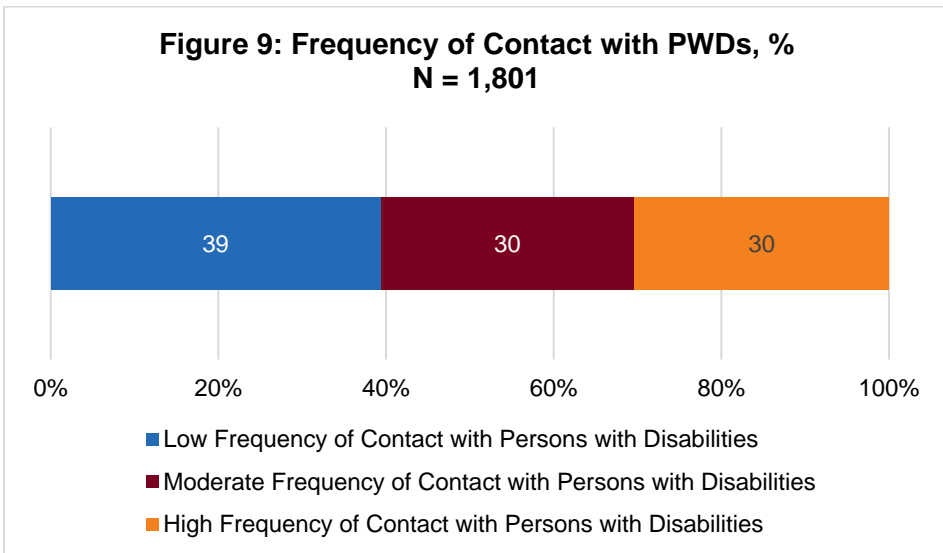
Figure 9: Frequency of Contact with PWDs, %
N = 1,801

When respondents reporting different frequencies of contact are compared, it is evident that those with a low frequency of contact are much more likely to report low levels of comfort with friendships with PWDs (see Table 2).

To illustrate, 46.3% of those with a low frequency of contact also report low levels of comfort, whereas the same is reported by only 32.7% of those with a moderate frequency of contact and just 26% of those with a high frequency of contact (see Table 2).

Table 2: Level of Comfort with Friendships with PWDs, by Frequency of Contact with PWDs

Frequency of Contact with Persons with Disabilities *N = 1801*	Level of comfort with friendships with PWDs[136] (%)			Total (%)
	Low level of comfort	Moderate level of comfort	High level of comfort	
Low frequency of contact	46.3	31.2	22.6	100.0
Moderate frequency of contact	32.7	29.4	38.0	100.0
High frequency of contact	26.0	33.1	41.0	100.0

2.2.3 Attitudinal factors — followed by social networks and education differences — are the most powerful predictors of feelings of comfort towards friendships with PWDs

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with feelings of comfort towards friendships with PWDs.

Overall, results show that attitudinal factors are the most powerful predictors of feelings of comfort towards friendships with PWDs.

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[136] Ratings for levels of comfort with interacting with persons with disabilities as a friend ranged from 1 (not comfortable at all) to 6 (very comfortable with all persons with disabilities). Ratings of 0 to 3.8 indicate low level of comfort; 3.9 to 4.7, moderate level of comfort; and 4.8 to 6, high level of comfort. The mean score for this question was 4.18, and the median score was 4.20, indicating a moderate level of comfort with friendships with people with disabilities.

Respondents who express greater concern at the prospect of sharing public spaces with PWDs are less likely to be comfortable with friendships with PWDs. On the other hand, respondents who express greater interest in learning how to support PWDs are more likely to be comfortable with such friendships.

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

2.3 VIEWS ON PROFESSIONAL RELATIONSHIPS WITH PWDS

2.3.1 Respondents are most comfortable with professional relationships with persons with physical or sensory disabilities; they are the least comfortable with professional relationships with persons with cerebral palsy or developmental disabilities

Overall, respondents are most comfortable with professional relationships with persons with physical disabilities (mean score = 4.38) and sensory disabilities (mean score = 4.30) (see Table 5 below). However, they are least comfortable with professional relationships with persons with cerebral palsy (mean score = 3.99) and persons with developmental disabilities (mean score = 4.02).

Here, it is important to note that the scores do not differ greatly across disability categories. While there do seem to be some slight variations, scores range from 4.38 (slightly comfortable) to 3.99 (slightly uncomfortable) and thus do not suggest strong sentiments of support or aversion for persons with any particular disability. Indeed, the mean score for this question was 4.19, and the median score was 4.20, indicating a slight level of comfort with professional relationships with people with disabilities overall.

Table 3: Level of Comfort with Professional Relationships with PWDs, across Disability Type

	Comfort Level engaging with persons with physical disabilities	Comfort level engaging with persons with sensory disabilities	Comfort level engaging with persons with developmental disabilities	Comfort level engaging with persons with learning disabilities	Comfort level engaging with persons with cerebral palsy	Comfort level engaging with stroke survivors with resulting disabling conditions
Mean	4.38	4.30	4.02	4.19	3.99	4.24
Median	5.00	4.33	4.00	4.00	4.00	4.00

2.3.2 Respondents with a low frequency of contact with persons with disabilities are more likely to feel uncomfortable with professional relationships with such persons

When respondents reporting different frequencies of contact are compared, it is evident that those with a low frequency of contact are much more likely to report low levels of comfort with professional relationships with PWDs (see Table 6).

For instance, 43.6% of those with a low frequency of contact also report low levels of comfort, whereas the same is reported by only 32.7% of those with a moderate frequency of contact and just 27.1% of those with a high frequency of contact (see Table 6).

Table 4: Level of Comfort with Professional Relationships with PWDs, by Frequency of Contact with PWDs

Frequency of Contact with Persons with Disabilities N = 1801	Level of comfort with professional relationships with PWDs[137] (%)			Total (%)
	Low level of comfort	Moderate level of comfort	High level of comfort	
Low frequency of contact	43.6	32.2	24.3	100.0
Moderate frequency of contact	32.7	31.2	36.1	100.0
High frequency of contact	27.1	35.6	37.3	100.0

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[137] Ratings for levels of comfort with interacting with persons with disabilities as a friend ranged from 1 (not comfortable at all) to 6 (very comfortable with all persons with disabilities). Ratings of 0 to 3.8 indicate low level of comfort; 3.9 to 4.8, moderate level of comfort; and 4.9 to 6, high level of comfort. The mean score for this question was 4.19, and the median score was 4.20, indicating a moderate level of comfort with professional relationships with people with disabilities overall.

2.3.3 Attitudinal factors — followed by respondents' social networks — are the most powerful predictors of feelings of comfort towards professional relationships with PWDs

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with feelings of comfort towards professional relationships with PWDs.

Overall, results show that attitudinal factors are the most powerful predictors of feelings of comfort towards professional relationships with PWDs. Respondents who express greater concern at the thought of working with PWDs in a professional setting are less likely to be comfortable with professional relationships with PWDs. On the other hand, respondents who (a) agree more strongly that employers should accommodate PWDs in workplaces and who (b) express greater interest in learning how to support PWDs are more likely to be comfortable with such relationships.

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

2.4 COMPARISON WITH QUALITATIVE DATA

The quantitative results show that there is a tendency amongst respondents to express a higher level of preference for friendships and professional relationships with persons who have physical and sensory disabilities while friendships and professional relationships with persons who have cerebral palsy or developmental disabilities are ranked as less preferable.

This trend is corroborated by the qualitative findings to a certain extent as many professionals working in Singapore's disability sector pointed out that there are varied misconceptions of persons with developmental disabilities in particular as many in the population are unaware of how to interact with such persons:

> ...yes, maybe it's becoming a lot more accessible for persons with physical, [and] visual impairments. ... but

the…the unseen ones, [like] autism for example, the very wide spectrum [sic], it's very difficult for people to understand. Intellectual impairment, you know, It's very difficult. Yeah, they don't understand, ...
— "Kelly", working in a senior management role running programmes for the disabled

I had a personal experience in the MRT. It was a crowded train ... then suddenly someone started to recite the *Lord of the Rings* passage and suddenly you start to see people backing away ... she was in the uniform so I know that she was from a special school but this is how the public reacts ... They will just move away thinking that is this someone with mental illness…
— "Louise", plans programmes for PWDs

I think there's also one thing that we have probably done well in terms of visible disability, but the invisible disabilities may not be doing so well [sic]. The awareness, I think, we have been seeing a lot of videos on Facebook and all that, but sometimes we do see that this person have special needs and things like that [sic], but they have been put in a negative connotation and doing things that are not so nice ..., although I would say we have done a lot more compared to the past.
— "Bethany", management staff providing therapy for people with physical disabilities

At the same time, respondents who were part of the qualitative phase emphasised the importance of meeting the social needs of PWDs and the significance that social relationships have more generally on one's quality of life:

…like, any young person, you talk about marriage. She talked [sic] "I want to get married, Dad, I want to get married"...People with disability, going forward, can be very lonely people. Because you find your friends get lesser and lesser, unless enough investment of time is being put in for

them to connect with other people (original emphasis). ... The social aspect of it, for them to integrate with society, for them to integrate with friends.

... when children with disability join the mainstream, it's a very lonely thing, ... Intellectually they are not so fast, so they can't play. ... so it can be very lonely...although intellectually they may not be there but then [in] other areas, they [are] just as normal as everybody else. You cannot say emotionally they are disabled, they are not, they feel! Like, this one wants to get married!
— "Ryan", father and caregiver of an adult daughter with intellectual disability

I think what Covid really messed up for me was my ability to interact with my colleagues and I think that is severely, that is, detrimental to the quality of my work because I really work best when I am around other people. ... When I am alone, I start getting depressed, I can't focus on anything. I [am] just like moping a lot and getting very distracted...I can't stand it. I miss my colleagues.
— "Lisa", a content writer with multiple disabilities, 26 years old

When he lost his vision 4 years ago, the first question he asked ... was this: how am I going to get a girlfriend? How am I going to start a family? How am I going to have children? That's the first — he's only 16, and that was one of his frustrations already at that time.
— "Benjamin", father and a caregiver of an adult son with acquired visual impairment

See, the ASD people don't make friends so easily [sic]. If friendship is not the same, not happening at the same level and intensity for them, then they are going to be lonely?
— "Charlene", mother and caregiver of an adult daughter with ASD

Given how essential social relationships are for a good quality of life, it will be imperative to tackle social prejudice and stereotypes that hinder PWDs from realising their social needs and aspirations. However, as the survey results indicate, such measures will require a calibrated approach as there appear to be different levels of prejudice towards those with different disabilities. As respondents tend to demonstrate the lowest preference for relationships with persons with cerebral palsy and developmental disabilities, special care should be given to address these perceptions.

Chapter 3

Views on Social Interaction

CHAPTER 3: VIEWS ON SOCIAL INTERACTION

3.1 SIMULATED SCENARIOS: AN OVERVIEW

3.1.1 When considering all four scenarios, respondents are most likely to be comfortable with interactions with persons with physical disabilities and least likely to be comfortable with those involving persons with cerebral palsy

To better understand respondents' willingness to engage in social interactions with people with disabilities, a series of four hypothetical scenarios were provided to gauge their level of comfort with such interactions across three life domains: those of education, employment and sharing public space.

The four scenarios are as follows:

a) Scenario 1 — Education (Question item 14):

o *"Scenario 1: It is the start of the school year. You realise that your child is in a class with students of different learning abilities. Which of the following groups of students would you be comfortable to have in a class with your child? Please select all those you would be comfortable with."*

b) Scenario 2 — Employment (Question item 15):

o *"Scenario 2: You are an employer who has to hire suitable employees for various positions in your company. You have come across a range of applicants with disabilities. They have demonstrated their ability to perform the available jobs, but will need some accommodation, which are supported by government grants (e.g., specially designed workspaces etc). Which of the following persons would you be comfortable to hire? Please select all those you would be comfortable with."*

c)   <u>Scenario 3 — Public Space (Question item 16):</u>
o   *"Scenario 3: You have just entered an empty lift when another person entered. Which of the following persons would you be comfortable to share such a space with? Please select all those you would be comfortable with."*

d)   <u>Scenario 4 — Public Space (Question item 17):</u>
o   *"Scenario 4: Your child was playing alone at the playground when another child came over and indicated that he/she wanted to play together. Which of the following children would you be comfortable to let your child play with? Please select all those you would be comfortable with."*

To a large extent, the categories of disability type participants are asked to consider follow those previously specified in preceding sections. There are a few minor changes, however, for response options for scenarios involving children and students — in these cases, the category "stroke survivor" was removed. Additional response options were also included for the scenario involving students (Scenario 1) — the categories "those with poor motivation for studying" and "those with disruptive tendencies in class" were added on to provide points of comparison.

To better compare the degree of comfort expressed by respondents across the four scenarios, response categories were compared to ascertain the number of times respondents selected those of this category as "comfortable" to have social interactions with. New composite measures were created to make this comparison easier — for most response categories (i.e., people with physical disabilities; people with sensory disabilities etc.), there are four possible scores which may be attained by respondents ranging from "0"–"4" (see Figure 10 below).

Respondents with a score of "0" have not selected persons from this response category (i.e., people with physical disabilities; people with sensory disabilities etc.) as "comfortable" to have social interactions with in any of the four scenarios specified (refer to Figure 10 below). Conversely, respondents with a score of "4" have indicated that they would

be "comfortable" to interact with persons from this response category in all four given scenarios. Those who each a score in between (i.e., "1", "2" or "3") have indicated that they would be "comfortable" interacting with persons from this response category at least in some scenarios.

However, as the response categories "students with disruptive tendencies in class" and "students with poor motivation for studying" were only offered once in Scenario 1, the possible range of scores in these cases is only "0–1". Likewise, as the response category "stroke survivor with disabling conditions" is only offered twice in Scenarios 2 and 3, the possible range of scores in this case is "0–2".

All in all, 5.9% of respondents in the sample indicated that they would not be comfortable with any interactions with any persons specified across all four scenarios. When considering the rest of the sample, it is evident that respondents are most likely to record a score of "4" when it comes to persons with physical disabilities. Close to two in five (40.4%) reported a score of "4" for this response category. Scores of "3", "2", "1" and "0" were reported by 15.6%, 12.1%, 10.6%, and 21.4% of respondents, respectively. Conversely, respondents were least likely to record a score of "4" when it came to persons with cerebral palsy — only 16.3% of the sample reported such a score in this case. Meanwhile, scores of "3", "2", "1" and "0" were reported by 11.9%, 14.4%, 17.4%, and 40% of respondents, respectively.

Thus, when comparing response categories that have been included consistently in all four scenarios, respondents are most likely to be comfortable with interactions with persons with physical disabilities and least likely to be comfortable with those involving persons with cerebral palsy.

**Figure 10: Sum of Whether One is Comfortable with Engaging
with PWDs over Various Settings, %
N = 1,801**

Category	0	1	2	3	4
Persons with Cerebral Palsy	40	17	14	12	16
Persons with Dyslexia	37	13	12	12	26
Persons with ADD/ADHD	36	18	15	13	18
Persons with Autism	33	17	16	14	20
Persons with Down Syndrome or…	31	16	18	15	20
Persons with Blindness	23	16	18	19	24
Persons with Physical Disabilities	21	11	12	16	40
Persons with Muteness	21	15	16	17	32
Persons with Deafness	19	13	17	17	34
Stroke Survivors with Resulting…	42	26	33		
Persons with Disruptive Tendencies…	87	13			
Persons with Poor Motivation to Study	70	30			

Legend: ■0 ■1 ■2 ■3 ■4

3.2 SCENARIO 1: EDUCATION

3.2.1 In Scenario 1, respondents are most likely to be comfortable with students with physical disabilities and least likely to be comfortable with students with disruptive tendencies in class

Scenario 1: It is the start of the school year. You realise that your child is in a class with students of different learning abilities. Which of the following groups of students would you be comfortable to have in a class with your child? Please select all those you would be comfortable with.

Some respondents (12.2%) indicated that they would not be comfortable with their children being in the same class with students from any of the groups listed.

When considering the rest of the sample, it is evident that respondents are most likely to be comfortable with students with physical disabilities (see Figure 11 below). Close to three in five (59.8%) indicate that they would be comfortable in this case. Conversely, respondents are least likely to be comfortable with students with disruptive tendencies in class — only 13.4% of the sample indicated they would be comfortable if their child was in a class with such students.

Figure 11: Level of Comfort in Scenario 1, %
N = 1,801

	Not comfortable	Comfortable
Students with Physical Disability	40	60
Students with Deafness	48	52
Students with Muteness	52	48
Stydents with Blindness	53	47
Students with Dyslexia	60	41
Students with Autism	64	37
Students with Down Syndrome or…	65	36
Students with ADD/ADHD	68	33
Students with Cerebral Palsy	69	31
Students with Poor Motivation for…	70	30
Students with Disruptive Tendencies…	87	13

3.3 SCENARIO 2: EMPLOYMENT

3.3.1 In Scenario 2, respondents are most comfortable with hiring persons with physical disabilities and least comfortable hiring persons with cerebral palsy

Scenario 2: You are an employer who has to hire suitable employees for various positions in your company. You have come across a range of applicants with disabilities. They have demonstrated their ability to perform the available jobs, but will need some accommodation, which are supported by government grants (e.g., specially designed workspaces etc). Which of the following persons would you be comfortable to hire? Please select all those you would be comfortable with.

Some respondents (11.8%) indicated that they would not be comfortable hiring any persons with disabilities.

When considering the rest of the sample, it is evident that respondents are most comfortable hiring persons with physical disabilities (see Figure 12 below). To elaborate, slightly more than half of the sample (56.5%) indicate that they would be comfortable in this case. Conversely, respondents are least comfortable hiring persons with cerebral palsy — only about a quarter of the sample (25.3%) indicate being comfortable to do so.

Figure 12: Level of Comfort in Scenario 2, %
N = 1,801
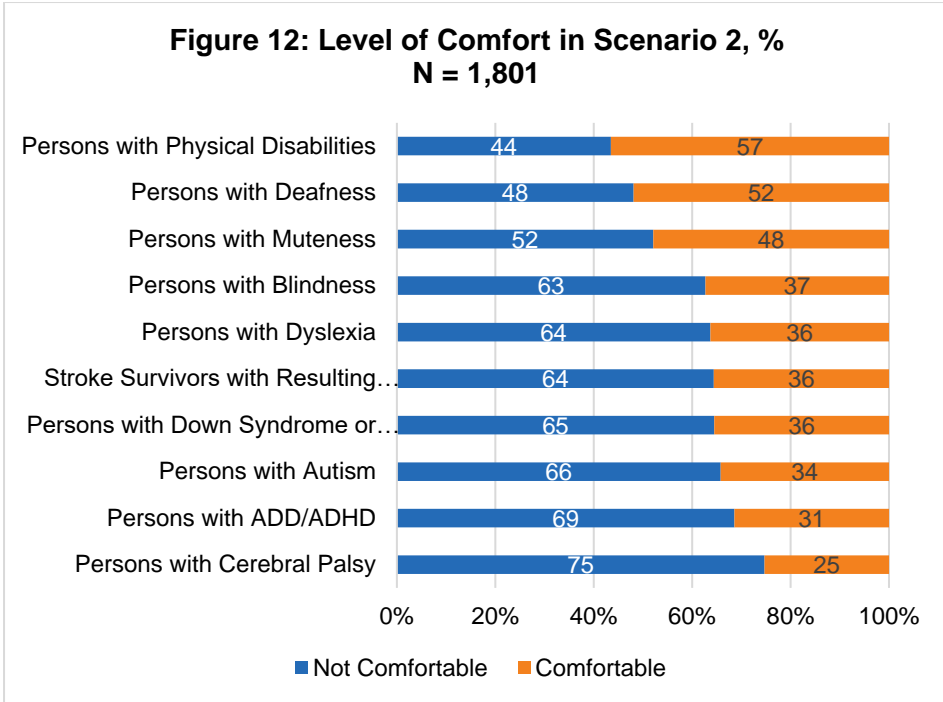
3.4 SCENARIO 3: PUBLIC SPACE (SHARING AN ELEVATOR)

3.4.1 In Scenario 3, respondents are most comfortable sharing an empty lift with persons who are d/Deaf or hard-of-hearing and the least comfortable doing so with persons who have ADD/ADHD or cerebral palsy

Scenario 3: You have just entered an empty lift when another person entered. Which of the following persons would you be comfortable to share such a space with? Please select all those you would be comfortable with.

Some respondents (9.4%) indicated that they would not be comfortable with sharing an empty lift with any persons with disabilities.

When considering the rest of the sample, it is evident that respondents are most likely to be comfortable with d/Deaf persons or persons who are hard-of-hearing (see Figure 13 below). Close to seven in 10 (69.8%) indicate that they would be comfortable in this case. Conversely,

respondents are least likely to be comfortable with persons with ADD/ADHD or cerebral palsy — only about half of the sample (50.8% and 50.9%, respectively) indicate that they would be comfortable in such a situation.

Figure 13: Level of Comfort in Scenario 3, %
N = 1,801

Category	Not Comfortable	Comfortable
Persons with Physical Disabilities	33	68
Persons with Deafness	30	70
Persons with Blindness	33	67
Persons with Muteness	33	67
Persons with Down Syndrome or…	44	56
Stroke Survivors with Resulting…	45	55
Persons with Dyslexia	46	54
Persons with Autism	46	54
Persons with Cerebral Palsy	49	51
Persons with ADD/ADHD	49	51

3.5 SCENARIO 4: PUBLIC SPACE (USE OF PLAYGROUNDS)

3.5.1 In Scenario 4, respondents are the most comfortable letting their child play with a child who is d/Deaf or hard-of-hearing and the least comfortable doing so with a child who has cerebral palsy

Scenario 4: Your child was playing alone at the playground when another child came over and indicated that he/she wanted to play together. Which of the following children would you be comfortable to let your child play with? Please select all those you would be comfortable with.

Some respondents (12.6%) indicated that they would not be comfortable letting their child play with any children who have disabilities.

When considering the rest of the sample, it is evident that respondents are the most comfortable letting their child play with a child who is d/Deaf or hard-of-hearing (see Figure 14 below). More than three in five (62.5%) indicate that they would be comfortable in such a case. Conversely, respondents are least comfortable letting their child play with a child who has cerebral palsy — only two in five (42.1%) indicate that they would be comfortable in this scenario.

Figure 14: Level of Comfort in Scenario 4, %
N = 1,801

Category	Not Comfortable	Comfortable
Persons with Deafness	38	63
Persons with Muteness	40	60
Persons with Physical Disabilities	41	59
Persons with Blindness	47	53
Persons with Down Syndrome or…	50	50
Persons with Dyslexia	53	47
Persons with Autism	55	46
Persons with ADD/ADHD	58	42
Persons with Cerebral Palsy	60	40
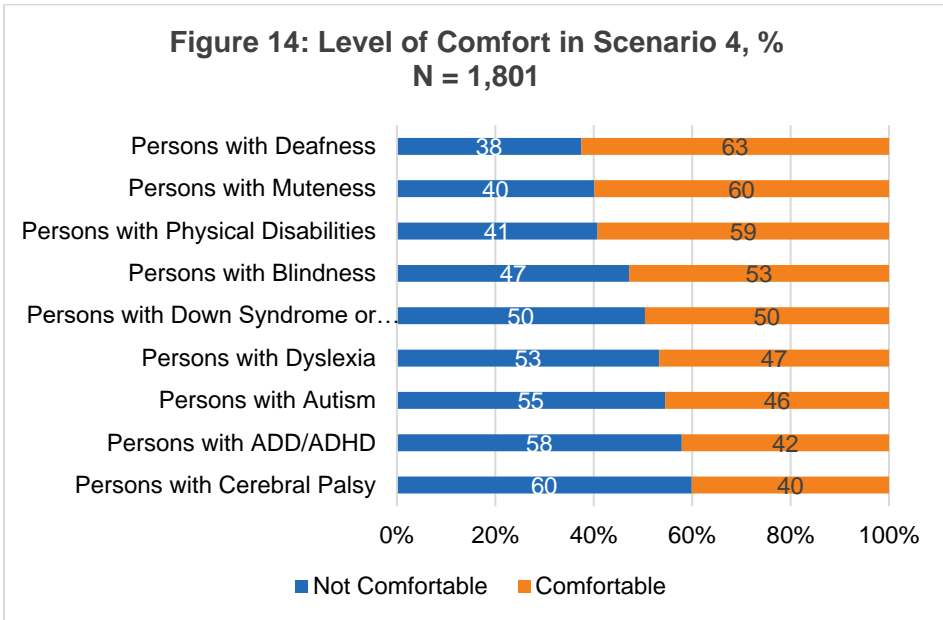
3.6 GENDER DIFFERENCES IN RESPONSE TO SCENARIOS

3.6.1 Female respondents are more likely to be comfortable with social interactions with people with disabilities than their male counterparts

Female respondents are more likely to report being very comfortable with interactions with persons with disabilities (34.1%) across the given scenarios when compared with their male counterparts (28.8%) (see Table 9 below).

In the regression analyses that follow (see section 3.7 below), this difference is investigated further to ascertain if gender is a predictor of

feelings of comfort towards social interactions with people with disabilities even after the effects of other variables are controlled for.

Table 5: Degree of Comfort with Social Interactions with PWDs, by Gender

Gender *N = 1801*	Degree of Comfort with Social Interactions with Disabilities (%)			Total (%)
	0 Not at all Comfortable	1 Moderately Comfortable	2 Very Comfortable	
Male	40.3	30.9	28.8	100.0
Female	34.8	31	34.1	100.0

3.7 REGRESSION ANALYSIS (PART ONE)

3.7.1 Attitudinal factors — followed by education, gender and age differences — are the most powerful predictors of feelings of comfort towards social interactions with PWDs across multiple settings; however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with feelings of comfort towards social interactions with PWDs in multiple settings.

Overall, results show that attitudinal factors are the most powerful predictors of feelings of comfort towards social interactions with PWDs across multiple settings. Respondents who express greater concern at the prospect of sharing public spaces with PWDs are less likely to feel comfortable in social interactions with PWDs. On the other hand, respondents who feel more comfortable having social relationships with PWDs are more likely to feel comfortable in such interactions.

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

3.8 COMPARISON WITH QUALITATIVE DATA

The survey results demonstrated that respondents are most comfortable with having students with physical disabilities in a class with their child while they are least comfortable with (a) those who have disruptive tendencies in class, (b) those with poor motivation for studying as well as (c) those with cerebral palsy, ADD/ADHD, intellectual disability and Autism. 12.2% of the sample indicated that they would not be comfortable with their child being in the same class with students from any of the eleven groups listed.

While the qualitative results did not make many direct comparisons between children of different disabilities, it was generally perceived that members of the public tended to have many more misconceptions and misgivings about persons with invisible disabilities in particular (see section 2.4 for elaboration).

Indeed, some professionals in the sector recounted cases where parents of typically developing children have been fearful that the development of their own children would be impaired through interactions with children with developmental disabilities in academic settings:

> in terms of collaboration, ECDA (Early Childhood Development Agency), the schools and SSG (SkillsFuture Singapore Agency), ... we are making some great progress. But, in the mindset of teachers and parents…I have parents who tell me, to have my child play with someone with a developmental delay, would that affect their cognitive ability or development [sic]? So, that area, I don't think you can "policy" it away [sic].
> — "Aaron", a professional a professional working in the disability sector

> "Rosie": Differently abled, yeah ... They will stare at them. You will see them moving away ... It also starts from home, you know, when you educate as much as possible in school, ... if the parents are on the other side, ...

> "Elaine": It's really not easy.

"Robyn": They will say "eh, eh, eh, walk further away from him"...when there is [an] autistic child in class, ... "This one is on the spectrum, ah, don't go and sit next to him, ah!", some parents do [say] that.

"Elaine": There are also parents who are worried that their child might imitate.

"Felicia": a lot of them...don't put my son with this group because he will go and copy this [sic].
— An excerpt of an exchange between several professionals who work with children with disabilities.

Another more general concern that professionals had encountered from parents of typically developing children was the fear that their own children would not get enough attention from educators in inclusive learning settings that put children with disabilities alongside typically developing children:

We do have that kind of scenarios [sic] even in EIPIC (Early Intervention Programme for Infants and Children) Centres when there's a class of five and maybe the three children are of a different profile and the other two are slightly [better] performing ... We do have caregivers present in the class, and when they start comparing, "Oh you are spending more time with the other children, my children are not learning", ...
— "Mary-Anne", working in a management role in the disability sector

The other sad thing is that parents of the typical kids are hesitant to send their children to that kind of preschool ... it's like are the teachers going to pay attention to my child [sic]? Because the teachers might be busy with the special kids and the things that they teach, is it good enough?

> The assumption is that kids with special needs, they are not so smart. So, are they going to lower down the education standard [sic]. So, they rather send their kids to kindergartens to not have kids with special needs [around] [sic]. ...it is both ways like you can have all these initiatives, plans to have an inclusive society but normal people also need to open up.
> — "Sid", a professional working in the disability sector

As evident from the qualitative findings there are social barriers to inclusion for children with developmental disabilities in educational settings with parents having concerns ranging from whether such children may affect the development of their own children or reduce the quality of education.

However, professionals have also pointed out that there are ongoing efforts to create more integration between special schools and mainstream schools as well as an openness by mainstream educators and some parents of typically developing children to be more inclusive:

> I want to create the public awareness about ID ... So, we work a lot with [mainstream] primary school[s] and secondary school[s]...before our students [with ID] go into the [mainstream] school, we will send our psychologists to go in to give a talk about ID, about our students' behaviour, how do we communicate, how can they communicate with our students effectively.

> It is good to give a talk to create that public awareness first, then they will come up with proposal... what kind of games do they want to play with our students to mingle? So, we will look through, we will plan together, collaborate together...so that they can then buddy when they go in, they will work with one-to-one buddy [sic]...

> When they are in their adulthood, they can accept their colleagues, if the colleague is someone who is disabled or physically disabled... awareness has already been created,

and they HAVE experience with them, communicating with them, socializing with them. I think that is very important. And, it's quite purposefully being built in the curriculum.
— "Jolene", a professional working in a management role in the disability sector

A lot of special schools are next to mainstream schools with hopes that the mainstream school students will come over to the special school to have events, ... like national day we will celebrate together, ... they do have certain events together and that helps the typical students to understand special needs students better.
— "Sid", a professional working in the disability sector

What I see is that some [mainstream] teachers and principals who are more open to wanting to learn how to support children with special needs in class, ... they are actively trying to incorporate the strategies.

Being in this position I can help to clarify certain misconceptions they might have, ... I am able to explain to them what might be the underlying reason [for the behaviour] and how they can support [sic].
— "Lou", a professional who works with mainstream educators

We have ever done autism awareness ... in the pre-school [sic] ... a lot of the parents who attended were just interested to know and a few of them actually said, "oh, I just wanted to know how to teach my children to help other children", ...
— "Felicia", a professional working in the disability sector

Going forward, they further recommend that inclusion efforts in mainstream schools should be calibrated to make the most out of such endeavours:

In my organisation there is some mainstream student who come ... once a week, not inclusive [sic]. It would be great if they can do things together on a more regular basis.
— "Lauren", a health professional

So, the thing about mainstream schools, when you do the integration it's always: recess, music, PE, and those are the worst things for special needs [sic]. The worst thing. They will always have a meltdown. Always. ... So, it needs to be...a bit more fine-tuned...

There is what you call a reverse integration — ... you have mainstream kids coming in to do volunteer [sic], or... but, they are the minority rather than the majority. And, that one had been proven to be quite, quite nice. So, you must actually be careful of this inclusion...Cause a person with special needs they can have a lot of negative experiences ...
— "Emily", a professional working in the disability sector and a caregiver of a child with special needs

...we had this opportunity to run a programme, where we basically change the way...in the sense...how would we play together? The students in [the] mainstream then think about what they can do, to actually meet their levels instead — and, suddenly, the students with autism [sic.] becomes engaged...after a while, the children actually realise that, oh, if I do this, I'm able to play with them. I'm able to interact with them. And starting to understand them...

suddenly, they have a lot of understanding about these friends that they meet...so, then, that builds up, you know in the long-term, people who empathise and actually [sic.] understands...
— "Jay", currently employed at a SSA which provides early intervention services

When it comes to employment, the survey results showed that respondents tend to be the most comfortable hiring persons with physical disabilities and the least comfortable hiring persons with cerebral palsy, ADD/ADHD, Autism and intellectual disability.

As mentioned before, the qualitative findings do indicate that respondents with invisible disabilities tend to face more public misconceptions and social barriers overall (see section 2.4 for more elaboration). This trend has been perceived to extend to the realm of employment as well, where persons with invisible disabilities have been observed to face more misconceptions from prospective employers:

> Although there is awareness from the employer to be inclusive, but a lot of times there is some limitation because what happens is, for clients who is not totally disabled [sic]... this are the group that is facing challenges when finding jobs for them [sic],... on appearance they ... the client doesn't look disabled but in the communication and cognitive issue there is some issue.
> — "Kat", working in a management role in the disability sector

> ...many times where the kids [with disabilities] are pushed to the employment [sic], they end up working with supervisors who are not aware how to handle and why they need to work with these kids [sic]. ...when the kids go to work they [get] put under pressure [and] they [get] scared, you know. Especially kids who are with invisible disability [sic] .. so they are receiving too many direction[s], too many feedback [sic]. They cannot handle, ... Then, they quit on the job.
> — "Fern", a professional employed in the disability sector

Some persons with visual impairment have also opined that inclusion efforts — in the workplace as well as beyond — tend to favour persons with specific type of physical disabilities as it is perceived to be easier to accommodate physical disabilities in mainstream settings than it is to accommodate other types of disability:

You know the symbol for people with disability, ... It's a wheelchair ... to represent all the disabilities [sic]... if you just use a wheelchair to represent people with disability, then when people ... make things accessible, they will think that as long as they cater to the [person on the] wheelchair, I'm already doing something that is correct ... All the other disability groups are fine with it. That is the perception that I have.

— "Marc", semi-retiree working in the disability sector with total visual impairment since young, aged 64 years old

Many people don't understand people who are blind...Bus company, they do so many things, they have a complete cycle for people on wheelchairs. But they do not even train the drivers to help people who are blind. Sometimes when we board the bus, we ask the bus driver, the bus driver don't want to talk...

Most of those jobs that people or companies says that they employ handicapped person [sic], are normally meant for people who are on a wheelchair. For example, when they said, they cater for all these people, ... office got staircase, I cater for ramps [sic]. So, these people on wheelchair... can move around in the office...But for people who are blind, it is going to be very ... different and quite challenging...

You go and look at government policy, every time when they mention, they will talk about they have done fantastic things for PWD, that person is always a wheelchair-bound [sic]. More likely than not it is a [person who is] wheelchair-bound...

I am not trying to say the government is no good or what...[but] when government do things, they always do it for the wheelchair-bound. Because, that is the easiest thing to do... all these other types, they are not doing much for it,

simply because it is very complicated. You must understand the disabilities before you can do all these things.

— "Edward", a retiree who acquired visual impairment at the age of 52, currently aged 59 years old

Overall, however, several professionals, PWDs and caregivers have pointed out that social prejudice is a significant barrier to employment for all PWDs more generally:

A lot of employers associate poor performance with the disability when that is not necessarily true, ... the fact is [that] anyone, including people with disabilities, there are good people and bad people [sic], ... the people tend to only look at disability and then attribute everything to the disability, which is wrong [sic].

So, this is like a mindset which needs to be changed. But it's very entrenched, it's like at all levels, it's not just employment, [it is the] general public.

— "Kwek", an employee in the disability sector who is visually impaired

... when he graduated from ITE, we thought that he could get a job because he is in food science, ... [in]supermarkets, we have jobs everywhere. So, he went [for] interviews after interviews... Even the school counsellor was very shocked when I got back to her, I said can you please help Ken* (not his real name) ... he couldn't get [a job] [sic].

...the form states that you have to declare your medical history. So, on safe side, I told my husband, better put down, he said, don't put down, so many times, then I said, better put down, so we put 'autism' [sic]. I went with him, went to Cold Storage ... I was confident that he would get a job there ...

And then, …this girl ... gave him a form to do with the other two candidates. So, when he filled up the form and everything, she collected the forms and she went into the room, then after that ... she called the other two in, and she told my boy, you can go home now, I will call you in two weeks' time [sic]. In two weeks' time he didn't get a call, then he was very upset [sic]. ...he said, mom, how come I wasn't called, ... the other two candidates they are also from ITE, ... "How come they got in and I didn't get it?" [sic]. Don't you think this is also prejudice?
— "Germaine", mother and caregiver of an adult son with ASD

When you look at employment for people with physical disabilities, we are also saying that they need to be treated equally like any able-bodied person, meaning [they should] have a fair interview process. ... give them an opportunity to present themselves too...What is very frustrating is ... you form your own impression even before meeting the PWD. ... that is really quite ... discouraging ... when, you go for interviews... HR people really play a very important part understanding how to deal with people with different disabilities, understanding their capabilities, potential ... that's important [sic]. Not many of us take time to do that.
— "CG", a career guidance coach in the disability sector

At the same time, it has been acknowledged that the government has made efforts to provide more employment support to PWDs and to encourage employers to hire PWDs, especially in recent years:

We, ... looking for job ... we can ask for assistance from the SG Enable, ... SG Enable... we need devices to be installed to the computers ... some of the companies ... will help to fund the equipment. ... they will help the to buy the equipment such as the voice-over ... For us to... to... to use in the office.

...besides that, some of the companies ... like before we work right, they will orientate us, how to move about in the office, some safety measures, ... how we walk to the restroom, how we go to the pantry [sic]. Their safety measures in the offices... definitely there's the improvement.
— "Alex", a 40 year old working professional in the services industry who is visually-impaired

...my daughter, although she is 12 years in [programme for individuals with special needs], ...if there is a job or temporary assignment for one or two years, they want to assess the kid to make sure that the kids can handle the job ...

So, my daughter has been actually been doing that last time, somewhere around 2012 [sic]. She was assigned to one [facility] to handle some housekeeping work for two years and she do it, you see [sic].

They will not put a kid permanently to any job unless they are very sure that the kids can handle it ... they will monitor them ... when they feel that the kid is able to sustain and to maintain a certain form of independence, then they will let go of the kid [sic].

... that is a very good process to handle [sic]. My daughter, this year, there's a very likely chance that she will be out in employment permanently, I hope so!
— "Terence", father of an adult daughter with intellectual disability and attention deficit issues

Our association provides jobs and place jobs for persons with ... disabilities ... we find many good policies in employment act, fair consideration, work act, uhm, work health and safety act, and even salary negotiations and all these are all very good [sic].

> ... we attended the enabling masterplan award for, to encourage and award employers who are very progressive in hiring people — hotels, national library board — there are several hundred this year ...
>
> There are many great initiatives, ... in fact, good minister, Mr. Desmond Lee, announced now that small businesses can rent HDB flats to run their own start-ups. And, for any businesses that hire persons with disabilities, ... bringing work to [the] heartlands in Toa Payoh, in Tampines, Marine Parade … this policy will now be changed, that they are hire, not only can they hire and rent, those who hire and rent might get a special treatment [sic].
>
> — "Aaron", a professional working in the disability sector

In the realm of sharing public space, quantitative results showed that respondents were the most comfortable sharing an empty lift with the d/Deaf and with those who have physical disabilities. Conversely, they were the least comfortable sharing an empty lift with persons who had ADD/ADHD, cerebral palsy and autism.

While qualitative results did not indicate many comparisons being made between persons of various disabilities, it was certainly acknowledged that there is a general lack of awareness among members of the public of disability etiquette and how they should interact in public with persons of various disabilities:

> ... there's so much ignorance for blind people, especially [in terms of] how to handle blind people...I've experienced it in the hospital and in homecare and stuff like that ... for example, many times I tried going to escalators, or stairs, or crossing the traffic light [sic]. I'm shocked even nurses does this [sic]. They hold a blind person's arms without asking. ... you don't hold a blind person's arm just like that without asking him, or without asking for permission [to see] if he need[s] help first. And it is the way they handle the arm, you are not supposed to carry the arm, ...

Although I know they meant good, but it could be harmful ... both them and the VI (visually-impaired) [sic]. ... they can't see who's touching them [sic]...and VI have this reaction, it's not a violent reaction [sic]. It's a reaction because they [are] blind, [and] they don't know who's trying to touch them or attack them.

— "Roman", a working professional who acquired visual impairment at age 48 (currently aged 50)

... they don't know how to manage, they don't know how to react, they don't know what to do. ... I come in the wheelchair, some people will stand to offer me [their] seat, ...

So, people are not aware... sometimes they feel very unsure. I think it's important that, you know, they learn, just treat us as, everyone, as a member.

... if you want to offer help, you ask. But other than that, everyone continues on [sic]. ... it's not just disability, someone falls, people also don't bother to stop and help people [sic]. ... the graciousness of Singaporeans, or people living in Singapore is not as I would like to expect [sic].

... awareness, lah, that not every disabled person cannot think [sic]. Right? ...the way people like, "Oh, you're working ah? Really ah? You working ah?". … some people will run after you to give you money. I says, "Auntie, don't worry. I'm fine, I'm working. Never mind." [sic]. ...

...that's how people…the minute you have a disability means up there is nothing [sic]. But, that's how society treats people with disabilities [sic], and if people stop treating people like that, then maybe everyone learns that they have something to offer.

— "Maureen", professional at an SSA serving people with disabilities. 'Maureen' is a wheelchair-user.

in Singapore, ... people can be just so rude ...my youngest boy, he has this coping mechanism, ... He used to get very upset when people say loudly in front of him about his brother [sic] or stare. ... My child's response is to wave at the person and say "Hi, yes, he is autistic, you know". And they would quickly look away, ... that is quite a gracious way of responding.

It is hard ... People don't even pretend to, ... pretend to ignore or something, you know [sic]. They really like stare at the person, ... and not care that it is hurtful.
— "Ruby", mother and caregiver of an adult son with autism

There are some incidents where parents have come and spoken to me, shared with me that when they brought the child out, ... they are being judged in the public, then they feel very embarrassed.
— "Rose", working in a management position for a SSA serving people with disabilities

So, I think over the past eight months we have trained 180 teachers, from primary school? Pre-school, primary school and secondary schools. ... how to play para-sports, for example. ... we will bring in an athlete to talk to them...it's the first time that they see a person with disability [sic]. [laughs]

... we actually group them into different sessions also, and ask them to share, you know, how they would handle certain situations with persons with disabilities. ... they would just share very frankly that... "I've never seen one, I've never come across one. Then I can only imagine what I can do." [sic] [laughs] Yeah.

And then the... a lot of things, [there are] actually very basic things that we can teach them, you know. You just ask, you know, a person with disability whether he or she needs

help. You don't need to be afraid of asking. Yeah, and it's polite to do so. Very simple things that can be taught. But, a lot of them they wouldn't know.

Even though all of them have gone through inclusive PE (physical education) education ... but when it really comes to implementation it becomes very scary for them. Yeah. So, there's a different element because I think the curriculum doesn't touch on all these soft skills.
— "Kelly", working in a senior management role running programmes for the disabled

Some respondents perceived, though, that awareness among members of the public had improved over the years:

Compared to the last 10 years, now, now it's better. Now people [are] being more inclusive. For example, like, ... the [members of the] public, will ask me — do I need help? ...

... waiting for, uh, buses at the bus stop right, there will be people who will come to us to assist, um... assist us to our bus, lah [sic]. Like, sometimes, even if they... will take [a] different bus ... they will wait until we will board the bus ..., then they will take the next bus.
— "Alex", a 40-year-old working professional in the services industry who is visually-impaired

... now I felt that the public awareness is so much better [sic]. I mean, even the older folks they are more aware ... they are more understanding...

...sometimes when my son is having [a] meltdown or what, they will come up and say, "Oh it's okay". If he wants to eat their food, they will say, "Come, come, it's okay, give him". Things like that. ...

So they like to say, like, "Oh he likes to [go in] the lift… never mind, it's okay, let him take the lift, go up and come

down. He's happy, it's okay". ... I would say it's better lah. Much better than 10 years ago. Or 20 years ago.
— "Tiffany", mother and caregiver of an adult son with disability

…awareness was also, I feel, um, the terms used are…more aware of autism, I think they are — they are able to use the correct terms [sic]. [This is] something positive. Even the older generation, where they used to perhaps label 笨蛋 ben dan,[138] 傻傻的, sha sha de,[139] I don't think they will longer use these terms [sic]. Um, they are able to correctly term it, [like for] autism, 自闭 zi bi, I feel that that is something positive [sic]; they are aware of these conditions.
— "Loh", an employee at a SSA providing programmes for people with disabilities

I thought that over the years, there's, like, more effort put into publicity in terms of increasing public awareness of the different disability type [sic]. I thought that was done quite successfully.
— "Linda", a health professional working with people with disabilities

Still, survey findings demonstrate that more remains to be done to remove social barriers when it comes to the sharing of public space. Indeed, 12.6% of respondents surveyed indicated that they would not be comfortable letting their child play with any other children who had disabilities. Overall, respondents were most comfortable letting their child play with another who was d/Deaf, mute or had physical disabilities. They were the least comfortable to do so in the case of children with cerebral palsy, ADD/ADHD, and autism.

---

[138] stupid
[139] silly

In the qualitative phase of the study, parents of children with developmental disabilities also recounted challenging experiences with parents of typically developing children:

> …the parents very kiasu (scared to lose), "this kind of children [with disabilities] come into our school' then they will complain non-stop [sic]...Actually the children themselves don't mind playing [in the playgrounds with children with disabilities], it's the parents that don't want their children to mix.
> — "Harriet", mother and caregiver of an adult son with disability

> ...I brought my son to a playground. ... some neuro-typical kids, like two kids, maybe three to four years [old] try to play with him, try to play with each other, some parents are overprotective [sic]. Some will pull the[ir] child away, maybe they feel, "Oh, this child, I don't feel the child is smart enough" or something.
> — "Valerie", mother and caregiver of a preschool child who is likely to be disabled (pending formal diagnosis)

Some caregivers perceive that, while public awareness of disabilities in Singapore is improving, more can be done:

> "Charles": I think I make a guess, eight out of 10 they do not understand, like, next time my son throw a tantrum in the shopping centre [sic]...Some [members of the public] are quite nice. Like my son meltdown, they will come and say, "do you need help?". But, there is some that stay down there and stare at you as though something is happening, don't know what is happening [sic]. "Damn dumb parent or what", that kind of thing [sic]. I think it is a mixture. From last time till now I think got a little bit of improvement but still a lot more to be done [sic].

> "Rob": More can be done from school when they are teaching the kids [sic].

— Exchange between two caregivers. "Charles" is a father and caregiver of a teenager with disability. "Rob" is a father and caregiver of a pre-teen with multiple disabilities and co-morbidities.

3.9 CONCERNS ABOUT SOCIAL INTERACTIONS: AN OVERVIEW

3.9.1 Overall, the majority of respondents — more than three in five — would not have any concerns interacting with persons with disabilities in professional or social settings

After responding to the scenarios specified in the previous section, respondents were next asked to indicate whether they would have any concerns interacting with persons with disabilities in professional or social settings[140]. Response options for the three question items in this section include "No, I would not have any concerns" and "Yes, I would have some concerns".

Those selecting the latter are then further prompted to indicate their concerns — they may choose from a drop-down list with options such as "I do not know how to respond if PWDs require assistance" or write their own answer by choosing "Others (please specify)". When responses to individual question items are aggregated, more than three in five (64%) indicate that they have no concerns at all with such interactions (see Figure 15 below).

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[140] These question items are numbered 18-20 (please refer to the complete list of question items in Annex 2 for greater detail).

Figure 15: Whether One Would Have Concerns interacting with PWDs across Various Settings, %
N = 1,801
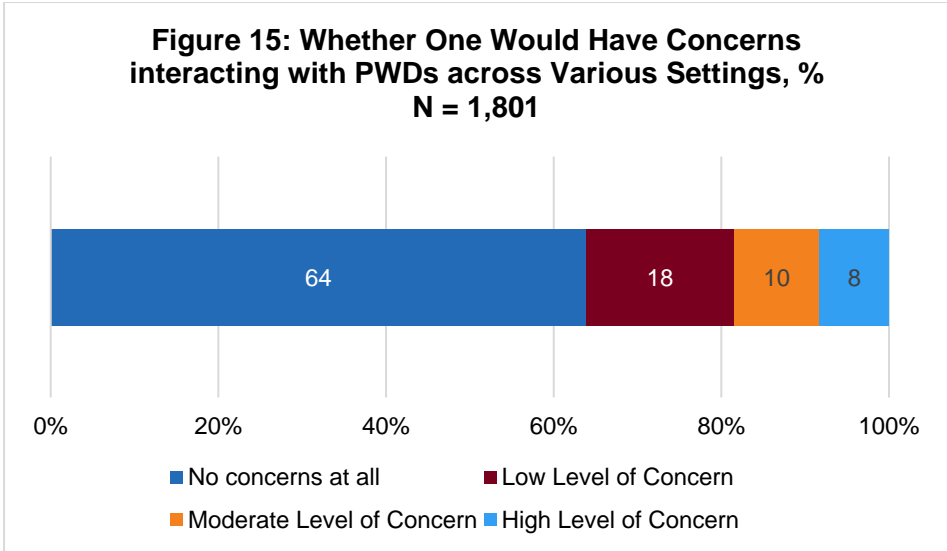
3.10 CONCERNS ABOUT SOCIAL INTERACTIONS: PROFESSIONAL SETTINGS

3.10.1 The majority of respondents — more than seven in 10 — indicate no concerns working with PWDs in professional settings; for the remainder, the most commonly cited concern is the perceived difficulty of making special arrangements to accommodate PWDs effectively

More than seven in 10 (72.3%) indicate that they would not have any concerns working with people with disabilities in a professional setting (see Figure 16 below). The remainder cite a variety of factors when asked to substantiate their concerns.

Most cited was the perceived difficulty in making special arrangements to effectively accommodate people with disabilities in places of work. This point accounted for 34.2% of all concerns raised (see Figure 17 below). Not knowing how to work with people with disabilities accounted for another 32.1% while worries that people with disabilities would not be able to fit in made up a further 20.4%. The fear that working with people with disabilities would put respondents in danger comprised another 11%.

Together, these specific points accounted for 97.7% of all concerns raised — the other points raised could not be meaningfully categorised and were thus classified as "other" (see Figure 17 below).

Figure 16: Whether One Would Have Concerns about Working with PWDs in a Professional Setting, %
N = 1,801

	No	Yes
	72	28
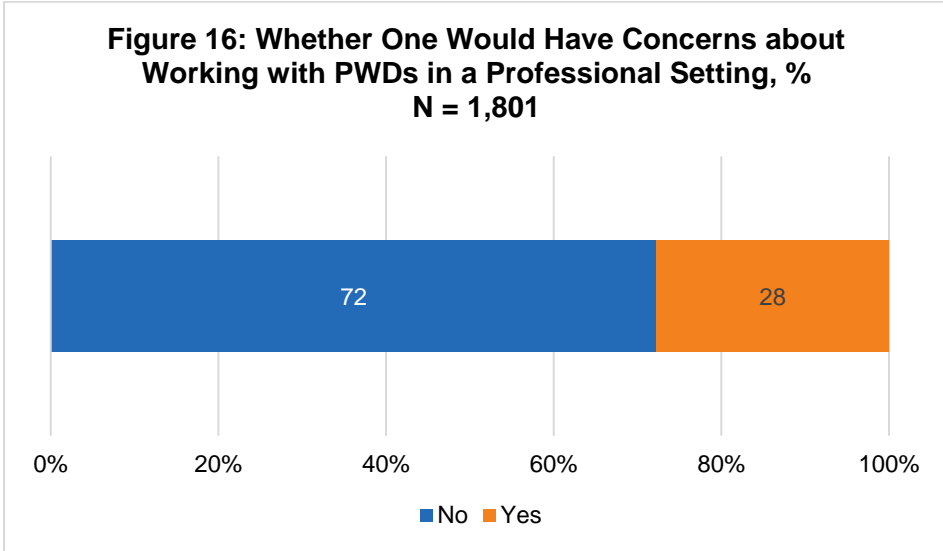
Figure 17: Breakdown of Concerns Reported about Working with PWDs in Professional Settings, %

- ■ Do not know how to work with Persons with Disabilities
- ■ Afraid that working with Persons with Disabilities would put me in danger
- ■ Difficult to make the special arrangements needed to ensure that Persons with Disabilities work effectively
- ■ Persons with Disabilities might not be able to fit in with other employees
- ■ Other reasons
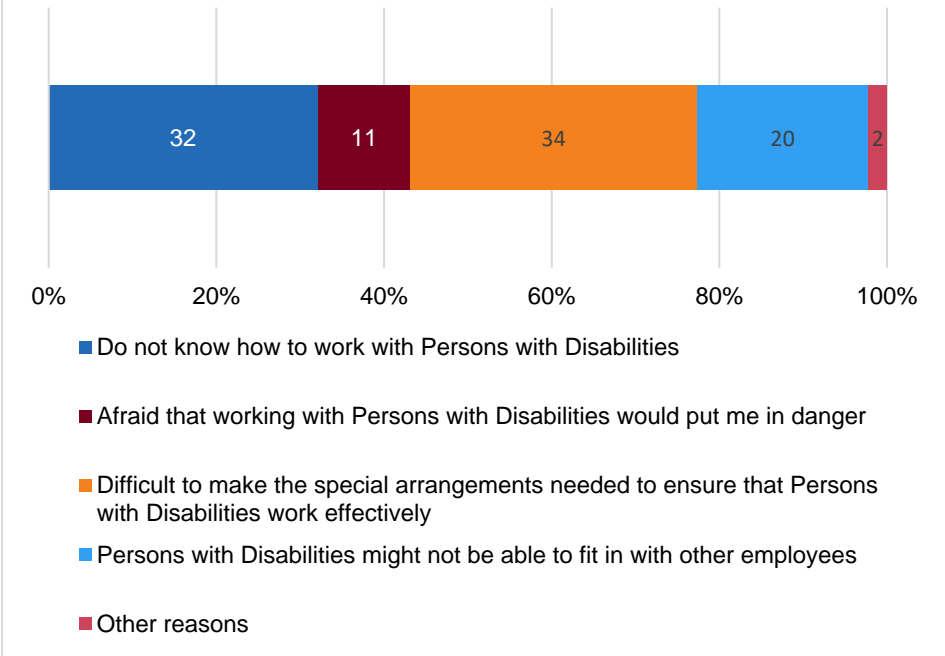
3.11 CONCERNS ABOUT SOCIAL INTERACTIONS: PUBLIC SPACES

3.11.1 The vast majority of respondents — close to nine in 10 — indicate no concerns about sharing public spaces (e.g., lifts, parks, restaurants) with PWDs; for the remainder, the most commonly cited concern is not knowing how to respond if PWDs require assistance

Close to nine in 10 (87.8%) indicate that they would not have any concerns about sharing public spaces (e.g., lifts, parks, restaurants) with persons with disabilities (see Figure 18 below). The remainder cite a variety of factors when asked to substantiate their concerns.

Most cited was the concern that they would not know how to respond if people with disabilities require assistance. This point accounted for 42.4%

of all concerns raised (see Figure 19 below). Not knowing how to interact with people with disabilities accounted for another 37% while fears that interactions with people with disabilities would be dangerous made up a further 19.6%.

Together, these specific points accounted for 99% of all concerns raised — the other points raised could not be meaningfully categorised and were thus classified as "other" (see Figure 19 below).

Figure 18: Whether One Would Have Concerns about Sharing Public Spaces with PWDs, %
N = 1,801

No	Yes
88	12

■No ■Yes

Figure 19: Breakdown of Concerns Reported about Sharing Public Spaces with PWDs, %

37	42	20	1

■Do not know how to interact with persons with disabilities

■Do not know how to respond if persons with disabilities require assistance

■Afraid that interacting with persons with disabilities would be dangerous for me

■Other reasons

3.12 CONCERNS ABOUT SOCIAL INTERACTIONS: INTERACTIONS WITH CHILDREN

3.12.1 The vast majority of respondents — close to eight in 10 — indicate no concerns about their child(ren) being in close contact with PWDs; for the remainder, the most commonly cited concern is that their child(ren) would not know how to respond if PWDs require assistance

Close to eight in 10 (77%) indicate that they would not have any concerns about their child(ren) being in close contact with PWDs (see Figure 20 below). The remainder cite a variety of factors when asked to substantiate their concerns.

Most cited by respondents was the concern that their child(ren) would not know how to respond if PWDs required assistance. This point accounted for 40.7% of all concerns raised (see Figure 21 below). The concern that their child(ren) would not know how to interact with PWDs accounted for another 38.6% while fears that interactions with PWDs would be dangerous comprised a further 19.9%.

Together, these specific points accounted for 99% of all concerns raised — the other points raised could not be meaningfully categorised and were thus classified as "other" (see Figure 21 below).

Figure 20: Whether One Would Have Concerns about One's Child(ren) Being in Close Contact with PWDs, %
N = 1,801

Figure 21: Breakdown of Concerns Reported about Children of Respondents Being in Close Contact with PWDs, %
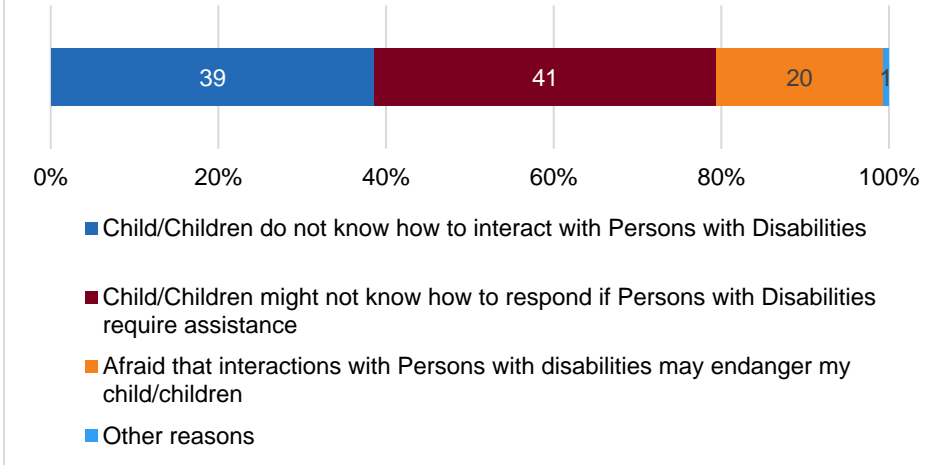
3.13 CONCERNS ABOUT SOCIAL INTERACTIONS: DIFFERENCES ACROSS AGE

3.13.1 Younger respondents are slightly more likely to express a high level of concern over social interactions with PWDs than older counterparts

Younger respondents are slightly more likely to express a high level of concern over interactions with PWDs in professional and social settings when compared with older counterparts. Close to two in 10 of those aged "35 and below" (21.7%) as well as "36 to 50" (22.4%) reported a high level of concern, while the same was only reported by closer to one in 10 of those aged "51 to 65" (13.1%) and "above 65" (14.7%) (see Table 12 below).

In the regression analyses that follow (see section 3.13 below), this difference is investigated further to ascertain if age is a predictor of feelings of concern towards social interactions with people with disabilities even after the effects of other variables are controlled for.

Table 6: Degree of Comfort with Social Interactions with PWDs, by Age

Age Cohort N = 1801	Degree of comfort with social interactions with PWDs (%)			Total (%)
	Low	Moderate	High	
35 and below	60.9	17.4	21.7	100.0
36 to 50	61.1	16.4	22.4	100.0
51 to 65	67.6	19.3	13.1	100.0
Above 65	68.4	16.9	14.7	100.0

3.14 REGRESSION ANALYSES (PART TWO)

3.14.1 Attitudinal factors — followed by social networks and age differences — predict feelings of concern towards social interactions with PWDs across multiple settings

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' feelings of concern at the thought of social interactions with PWDs across multiple settings.

Overall, the final results show that attitudinal factors are the best predictors of feelings of concern amongst respondents in the specified model. Respondents who agree more strongly that they do not know the needs of PWDs are more likely to express concern at the thought of social interactions with PWDs across multiple settings. On the other hand, respondents who (a) express greater interest in learning how to support PWDs and those who (b) feel more comfortable having social relationships with PWDs are less likely to express such concerns.

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

3.15 COMPARISON WITH QUALITATIVE DATA

The quantitative results demonstrated that the majority of respondents — more than seven in 10 — would not have any concerns working with PWDs in professional settings. Among the remainder, the most commonly cited concern was the perceived difficulty of making special arrangements to accommodate PWDs effectively.

According to the qualitative results, several respondents have indicated that there are still social barriers preventing PWDs from securing employment due to prejudice and discrimination (see elaboration in section 3.8). Persons with invisible disabilities have been observed to face more misconceptions from prospective employers, although prejudice has been identified as a barrier for persons with a range of disabilities more generally (see elaboration in section 3.8).

When it comes to the perceived difficulty of making special arrangements to accommodate PWDs in the workplace, the qualitative results do corroborate with the quantitative to a degree as several respondents with visual impairments have noted instances of rejection from service providers who do not know how to make training services accessible for persons with visual impairment:

> …there are a lot of institutions teaching massage in Singapore. So, there was one time I enrolled myself, lah, for the course "baby massage". ...When I say that I'm visually impaired, they sort of rejected me. They said they don't have space. I said, what do you mean you don't have space? I just follow the class [sic]. I don't need extra space. ... I just attend your class, listen to what you teach, ... if you write on the board, then you sort of try to explain in words, lah [sic]. Describe to me what you're writing on the board. Yeah. This is what you call being inclusive, lah. You have to include us.
> — "Katie", a 72-year-old working professional who is visually impaired

> For example, we take SkillsFuture fund [sic]. You can go out anywhere and find thousands of courses and so on to

take. And, paid by [the] SkillsFuture fund [sic]. ... Do you know, if you go to any of those SkillsFuture fund exhibition that they hold anywhere else [sic], for a blind person, you just go there and need to tell them, say, "I am blind", say "What course can I take?" [sic]. And, you can't get an answer. ...Because, most of them don't cater for people who are blind [sic]. To teach people who are blind, it is a little bit different. It is not as easy as it is. ...

Even SG Enable, a body that helps PWDs, people with disabilities, they tried to help many, many people. But, for people who are blind, I think it is also very limited in scope. Even they don't really offer courses for people who are blind. For [organisations catering to those with visible impairment], ... their courses are simple courses like teaching people how to use handphones, some computers, spreadsheets stuff and so and so [sic]. But, they are not certificate course[s].

— "Edward", a retiree who acquired visual impairment at the age of 52, currently aged 59 years old

Such misunderstandings seem to persist in spite of efforts made by the government to provide support and reward employers for making such accommodations (as previously mentioned in section 3.8):

We, ... looking for job ... we can ask for assistance from the SG Enable, ... SG Enable... we need devices to be installed to the computers ... some of the companies ... will help to fund the equipment. ... they will help the to buy the equipment such as the voice-over ... For us to... to... to use in the office.

...besides that, some of the companies ... like before we work right, they will orientate us, how to move about in the office, some safety measures, ... how we walk to the restroom, how we go to the pantry [sic]. Their safety measures in the offices... definitely there's the improvement.

— "Alex", a 40 year old working professional in the services industry who is visually-impaired

Our association provides jobs and place jobs for persons with developmental disabilities [sic], the adults, we find many good policies in employment act, fair consideration, work act, uhm, work health and safety act, and even salary negotiations and all these are all very good [sic].

We attended the enabling masterplan award for, to encourage and award employers who are very progressive in hiring people — hotels, national library board — there are several hundred this year as recipients receiving this enabling employer award [sic].

— "Aaron", a professional working in the disability sector

Going forward, therefore, more needs to be done to get through to service providers as well as employers to allow PWDs to access training courses and truly thrive in the workplace.

Moving on, quantitative results show that the vast majority of respondents — close to eight in 10 — express no concerns about their child(ren) being in close contact with PWDs. Among the remainder, the most commonly cited concern is that their child(ren) would not know how to respond if PWDs require assistance.

While such a result may seem very encouraging, it is nonetheless evident from the qualitative results that several parents of children with developmental disabilities have indeed experienced instances of being rebuffed by parents of typically developing children who did not want their own children to interact closely with children with disabilities on playgrounds or in school (as previously mentioned in section 3.8):

Chapter 4

Helping Hands

CHAPTER 4: HELPING HANDS

4.1 OVERVIEW

4.1.1 Most are willing to help PWDs who seem to be in need; however, a minority still opt to keep their distance because they do not know enough about PWDs to either (a) provide the appropriate forms of help or (b) understand how to behave appropriately around PWDs

To better understand respondents' willingness to provide assistance to people with disabilities, a series of four hypothetical scenarios were provided to gauge their willingness to help (a) someone with blindness or visual impairment, (b) someone who is a wheelchair-user, (c) someone who is d/Deaf or hard-of-hearing and (d) someone with a developmental disability.

The four scenarios are as follows:

a) <u>Scenario 1 — Assisting someone with blindness or visual impairment (Question item 45):</u>
   o *"Scenario 1: There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability. What would you do if you see someone with a white cane waiting at a bus stop and seemingly want to catch a bus?"*
b) <u>Scenario 2 — Assisting a wheelchair-user (Question item 46):</u>
   o *"Scenario 2: There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability. What would you do if you see a wheelchair user having difficulty getting their wheelchair to move?"*

c) <u>Scenario 3 — Assisting someone who is d/Deaf or hard-of-hearing (Question item 47):</u>

  ○ *"Scenario 3: There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability. What would you do if you encounter someone on a train who does not seem to hear the latest announcements asking all passengers to exit immediately?"*

d) <u>Scenario 4 — Assisting someone with a developmental disability (Question item 48):</u>

  ○ *"Scenario 4: There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability. What would you do if you see someone singing loudly to themselves on the bus, without seeming to notice the discomfort of other passengers?"*

Response options include "Go up to them and see if they need help", "Leave them alone unless they request for help", and "Keep a distance". Those selecting the latter are then further prompted to explain their choice — they may choose from a drop-down list with options such as "I do not want them to feel pitied" or write their own answer by choosing "Others (please specify)".

The question items in this section seek to better understand reports by people with disabilities that members of the public can be aloof and hesitant in offering their assistance in times of need. As such, the scenarios in this section are inspired by incidents recounted in focus group sessions by persons with disabilities.

As described in the sections below (4.2–4.5), respondents are the most likely to offer proactive help in Scenarios 3 and 2 but the least likely to do so in Scenario 4. Out of those opting to keep a distance in Scenarios 1–3, the reason most cited is not knowing how to assist PWDs in such situations. However, the most cited reason for keeping a distance in

Scenario 4 is not knowing how to behave around someone conducting themselves in the described manner.

The least cited reason for keeping a distance across all four scenarios is the reasoning that it is not the responsibility of by-standers to provide assistance.

4.1.2 Scenario 1: Assisting someone with blindness or visual impairment

4.1.2.1 Most — close to three in five — would assist someone with blindness or visual impairment (as in Scenario 1); the most cited reason for withholding help is not knowing how to assist in such a situation even if asked

Scenario 1: There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability. What would you do if you see someone with a white cane waiting at a bus stop and seemingly want to catch a bus?

Close to three in five respondents (60.1%) indicate that they would assist someone with blindness or visual impairment as in Scenario 1 (see Figure 22 below).

With regards to the remainder who would opt to keep a distance, the reason most cited for doing so is being ignorant of how to assist in such a situation even if asked. This point accounted for 34.5% of all reasons cited for keeping a distance (see Figure 23 below).

Fears that PWDs would feel pitied if help was offered accounted for a further 27.6% while not knowing how to behave around PWDs made up another 17.2%. Perceptions that assisting PWDs in such situations is not the responsibility of by-standers then comprised another 13.8%.

Together, these specific points accounted for 93.1% of all the reasons raised — the other points could not be meaningfully categorised and were thus classified as "other" (see Figure 23 below).
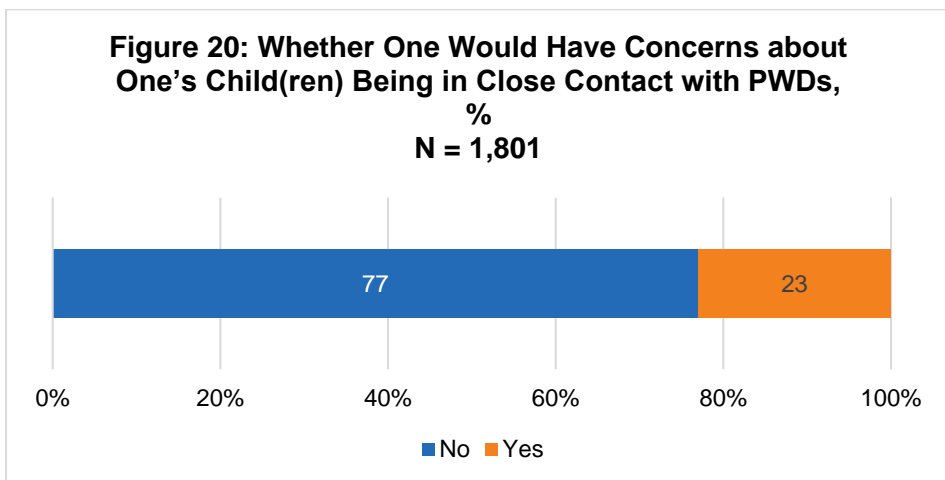
Figure 22: Willingness to Help PWDs in Scenario 1, %
N = 1,786

60	38	1

0% 20% 40% 60% 80% 100%

■ Go up to see if they need help   ■ Approach only if they request for help
■ Keep a distance

Figure 23: Breakdown of Reasons for Keeping a Distance in Scenario 1, %

14	34	17	28	7

0% 20% 40% 60% 80% 100%

■ Not my responsibility to do anything
■ Do not know how to help even if they asked me
■ Do not know how to behave around them
■ Do not want them to feel pitied
■ Other reasons

4.1.3 Scenario 2: Assisting a wheelchair-user

4.1.3.1 Most — close to eight in 10 — would assist a wheelchair-user (as in Scenario 2); the most cited reason for withholding help is not knowing how to assist in such a situation even if asked

Scenario 2: There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability. What would you do if you see a wheelchair user having difficulty getting their wheelchair to move?

Eight in 10 respondents (80.2%) indicate that they would assist someone who is a wheelchair-user as in Scenario 2 (see Figure 24 below).

With regards to the remainder who would opt to keep a distance, the reason most cited for doing so is being ignorant of how to assist in such a situation even if asked. This point accounted for 54.6% of all reasons cited for keeping a distance (see Figure 25 below). Ignorance of how to behave around PWDs in such a scenario accounted for a further 27.3% while fears that PWDs would feel pitied if help was offered made up another 13.6%. None of the respondents perceive that it is not their responsibility to assist.

Together, these specific points accounted for 95.5% of all the reasons raised — the other points could not be meaningfully categorised and were thus classified as "other" (see Figure 25 below).

Figure 24: Willingness to Help PWDs in Scenario 2, %
N = 1,795

- ■ Go up to see if they need help
- ■ Approach only if they request for help
- ■ Keep a distance

**Figure 25: Breakdown of Reasons for
Keeping a Distance in Scenario 2, %**
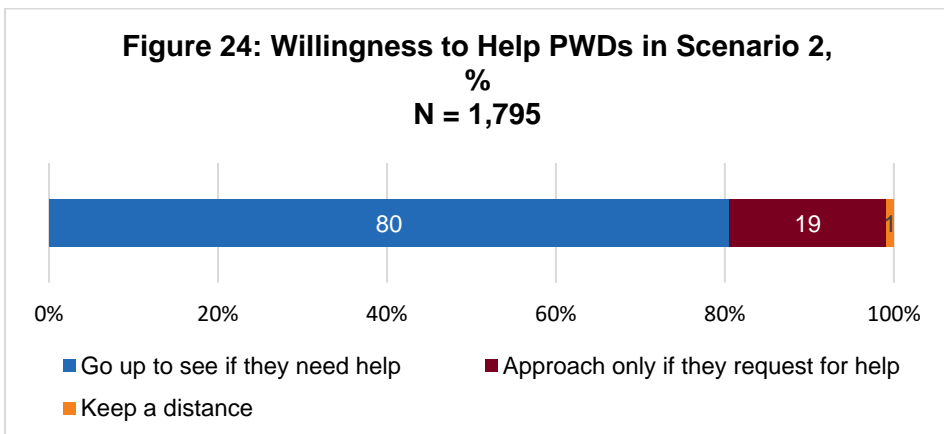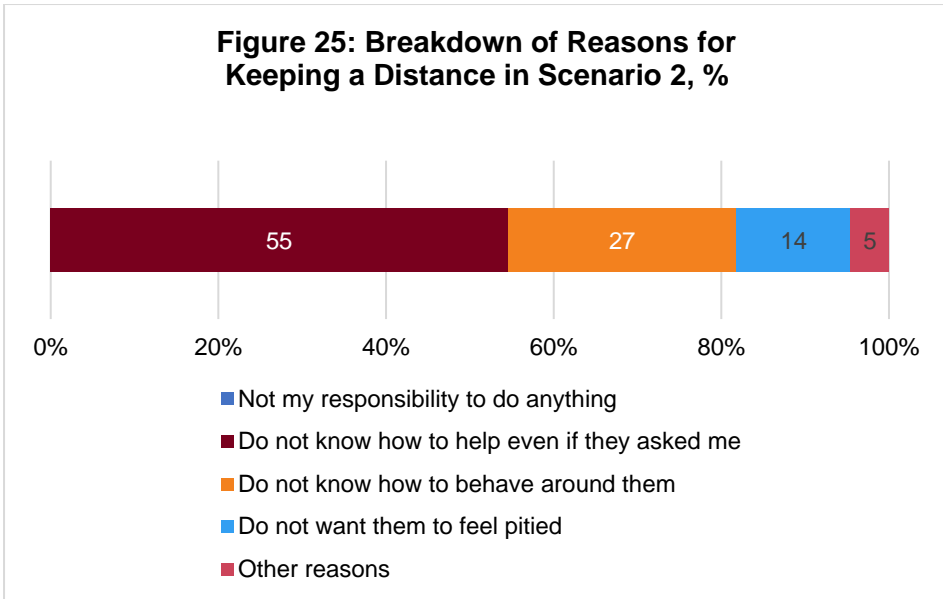
4.1.4 Scenario 3: Assisting someone who is d/deaf or hard-of-hearing

4.1.4.1 Most — close to eight in 10 — would assist someone who is d/Deaf or hard-of-hearing (as in Scenario 3); the most cited reason for withholding help is not knowing how to assist in such a situation even if asked

Scenario 3: There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability. What would you do if you encounter someone on a train who does not seem to hear the latest announcements asking all passengers to exit immediately?

Eight in 10 respondents (80.3%) indicate that they would assist someone who is d/Deaf or hard-of-hearing as in Scenario 3 (see Figure 26 below).

With regards to the remainder who would opt to keep a distance, the reason most cited for doing so is being ignorant of how to assist in such a situation even if asked. This point accounted for 36.8% of all reasons cited for keeping a distance (see Figure 27 below). Ignorance of how to behave around PWDs in such a scenario accounted for a further 31.6% while fears

that PWDs would feel pitied if help was offered made up another 15.8%. Perceptions that assisting PWDs in such situations was not the responsibility of by-standers then comprised another 15.8%. Together, these specific points accounted for all the reasons raised (see Figure 27 below).

Figure 26: Willingness to Help PWDs in Scenario 3, %
N = 1,787

80	18	1

0% — 20% — 40% — 60% — 80% — 100%

■ Go up to see if they need help   ■ Approach only if they request for help
■ Keep a distance

Figure 27: Breakdown of Reasons for Keeping a Distance in Scenario 3, %

16	37	32	16

0% — 20% — 40% — 60% — 80% — 100%

■ Not my responsibility to do anything
■ Do not know how to help even if they asked me
■ Do not know how to behave around them
■ Do not want them to feel pitied
■ Other reasons

4.1.5 scenario 4: assisting someone with intellectual disability

4.1.5.1 Less than half — about two in five — would assist someone with intellectual disability (as in Scenario 4); the most cited reason for withholding help is not knowing how to behave around people with intellectual disability in such situations

Scenario 4: There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability. What would you do if you see someone singing loudly to themselves on the bus, without seeming to notice the discomfort of other passengers?

Two in five respondents (43.3%) indicate that they would assist someone with intellectual disability as in Scenario 4 (see Figure 28 below).

With regards to the remainder who would opt to keep a distance, the reason most cited for doing so is not knowing how to behave around PWDs in such situations. This point accounted for 40.3% of all reasons cited for keeping a distance (see Figure 29 below). Being unsure of how to help even if assistance was requested made up a further 26.6% of reasons cited while fears that PWDs would feel pitied if help was offered accounted for another 13.7%. Perceptions that assisting PWDs in such situations was not the responsibility of by-standers then comprised another 11.5%.

Together, these specific points accounted for 92.1% of all the reasons raised — the other points could not be meaningfully categorised and were thus classified as "other" (see Figure 29 below).

Figure 28: Willingness to Help PWDs in Scenario 4, %

N = 1,779

| 37 | 43 | 18 |

0%   20%   40%   60%   80%   100%

■ Go up to see if they need help   ■ Approach only if they request for help
■ Keep a distance
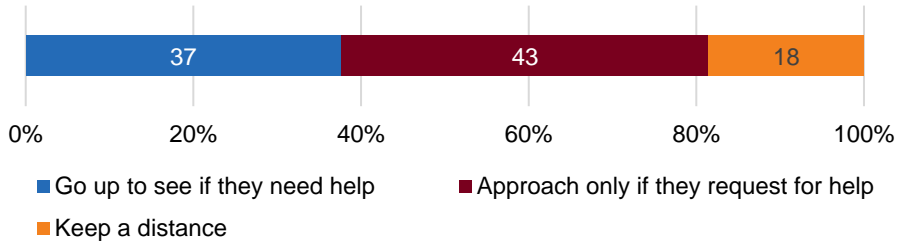
Figure 29: Breakdown of Reasons for Keeping a Distance in Scenario 4, %

| 12 | 27 | 40 | 14 | 8 |

0%   20%   40%   60%   80%   100%

■ Not my responsibility to do anything
■ Do not know how to help even if they asked me
■ Do not know how to behave around them
■ Do not want them to feel pitied
■ Other reasons
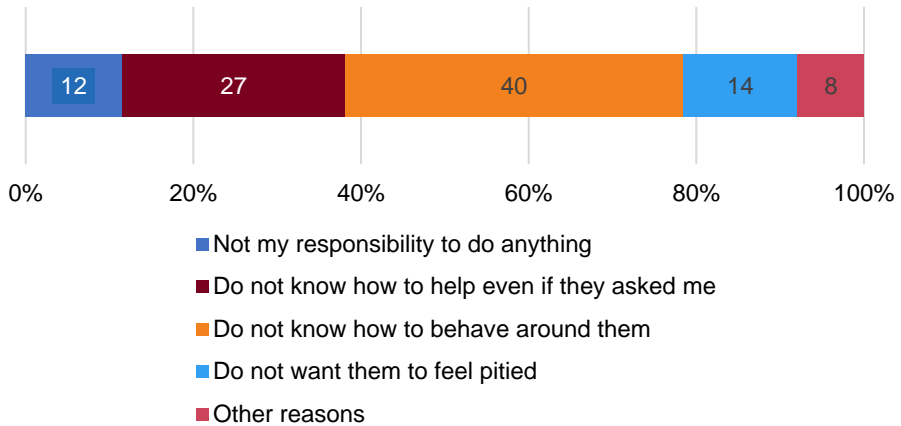
4.2 REGRESSION ANALYSES: ASSISTING SOMEONE WITH BLINDNESS OR VISUAL IMPAIRMENT (SCENARIO 1)

4.2.1 Attitudinal factors — followed by age differences — predict respondents' willingness to help someone with blindness or visual impairment (as in Scenario 1); however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' willingness to assist someone with blindness or visual impairment (as in Scenario 1).

Overall, results show that attitudinal factors are the best predictors of respondents' willingness to help in the specified model.

Respondents who are more likely to express a willingness to help someone with blindness or visual impairment (as in the given scenario) are as follows:
   (a) those who agree more strongly that they would help PWDs if given the opportunity;
   (b) those who express greater interest in learning how to support PWDs; and,
   (c) those who are more comfortable with having social relationships with PWDs.

However, as the identified predictors only account for 6.7% of the observed variation in the data, follow-up research is recommended to better account for the factors associated with respondents' sentiments in this regard.

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

4.3 REGRESSION ANALYSES: ASSISTING A WHEELCHAIR-USER (SCENARIO 2)

4.3.1 Attitudinal factors predict respondents' willingness to help someone who is a wheelchair-user (as in Scenario 2); however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' willingness to assist wheelchair-users (as in Scenario 2).

Taken together, results show that attitudinal factors are the best predictors of respondents' willingness to help in the specified model. Respondents who (a) agree more strongly that they would help PWDs if given the opportunity and those who (b) feel more comfortable having social relationships with PWDs are more likely to express a willingness to help wheelchair-users (as in the given scenario).

However, as the identified predictors only account for 3.9% of the observed variation in the data, follow-up research is recommended to better account for the factors associated with respondents' sentiments in this regard.

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

4.4 REGRESSION ANALYSES: ASSISTING SOMEONE WHO IS D/DEAF OR HARD-OF-HEARING (SCENARIO 3)

4.4.1 Attitudinal factors predict respondents' willingness to help someone who is d/Deaf or hard-of-hearing (as in Scenario 3); however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' willingness to assist someone who is d/Deaf or hard-of-hearing (as in Scenario 3).

Taken together, results show that attitudinal factors are the best predictors of respondents' willingness to help in the specified model. Respondents

who (a) agree more strongly that they would help PWDs if given the opportunity and those who (b) who feel more comfortable having social relationships with PWDs are more likely to express a willingness to help someone who is d/Deaf or hard-of-hearing (as in the given scenario).

However, as the identified predictors only account for 3.0% of the observed variation in the data, follow-up research is recommended to better account for the factors associated with respondents' sentiments in this regard.

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

4.5 REGRESSION ANALYSES: ASSISTING SOMEONE WITH A DEVELOPMENTAL DISABILITY (SCENARIO 4)

4.5.1 Attitudinal factors — followed by age and gender differences — predict respondents' willingness to help someone with developmental disability (as in Scenario 4); however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' willingness to assist someone with developmental disability (as in Scenario 4).

Overall, results show that attitudinal factors are the best predictors of respondents' willingness to help in the specified model. Respondents who express greater interest in learning how to support PWDs are more likely to express a willingness to help someone with a developmental disability (as in the given scenario).

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

4.6 COMPARISON WITH QUALITATIVE DATA

According to the quantitative findings in this chapter, most respondents would assist someone with blindness or visual impairment, someone who is a wheelchair user and someone who is d/Deaf or hard-of-hearing as in

Scenarios 1-3 but less than half of those surveyed would assist someone with a developmental disability as in Scenario 4.

These scenarios were in fact inspired by the real-life experiences recounted by several respondents in the qualitative phase of the study. Indeed, respondents in this phase had shared that they or those they know encountered difficulties similar to those depicted in the scenarios:

> There are things that people like us can't do. Obviously cannot do [sic]. If I go outside, I take bus, I cannot see the number, I got to ask people...when I approach people and so on, sometimes you may encounter ... problems that people never thought of [sic]... universally, when you carry a white cane, people [should] realise that, oh, you cannot see properly, or you cannot see, ...But many times at the bus, when blind people like us ask, people just walk away [sic]. Sometimes, people will not answer you, sometimes people will, you know, "Yeah, yeah, yeah, okay, okay", then they just walk away without telling you [sic]. So, you are left not knowing what is happening [sic]. These are some of the things that people like us will face.

> — "Edward", a retiree who acquired visual impairment at the age of 52, currently aged 59 years old (inspiration for Scenario 1)

> I've been talking to SMRT many many times already, it's the gap [between the train and the station platform] [sic]. ...Quite a numbers [sic] of us will always [get] stuck in that, that hole [when using wheelchairs]... It give me a trauma, that's why now I'm very afraid of going to MRT [sic].

> Because, that time, it's that, the, the, the, the front caster [got] stuck inside [the gap between the train and the platform]. And the door closed. ... It closed and I shout, I shout for help and everybody's just (mimics aloof demeanour), then I say, "Can you PRESS?!" [sic].

Then finally somebody pressed it and the bell ring, the whole MRT stopped ... everybody come in, they not looking helping you, everybody just sit and look [sic]. ...I got scared from there.

— "Fay", a housewife with acquired disability. She relies on a manual wheelchair for mobility (inspiration for Scenario 2)

For accessibility, transportation, in terms of, like, [an] emergency. Okay, what I have experienced, like, first-hand ... Like, the breaking down of those MRT services, right, so the train stopped … at the Chinese Garden [MRT Station] ... So, many of the passengers ... came out from the [train] cabin. … I was wondering, I do not know [what happened] [sic]. So, I stayed put, I waited. Then, when I saw the people, like, how come there is no movement [sic]. For the train [sic]. So, I came out and there wasn't any information. There wasn't any information of any kind. ... I feel that in Singapore, we are still not ready, for, let's say, [an] emergency situation for the deaf community [sic].

— "Mabel", a 40-year-old working professional in the education sector. "Mabel" has been hard-of-hearing since birth and she uses hearing aids on both ears (inspiration for Scenario 3)

Caregivers as tired as they are, they are also very scared to let their child live independently. They tend to be overprotective. Even if the child is 21 and they [still] don't want the child to develop independently [sic]... I know one parent very open with her child travelling, she is, like, 21, she was doing fine, but then, recently, she has earphones, she start to sing very loudly in the bus ... and the problem is that people in the bus don't understand [sic]. And, the police was called in. So, the mum got a call from the police saying that come and collect your daughter [sic] ...the parents, they want to let go but some of them when they

do let go, something happened and then they start to [say], like — "No, no, no, I don't [allow] my children to travel alone anymore because I'm afraid that might happen" [sic].

— "Sid", a professional working in the disability sector (inspiration for Scenario 4)

However, one visually impaired respondent indicated that he has had good experience being assisted by the public in situations similar to that described in Scenario 1 (as previously cited in section 3.8):

Compared to the last 10 years, now, now it's better. Now people [are] being more inclusive. For example, like, ... the [members of the] public, will ask me — do I need help? ...

... waiting for, uh, buses at the bus stop right, there will be people who will come to us to assist, um... assist us to our bus, lah [sic]. Like, sometimes, even if they... will take [a] different bus ... they will wait until we will board the bus ..., then they will take the next bus.
— "Alex", a 40 year old working professional in the services industry who is visually-impaired

It is evident from the quantitative findings that respondents are less willing to assist someone with a developmental disability (as in Scenario 4) when compared to people with other disabilities as described in Scenarios 1-3. This reluctance is consistent with observations from respondents in the qualitative phase who perceive that persons with invisible disabilities tend to face more misconceptions and stigma from members of the public (see sections 2.4, 3.8 and 3.15 for more elaboration):

As a sports agency ... we have come across many different types of disabilities right [sic], ... it's becoming a lot more accessible for persons with physical, [and] visual impairments … the unseen ones, ... Intellectual impairment, ... they don't understand, like, they see a person, it looks perfectly normal [sic]. But what, what's

wrong with that person? Yeah, so, that one has been very difficult to try and explain lah.
— "Kelly", running programmes for the disabled

If it's [an] unseen [disability], there's a lot of misconception [sic]. And, I think it's not that we are a mean society, like; everyone is so busy right?...And you don't really have the time or space to go and, "Eh, you know, should I help this caregiver who looks so distressed? Should I help calm the child?", etcetera. So, I don't know, I think it's about educating people also.
— "Gary", a professional working in the early intervention sector.

Although there is awareness from the employer to be inclusive, but a lot of times there is some limitation because what happens is, for clients who is not totally disabled [sic]... this are the group that is facing challenges when finding jobs for them [sic],... on appearance they ... the client doesn't look disabled but in the communication and cognitive issue there is some issue.
— "Kat", working in the disability sector

Overall, findings from both phases of the study demonstrate that more remains to be done to educate members of the public so that they are more aware of different disabilities and what they should do to assist PWDs respectfully if the situation calls for it. Indeed, a lack of confidence and education on the part of members of the public is thought by some to be the key factor contributing to uncomfortable encounters between PWDs and neuro-typical/able-bodied persons in public spaces (as cited previously in sections 2.4 and 3.8):

People don't know how to help sometimes. And because of that they come to be a little bit more indifferent rather than outright discrimination [sic].
— "Bryan", a health professional working in the disability sector.

I think there's also one thing that we have probably done well in terms of visible disability, but the invisible disabilities may not be doing so well [sic]. The awareness, I think, we have been seeing a lot of videos on Facebook and all that, but sometimes we do see that this person have special needs and things like that [sic], but they have been put in a negative connotation and doing things that are not so nice ..., although I would say we have done a lot more compared to the past.

— "Bethany", staff providing therapy for people with physical disabilities

... there's so much ignorance for blind people, especially [in terms of] how to handle blind people...I've experienced it in the hospital and in homecare and stuff like that ... for example, many times I tried going to escalators, or stairs, or crossing the traffic light [sic]. I'm shocked even nurses does this [sic]. They hold a blind person's arms without asking. ... you don't hold a blind person's arm just like that without asking him, or without asking for permission [to see] if he need[s] help first. And it is the way they handle the arm, you are not supposed to carry the arm, ...

Although I know they meant good, but it could be harmful ... both them and the VI (visually-impaired) [sic]. ... they can't see who's touching them [sic]...and VI have this reaction, it's not a violent reaction [sic]. It's a reaction because they [are] blind, [and] they don't know who's trying to touch them or attack them.
— "Roman", a professional who acquired visual impairment in adulthood

... they don't know how to manage, they don't know how to react, they don't know what to do. ... I come in the wheelchair, some people will stand to offer me [their] seat, ...

So, people are not aware... sometimes they feel very unsure. I think it's important that, you know, they learn, just treat us as, everyone, as a member.

... if you want to offer help, you ask. But other than that, everyone continues on [sic]. ... it's not just disability, someone falls, people also don't bother to stop and help people [sic]. ... the graciousness of Singaporeans, or people living in Singapore is not as I would like to expect [sic].

... awareness, lah, that not every disabled person cannot think [sic]. Right? ...the way people like, "Oh, you're working ah? Really ah? You working ah?". … some people will run after you to give you money. I says, "Auntie, don't worry. I'm fine, I'm working. Never mind." [sic]. ...

...that's how people…the minute you have a disability means up there is nothing [sic]. But, that's how society treats people with disabilities [sic], and if people stop treating people like that, then maybe everyone learns that they have something to offer.
— "Maureen", volunteer/professional at an SSA. 'Maureen' is a wheelchair-user.

Chapter 5

Views on Social Inclusion

CHAPTER 5: VIEWS ON INCLUSION

5.1 OVERVIEW

5.1.1 Respondents are most likely to support meeting the full needs of PWDs when it comes to the accessibility of public spaces and the provision of residential services; they are least likely to do so when it comes to the provision of education

Respondents were asked to indicate the degree to which they think the Singapore government should provide services for persons with disabilities across the various domains of education, employment, residential life, social life, public space and means-testing[141].

For each domain, respondents indicate the extent to which the government should intervene to provide for PWDs. More specifically, respondents are invited to choose between two outcomes per domain — one which aims to meet the full needs of PWDs (i.e., a more expansive and generous set of provisions) or an alternative which only seeks to meet some basic needs (i.e., less generous). Respondents may also indicate whether they identify "strongly", "moderately" or "slightly" with their preferred outcome.

5.1.1.1 Education

Outcome 1.1: Aiming to meet Full Needs
Education for children with disabilities should focus on allowing them to reach their fullest academic potential possible

Outcome 1.2: Aiming to meet Basic Needs
Education for children with disabilities should focus on providing them with basic skills to be independent

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[141] This section includes question items 21-26 (please refer to the complete list of question items in Annex 2 for greater detail).

5.1.1.2 Employment

Outcome 2.1: Aiming to meet Full Needs

Ensure that all PWDs are able to pursue their ideal form of employment and aspire like other workers to well-paying jobs

Outcome 2.2: Aiming to meet Basic Needs

Ensure that all PWDs are able to find work that gives them a basic salary

5.1.1.3 Residential Services

Outcome 3.1: Aiming to meet Full Needs

Ensure that all PWDs have access to residential options where they can participate meaningfully in community life on top of having needs for shelter and safety met

Outcome 3.2: Aiming to meet Basic Needs

Ensure that all PWDs have access to residential options where needs for shelter and safety are met

5.1.1.4 Sensitivity Training

Outcome 4.1: Aiming to meet Full Needs

Ensure that students and workers in Singapore attend classes on interacting respectfully with PWDs

Outcome 4.2: Aiming to meet Basic Needs

Ensure that classes on interacting respectfully with PWDs are easily accessible for those who wish to educate themselves

5.1.1.5 Accessibility of Public Space

Outcome 5.1: Aiming to meet Full Needs

Ensure that all public spaces (e.g., playgrounds; shopping centres) are designed such that they are fully accessible for PWDs

Outcome 5.2: Aiming to meet Basic Needs

Ensure that some public spaces (e.g., playgrounds; shopping centres) are accessible for PWDs

5.1.1.6 Means Testing

Outcome 6.1: Aiming to meet Full Needs

Ensure that subsidies to help PWDs are given to all PWDs, regardless of their families' financial means

Outcome 6.2: Aiming to meet Basic Needs

Ensure that subsidies to help PWDs are given only to those whose families do not have the financial means

Ultimately, respondents are most likely to support meeting the full needs of PWDs when it comes to the accessibility of public spaces and the provision of residential services. However, they are least likely to do so when it comes to the provision of educational services.

Figure 30: Breakdown of Support for Meeting the Full Needs of PWDs vs. Support for Only Meeting Basic Needs, %
N = 1,801

Category	Basic Needs	Full Needs
Accessibility of Public Space	35	65
Residential Services	37	63
Employment	48	52
Public Education Campaigns	53	47
Financial Support	56	44
Education	68	33
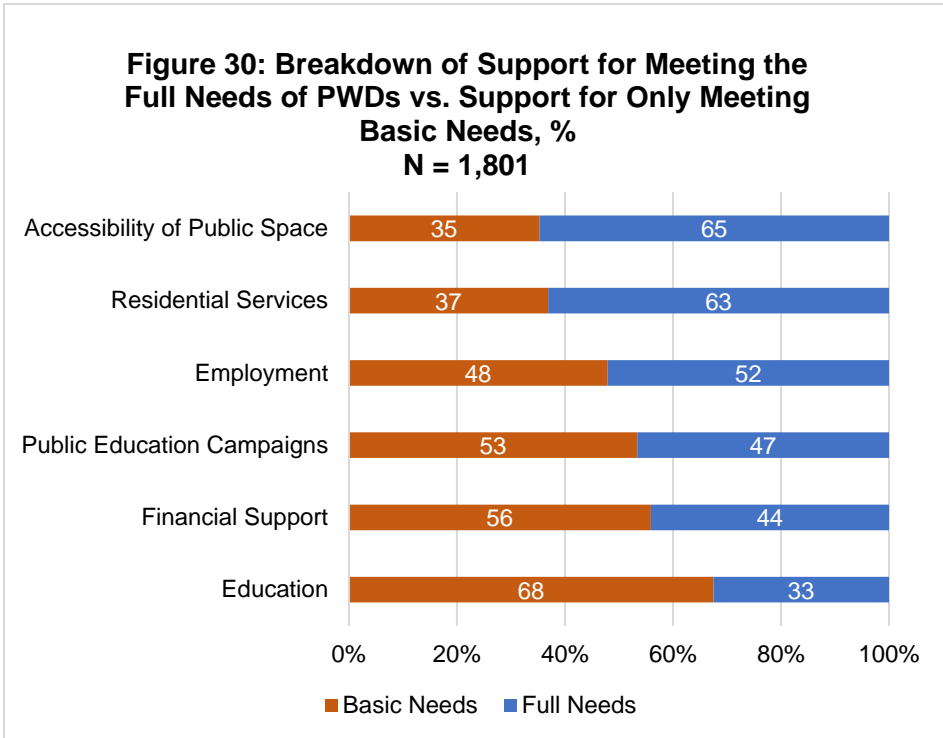
5.2 VIEWS ON INCLUSION: EDUCATION

5.2.1 Only about three in 10 support education for children with disabilities to focus on allowing them to reach their fullest academic potential possible rather than just focussing on providing them with basic skills to be independent

Education

Outcome 1.1: Aiming to meet Full Needs
Education for children with disabilities should focus on allowing them to reach their fullest academic potential possible

Outcome 1.2: Aiming to meet Basic Needs
Education for children with disabilities should focus on providing them with basic skills to be independent

Only about three in 10 (32.5%) support meeting the full educational needs of PWDs. All in all, 2.3% identify strongly with this outcome (i.e., outcome 1.1) while another 16.2% and 14.1% identify only "moderately" and "slightly", respectively.

Conversely, 37.4% identify strongly with the alternative outcome of meeting only the basic needs of PWDs when it comes to education. Another 27.6% and 2.4% indicate that they identify "moderately" and "slightly" with this particular outcome (i.e., outcome 1.2).

Figure 31: Breakdown of Support for Meeting the Full Needs of PWDs vs. Support for Only Meeting Basic Needs (Education), %
N = 1,801

- Strongly Identify With Basic Needs
- Moderately Identify With Basic Needs
- Slightly Identify With Basic Needs
- Slightly Identify With Full Needs
- Moderately Identify With Full Needs
- Strongly Identify With Full Needs
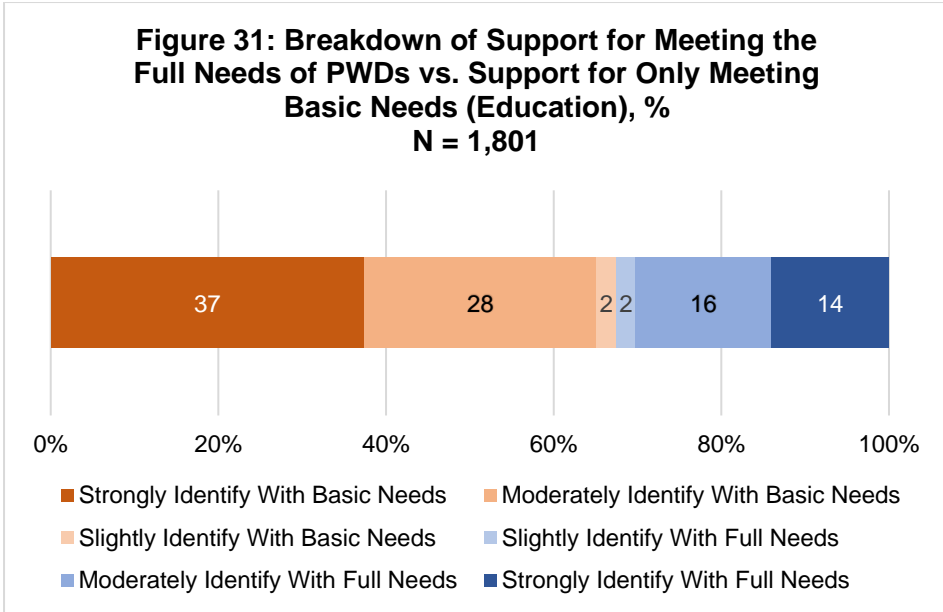
5.3 VIEWS ON INCLUSION: EMPLOYMENT

5.3.1 Slightly more than half support ensuring that all PWDs are able to pursue their ideal form of employment and aspire like other workers to well-paying jobs rather than just being able to find work that gives them a basic salary

Employment

Outcome 2.1: Aiming to meet Full Needs
Ensure that all PWDs are able to pursue their ideal form of employment and aspire like other workers to well-paying jobs

Outcome 2.2: Aiming to meet Basic Needs
Ensure that all PWDs are able to find work that gives them a basic salary

Slightly more than half (52.1%) support meeting the full needs of PWDs with regards to employment services. 3.9% identify strongly with this outcome (i.e., outcome 2.1) while another 25.4% and 22.8% identify "moderately" and "slightly", respectively.

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Conversely, 25.3% identify strongly with the alternative outcome of meeting only the basic needs of PWDs in the domain of employment. Another 19.8% and 2.8% of respondents identify "moderately" and "slightly" with such an outcome (i.e., outcome 2.2).

Figure 32: Breakdown of Support for Meeting the Full Needs of PWDs vs. Support for Only Meeting Basic Needs (Employment), %
N = 1,801
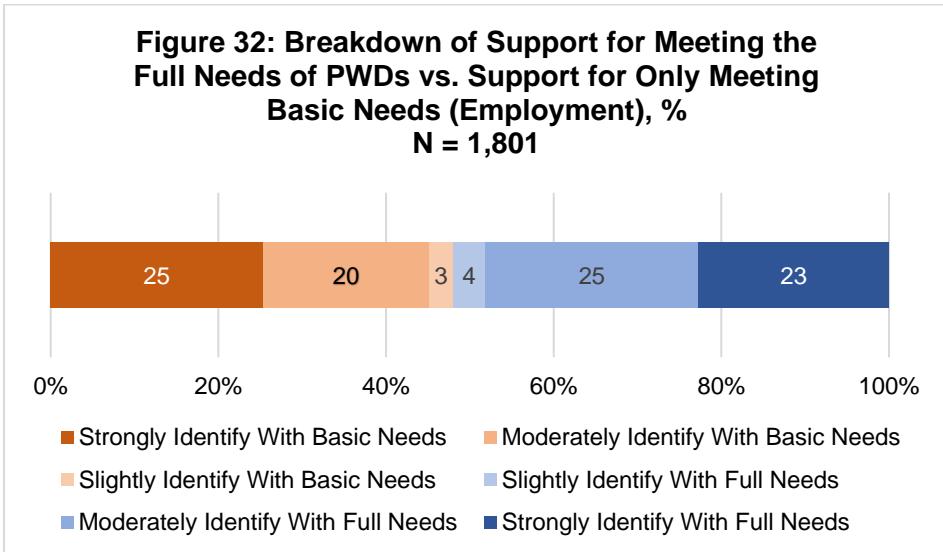
5.4 Views on Inclusion: Residential Services

5.4.1 Slightly more than three in five support that all PWDs have access to residential options where they can participate meaningfully in community life on top of having needs for shelter and safety met rather than just residential options for shelter and safety.

Residential Services

Outcome 3.1: Aiming to meet Full Needs
Ensure that all PWDs have access to residential options where they can participate meaningfully in community life on top of having needs for shelter and safety met

Outcome 3.2: Aiming to meet Basic Needs
Ensure that all PWDs have access to residential options where needs for shelter and safety are met

Slightly more than three in five (63.1%) support meeting the full needs of PWDs with regards to residential services. 4.9% identify strongly with this outcome (i.e., outcome 3.1) while another 25.7% and 32.6% identify "moderately" and "slightly", respectively.

Conversely, 19.6% identify strongly with the alternative outcome of meeting only the basic needs of PWDs in the domain of residential services. Another 14.9% and 2.3% of respondents identify "moderately" and "slightly" with this particular outcome (i.e., outcome 3.2).

Figure 33: Breakdown of Support for Meeting the Full Needs of PWDs vs. Support for Only Meeting Basic Needs (Residential Services), %
N = 1,801

| 20 | 15 | 2 | 33 | 26 | 5 |

- Strongly Identify With Basic Needs
- Moderately Identify With Basic Needs
- Slightly Identify With Basic Needs
- Slightly Identify With Full Needs
- Moderately Identify With Full Needs
- Strongly Identify With Full Needs

5.5 VIEWS ON INCLUSION: SENSITIVITY TRAINING FOR WORKERS AND STUDENTS

5.5.1 Slightly more than half support ensuring that students and workers in Singapore attend classes on interacting respectfully with PWDs rather than such classes being available to those who want to educate themselves

Sensitivity Training

Outcome 4.1: Aiming to meet Full Needs
Ensure that students and workers in Singapore attend classes on interacting respectfully with PWDs

Outcome 4.2: Aiming to meet Basic Needs
Ensure that classes on interacting respectfully with PWDs are easily accessible for those who wish to educate themselves

Slightly more than half (53.4%) support meeting the full needs of PWDs with regards to sensitivity training. 4.2% identify strongly with this outcome (i.e., outcome 4.1) while another 19.7% and 22.7% identify "moderately" and "slightly", respectively.

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Conversely, 26% identify strongly with the alternative outcome of meeting only the basic needs of PWDs in the domain of sensitivity training. Another 23.2% and 4.2% of respondents identify "moderately" and "slightly" with this particular outcome (i.e., outcome 4.2).

Figure 34: Breakdown of Support for Meeting the Full Needs of PWDs vs. Support for Only Meeting Basic Needs (Sensitivity Training), %
N = 1,801

■ Strongly Identify With Basic Needs   ■ Moderately Identify With Basic Needs
■ Slightly Identify With Basic Needs   ■ Slightly Identify With Full Needs
■ Moderately Identify With Full Needs   ■ Strongly Identify With Full Needs
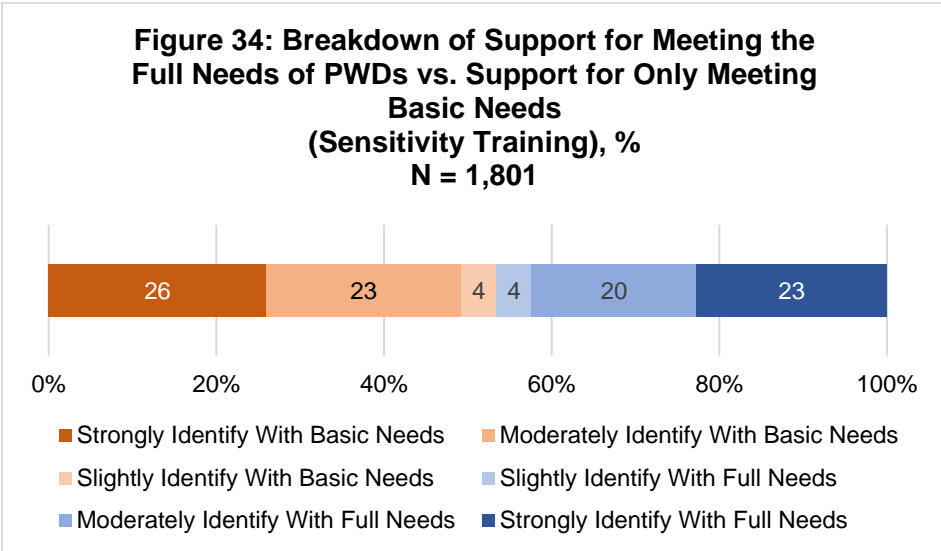
5.6 VIEWS ON INCLUSION: ACCESSIBILITY OF PUBLIC SPACE

5.6.1 More than three in five support that all rather than just some public spaces (e.g., playgrounds; shopping centres) are designed such that they are fully accessible for PWDs

Accessibility of Public Space

Outcome 5.1: Aiming to meet Full Needs
Ensure that all public spaces (e.g., playgrounds; shopping centres) are designed such that they are fully accessible for PWDs

Outcome 5.2: Aiming to meet Basic Needs
Ensure that some public spaces (e.g., playgrounds; shopping centres) are accessible for PWDs

More than three in five (64.7%) support meeting the full needs of PWDs when it comes to the accessibility of public space. 4.4% identify strongly with this outcome (i.e., outcome 5.1) while another 22.2% and 38.1% identify "moderately" and "slightly", respectively.

Conversely, 16.7% identify strongly with the alternative outcome of meeting only the basic needs of PWDs with regards to the accessibility of public space. Another 16.4% and 2.2% of respondents identify "moderately" and "slightly" with this particular outcome (i.e., outcome 5.2).

Figure 35: Breakdown of Support for Meeting the Full Needs of PWDs vs. Support for Only Meeting Basic Needs (Accessibility of Public Space), %
N = 1,801

17	16	2	38	22	4

- Strongly Identify With Basic Needs
- Moderately Identify With Basic Needs
- Slightly Identify With Basic Needs
- Slightly Identify With Full Needs
- Moderately Identify With Full Needs
- Strongly Identify With Full Needs

5.7 VIEWS ON INCLUSION: UNIVERSAL OR MEANS-TESTED SUBSIDIES

5.7.1 More than half support providing means-tested subsidies for PWDs rather than universal subsidies

<u>Means Testing</u>

Outcome 6.1: Aiming to meet Full Needs
Ensure that subsidies to help PWDs are given to all PWDs, regardless of their families' financial means

Outcome 6.2: Aiming to meet Basic Needs
Ensure that subsidies to help PWDs are given only to those whose families do not have the financial means

More than half (55.9%) support the provision of means-tested subsidises to PWDs. 31% identify strongly with this outcome (i.e., outcome 6.2) while another 21.6% and 3.3% identify "moderately" and "slightly", respectively.

Conversely, 4.7% identify strongly with the alternative outcome of providing subsidies for all PWDs regardless of their financial means. Another 19.4% and 20% indicate that they identify "moderately" and "slightly" with this particular outcome (i.e., outcome 1.2).

Figure 36: Breakdown of Support for Meeting the Full Needs of PWDs vs. Support for Only Meeting Basic Needs (Means-Testing), %
N = 1,801

■ Strongly Identify With Basic Needs	■ Moderately Identify With Basic Needs
■ Slightly Identify With Basic Needs	■ Slightly Identify With Full Needs
■ Moderately Identify With Full Needs	■ Strongly Identify With Full Needs
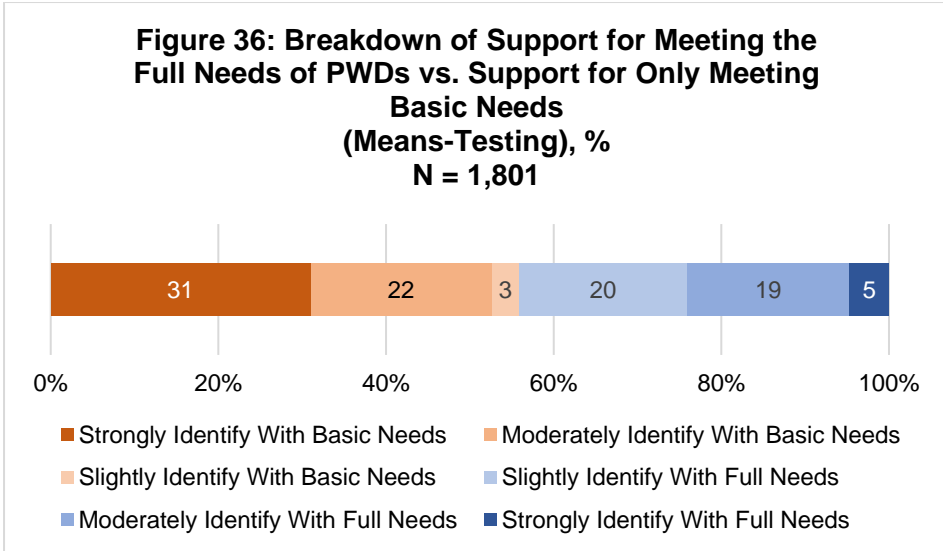
5.8 REGRESSION ANALYSES

5.8.1 Attitudinal factors — followed by age differences — predict respondents' views on inclusion; however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' views on inclusion.

Overall, the results indicate that attitudinal factors are the best predictors in this model of respondents' views on inclusion. Respondents who agree more strongly that people should provide for themselves (instead of looking to the government to ensure everyone is provided for) are less likely to express support for the fulfilment of full needs. Conversely, those who feel more comfortable having social interactions with PWDs are more likely to express support in this regard.

However, as the identified predictors only account for 6.0% of the observed variation in the data, follow-up research is recommended to better account for the factors associated with respondents' sentiments in this case.

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

5.9 COMPARISON WITH QUALITATIVE DATA

The quantitative results detailed in this chapter indicate that the majority of respondents — at least more than half — support meeting the full needs of PWDs (as defined earlier in this chapter) when it comes to employment services, residential services, sensitivity training, the accessibility of public space and means-testing services. However, only about three in 10 support meeting the full needs of PWDs when it comes to education.

While this result may seem at odds with the strong support expressed for greater government involvement in the provision of (a) educational services and (b) education subsidies for PWDs (see Figure 43 and Figure 46 in Chapter 7, respectively), it is possible that respondents in the quantitative phase have assumptions that academic pursuits are fundamentally inappropriate for children with disabilities given the competitive nature of Singapore's meritocratic education system. To elaborate, the vast majority of respondents in the quantitative phase perceived that education for children with disabilities should focus simply on providing them the basic skills with which to be independent, instead of encouraging them to realise their academic potential to the fullest.

In the qualitative phase of the study, it was evident that there were a range of views on what the goal of education should be when it came to children with disabilities as some wished for a stronger focus on academics while others hoped for a stronger emphasis on life skills training instead. The differences in these views appear to stem in large part from the differences observed in the circumstances of the students in question:

> He's visually impaired but he's smart. But, in our society you got to be smart and visually not impaired [sic]. Then you can be successful. So, that is a basic issue with our society...because ... his only problem is he's visually impaired, and the syllabus is taught very differently.

> My son is a pure science student. How to go to the visually impaired school? I know, Bedok secondary school is for the

visually impaired, [those with] special needs. But the subjects taught are very different...he won't even get into Uni[versity]!
— "Benjamin", father and a caregiver of an adult son with acquired visual impairment

Because, the[ir] schooling has all been SPED (Special Education) school [sic]. ... they cannot read. They cannot write. They can only speak. So, what else can they do? But, they haven't learned...[their] education will always be lacking if they are always in SPED, [and then] they'll never come out of SPED. Right?
— "Mag", volunteer/professional at an SSA serving people with disabilities.

But when we talk about certain schools and they serve moderate to severe needs. That profile, having difficulties... um...things still are very academic in nature? Um...but with children who have profound difficulties, that's not the direction you should go. ...When teachers teach things that are not meaningful for the students, they [will have a] meltdown...so, they will go into the class and learn things that are not meaningful and [not] at their level. So, in the end, we also have to deal with a lot of other issues.
— "Jay", currently employed at a SSA which provides early intervention services

When I had some issues with my son, I kept asking for behavioural intervention. All the teachers will start giving me things like "Oh, he can do addition with carry-over". But that's not what I want. But, that's all the teachers know because they've been taught like that.
— "Evie", a caregiver to a son with intellectual disability.

Ultimately, results indicate that special attention needs to be given to the particular aspirations, needs and circumstances of each child before deciding upon the best course of education in each case. While academic pursuits may not be beneficial for children with certain disabilities, it is

evident that they are a diverse group and that some may be just as suited as able-bodied or typically developing children are for an academic education. Indeed, several respondents saw room for more to be done to equalise opportunities for academic advancement so that children with disabilities who are suited for academic study have the same opportunities that their neuro-typical and able-bodied counterparts do:

> ...like, six years ago, when my son doing fine intellectually they were saying that he needs to be in a special school — [and] I've got nothing against special school because my son is special need — but, I know that if my son has the capability to be in a mainstream school, why can't he be in a mainstream school?

> Then, we have to write in to this minister, that minister [and] have to go and see this MC, MP, to tell them that my son has to go to this mainstream school, and it took so many appeal[s] to the extent [that] I [even] wrote into the president['s] [office], to say I will renounce my citizenship if my son cannot be in a mainstream school! Because how can you define a child's education and learning because of his mobility, right? No child's education should be jeopardised, you see?

> And when I used the term "I will renounce my citizenship", the government step[ped] in. "Okay, okay, your child can go into the mainstream school but somebody [will] have to sit at the school", then my helper was sitting, which is fine, because I don't want outsiders to keep carrying my son, or, I don't want someone to drop him, ... why does a parent have to go through so much of trauma, so much of appeals, so much of documentation [just] to get into [a] mainstream school?

> And, in the end, you see, he succeeded and he's a head prefect. So, can you imagine if I didn't give him that opportunity, and he's getting almost AL1 for all his subjects,

you see? ...so, a child should not be looked down just because the child has [a] different ability.
— "Madhu", a caregiver to a pre-teen son who suffers from a rare disability

In my case, I was educated in Malaysia, lah...So, the teacher there really drilled us up. And, we had to do a second language. Although the instruction is in English, lah, but we had to do [a] second language and that was Malay which I did not know at all. Not a little bit of Malay but we had to pass the second language. ...

But, that's the point, I feel that in Singapore, even till today, the school here, the lighthouse school, the primary school there, I don't understand why they don't encourage second language, which, I feel is very wrong [sic]...what I mean is that, they don't have second language for the blind students. I mean be it Malay or even Chinese, lah. I think they should have...You know, I'm sure in the normal school for the sighted, you all have second language also, right?...But why not the blind?
— "Gwendolyn", a 72 year old with total visual impairment

...you look at him, he's intelligent, [he can] pass O' level, A' level with flying colours and the now you get to this. I go to [name of educational institution]), [and they tell me] "sorry no subsidy for you"...Socially, it's very difficult to get internship for him.

Now [in] Uni[versity] [education], you must have [an] overseas attachment, how is he going to go? …....but how is he supposed to go independently? Am I supposed to follow?
— "Benjamin", father and a caregiver of an adult son with acquired visual impairment

When it comes to employment services, most respondents in the qualitative phase also express that PWDs should be able to pursue their ideal form of employment and aspire to well-paying jobs:

I would like to see more deaf job taker in more field[s]. Because the majority work in either admin or in FnB (food and beverage). ... But there's no other... like maybe be a nurse or be a boss or being a pilot [sic]. ... They did not have the thing to think far ahead [sic]. Yeah. So, I want them to think of every possibility, think of what they want to be. Here [in] Singapore, they are not taught to inspire themselves.
— "Wendy", a professional. 'Wendy' was born deaf.

It is about being person-centred, what will give this person a reasonably good life here in Singapore [sic]. Reasonably good life doesn't mean that we bring him to Disneyland, RWS (Resorts World Sentosa), you got charity organizing all these [sic]. This is not [a] good life. Good life is about having choices [sic]. If you don't like your job, there would be another job available that you could actually apply to.

Today there are a lot of people in sheltered workshop[s], [and] they might not be happy. But the parents say "you BETTER stay on, because there's NOTHING else out there for you. Even if you are not happy, GO!" That's not quality of life. Quality of life would be, "I don't like the job, I prefer this kind of job." There is opportunity available.
— "Michael", a father and caregiver of an adult daughter with intellectual disability

Similarly, most perceived too that PWDs should have access to residential services which allow them to participate meaningfully in community life:

I think we, we should try to — as much as possible — not to have a wall in between normal and PWD [sic]. So. even talk about hostels right? [sic] Whether they can be in a normal hostel versus you build one that is meant for PWDs [sic]. So, you tend to ringfence them all the time. And, also tend to have additional labels for them.

- "Fern", a professional employed in the disability sector

So again, even [when it comes to] homes, we are also advocating for choices of home. Right from institutionalise[d] home[s] to community living [models], which means that HDB (Housing Development Board) needs to tweak the policy a little bit to allow them to stay in HDB [sic]. A few friends… get together, they CAN'T (original emphasis) form a family unit but they would maybe do better staying together.

And the housing unit would have special sensors, including panic button they can push and the camera can be activated, and somebody can actually monitor the home [sic]...higher functioning one, they might be able to, or do better staying out in the open [sic].
— "Michael", a father and caregiver of an adult daughter with intellectual disability

if I were to leave him alone, like you know, if he stays in a HDB [flat] all by himself, he will be very happy to be alone. ... Nobody disturb me, I can watch my TV, [but] it will be great if there is a community living and then there's maybe a canteen where he can come, just finish his job, and then you…food to eat, stuff like that, and then, maybe, you know, there is a hall for them to get together, at least there are people around him, you know, so that he can maybe, he more or less might interact with some of them, and things like that [sic].

See, it's a community, a village, rather than stay in HDB flat, maybe some old uncle, auntie will be quite nice to talk to him, other than that I think he will be very happy to be alone, although on the social side, he is quite okay, you talk to him he will talk to you [sic]...You know, so I feel that this…a community living is a good thing.

- "Germaine", mother and caregiver of an adult son with intellectual disability

On the issue of access to public space, there was likewise strong support in the qualitative phase for the design of inclusive public spaces that are fully accessible and may be shared by people with and without disabilities:

I think we need to have community spaces for these caregivers to go to. Actually, to have a child with Special Needs is a very lonely experience. It's very hard for people to understand what it means to have a child with Special Needs.

And some of them they do have very unique needs, like, there's one parent that I have that doesn't bring the child out because he or she is tube fed and she doesn't want the child being seen tube fed in public [sic]. And, therefore, they don't go out at all and they stay at home. Because they are always at home they don't have that kind of outlet. They don't go out, they are not in touch with the world.

So, I think, even to have public spaces that are catered for things like that, or when a child has a meltdown in a shopping mall, to have a safe place for the child to go to, is very important [sic]...

So, if parents know that, okay, this particular place has a facility for children with Special Needs, yes, I will be willing to go this place [sic]. Or, in the community there is a particular place I can go to where my child has a meltdown, then I will be willing to bring my child out. I think it is important to have places like that for caregivers.
— "Yvonne", a professional in the education sector

So, of course, so this inclusive playground you have a swing, but it's very safe you can put the child, even someone with disability they can just swing... they, kind of piloted a few...two or three, but if it's helpful I think they should build it within [all] the playground[s], existing

> playground[s] so that you introduce inclusive play...and not ringfencing [PWDs] again.
> — "Fern", a professional employed in the disability sector

> I think we are improving but we are not there yet. I mean inclusiveness can't be, like, the public walkway...obviously it's specially just for the handicapped. It [should] becomes like part of the norm for the community regardless of where I travel, I go school, I go market [sic]. I mean...[like] it's not something very special because it's something very compulsory for every neighbourhood [sic]. But, I think we haven't reach there yet… it would be good if we can come to a point, where the public, the community, everywhere we go, people ... accept it as part of the norm of the community [sic].
> — "Jean", a professional employed in the disability sector

Some respondents believed that Education to help people develop sensitivity to the needs of PWDs should be mainstreamed and mandated. Others highlighted that public education was a crucial step in the path towards inclusion:

> I just feel like education could reach out to more, to, people who... , not exposed to those with special needs. Because, ... , those awareness events the people who come are people who already know those — those special needs [sic]. So maybe... can make it compulsory for the school to teach the students, or go to workplaces, to reach out to those whom may never even met somebody [with a disability before].
> — "Sandra", working in a senior management role in the private education sector

> It is important for us to build some of the school curriculum and tell them that there is this, the society at large consists [of] all these different people [sic]. Not everyone is normal, like what you see every day [sic]. So, when you see a child

as a student, as a friend, what must you do to help him or her?

It starts from school, education. ... the child spends a lot of time in school [sic]. So, it's important for our MOE (Ministry of Education) part of things to weave this part inside [sic]. So, when we bring in this PWD into the class, the allied health, the children, the parents all understood [sic]. So, slowly we build this inclusivity from young. Yeah.
— "Fern", a professional employed in the disability sector

My first thing is still employment. So… second, ... , is that to have more awareness [sic]. Among the members of public ... in terms of understanding persons with disabilities [sic]. Like, for example, understanding the role of guide dogs. Understanding [the] needs of vision impaired, person[s] with wheelchair[s] and things like that. So, that one needs more understanding [sic]...Guide Dogs Singapore do a lot of outreach talks [sic]. They do a lot of awareness to the public [sic]. But, on the other hand, actually, the government should be creating a lot of awareness, lah, for us [sic]. So, these are the things that I hope the government can do more in doing the policies [sic].
— "Timothy", middle aged professional with visual impairment

Meanwhile, respondents who brought up the topic of means-testing in the qualitative phase also typically did so to point out that subsidies should be given to PWDs without considering their families' financial means:

It's based on the household income. But, I have many, many cases where they are — this client is in the category of high earner, and, uh, she herself is, uh, not earning a lot [sic]. They don't allow the subsidy because they're [calculated] based on [the overall] household [income].

I find that you're telling them to be independent, and yet they still have to be dependent on their own family members to pay for their, uh, technology device — it doesn't make sense, ...we're also trying to encourage independence, but this is not helping them at all.
— "Tessa", a professional who is Deaf.

Our side has lots of those kind[s] of stories ... The person with disabilities lives with family members who don't get along, who are not really supporting them. These family members are higher income, so the per-capita income goes up, so they don't meet [the] means-testing [criteria], and they don't get the help they need [sic].
— "Kwek", an employee in the disability sector who is visually impaired

There's not much choice. There's only ONE service out there and DIE DIE I have to go in. And then, you means-test — that's the first problem. Second problem, my daughter is already 23, if she's NOT disabled, she would be able to stand on her own as a family unit. The family income will be calculated.

Today, because she can never graduate from the family. I've got to BEAR it, you know, we talk about the subsidy, means-testing and family income, she end up not able to get subsidy [sic]. I feel that… that is pretty unfair. ... it's NOT person-centred...they actually look at your family's income to determine if she qualify...NOT whether that person NEEDS that kind of help or not.
— "Michael", a father and caregiver of an adult daughter with intellectual disability

Overall, a substantial proportion of respondents in both phases of the studies expressed support for meeting the full needs of PWDs when it comes to employment services, residential services, sensitivity training, the accessibility of public space and services being available to all PWDs. Follow-up research is needed to better understand the views of

Singaporeans when it comes to the goal of education for children with disabilities. That said, respondents in the qualitative phase have reiterated that children with disabilities who are suited for academic pursuits should receive the same opportunities that able-bodied and typically developing children do for their academic development.

Chapter 6

Public Trade-Offs

CHAPTER 6: PUBLIC TRADE-OFFS

6.1 AN OVERVIEW

6.1.1 Overall, the vast majority of respondents — more than eight in 10 — express support for policy outcomes that entail greater benefits for PWDs; this is even after considering potential inconveniences which may occur for people without disabilities as a consequence

Respondents were presented with a series of outcomes which entail greater benefits for persons with certain disabilities while also running the risk of inconveniencing other members of the public or disrupting the status quo142. Respondents were then asked to select their most preferred policy outcome.

Four sets of trade-offs were outlined for their consideration, as follows:

"In recent years, greater attention has been given to the building of an inclusive society. In certain cases, efforts to facilitate the greater inclusion of PWDs may entail changes for persons without disabilities.

For each of the scenarios that follow, please select the response which best represents your own view."

6.1.1.1 Trade-off 1: Audible Traffic Lights (Question Item 41)

"Audible traffic lights enable persons with visual impairment to cross any street independently. However, they can create noise at odd hours during the day and night which some consider to be a nuisance. Would you personally support the installation of audible traffic lights throughout Singapore?"

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[142] This section includes question items 41-44 (please refer to the complete list of question items in Annex 2 for greater detail).

6.1.1.2 Trade-off 2: Carpark Lots (Question Item 42)

"Accessible carpark lots reserved for PWDs allows greater ease in travelling. However, this arrangement will mean fewer carpark lots for those without disabilities. Would you personally support increasing the ratio of accessible carpark lots reserved for PWDs?"

6.1.1.3 Trade-off 3: Audio Announcements (Question Item 43)

"The announcement of queue numbers in medical settings (e.g., polyclinics; hospitals) and public service settings (e.g., accessing ICA services) would allow persons with visual impairment to use these services independently. However, it results in noise for other service users. Would you personally support the establishment of such announcements in these settings?"

6.1.1.4 Trade-off 4: Public Housing (Question Item 44)

"Housing forms which allow PWDs to live in public housing estates and share common spaces (e.g., corridors, lifts, void deck, playgrounds, food centres, parks, shops) can enable them to lead more active lives in the community. However, neighbours/fellow residents may have to adapt and learn how to engage PWDs appropriately throughout their everyday life. Would you personally support the establishment of such housing forms as the default in Singapore?"

The aim of these question items is to better understand respondents' willingness to make accommodations and accept societal changes for the goal of building a more inclusive society.

Overall, the vast majority of respondents — more than eight in 10 — express support for outcomes that entail greater benefits for PWDs. On the whole, however, they are the most likely to support the institution of audio announcements in public settings (i.e., Trade-off 3) and the least likely to support increasing the ratio of carpark lots reserved for people with disabilities (i.e., Trade-off 2).

6.2 TRADE-OFF 1: AUDIBLE TRAFFIC LIGHTS

6.2.1 Close to nine in 10 (89.5%) express support for the installation of audible traffic lights in Singapore despite the possible drawbacks as specified in Trade-off 1

Figure 37: Whether One Would Support the Installation of Audible Traffic Lights in Singapore, % N = 1,801
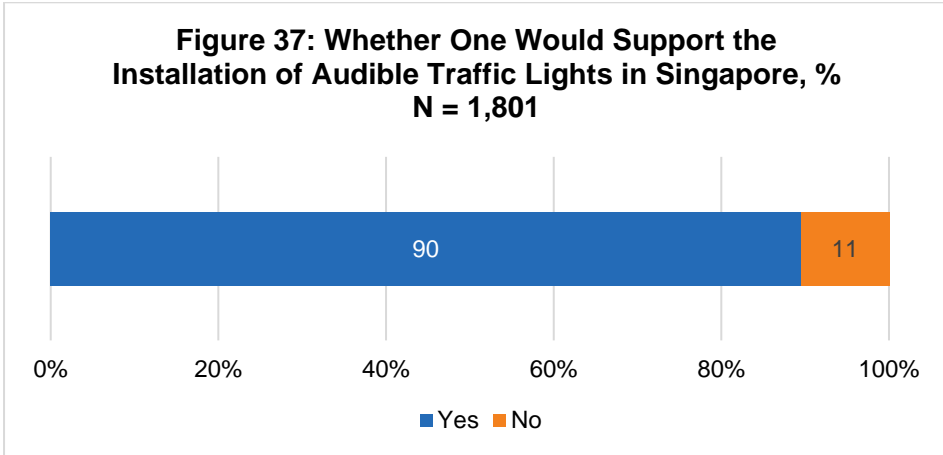
6.3 TRADE-OFF 2: CARPARK LOTS

6.3.1 More than eight in 10 (84.7%) support raising the ratio of accessible carpark lots reserved for PWDs despite possible drawbacks as specified in Trade-off 2

Figure 38: Whether One Would Support Increasing the Ratio of Accessible Carpark Lots Reserved for Persons with Disabilities, % N = 1,801
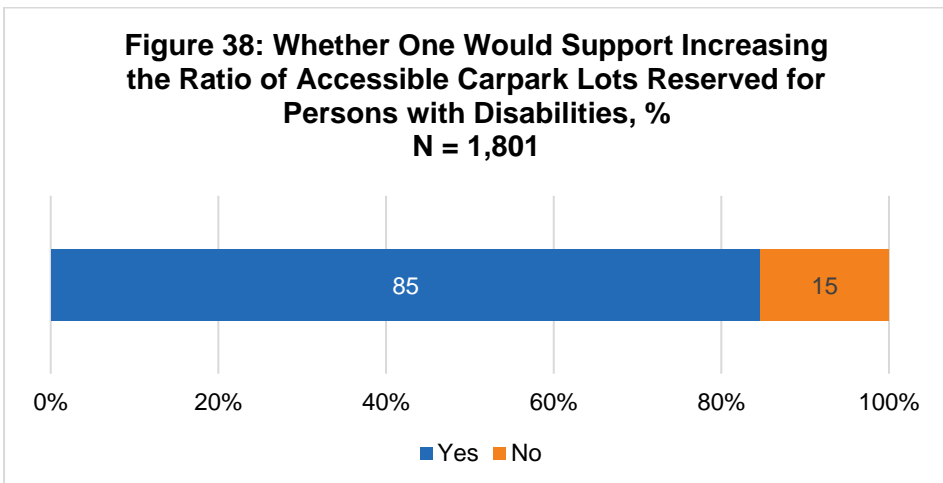
6.4 TRADE-OFF 3: AUDIO ANNOUNCEMENTS

6.4.1 More than nine in 10 (92.1%) support the establishment of audio announcements in medical and public service settings despite possible drawbacks as specified in Trade-off 3

Figure 39: Whether One Would Support the Establishment of Announcements in Medical and Public Service Settings, %
N = 1,801

92	8

■Yes ■No
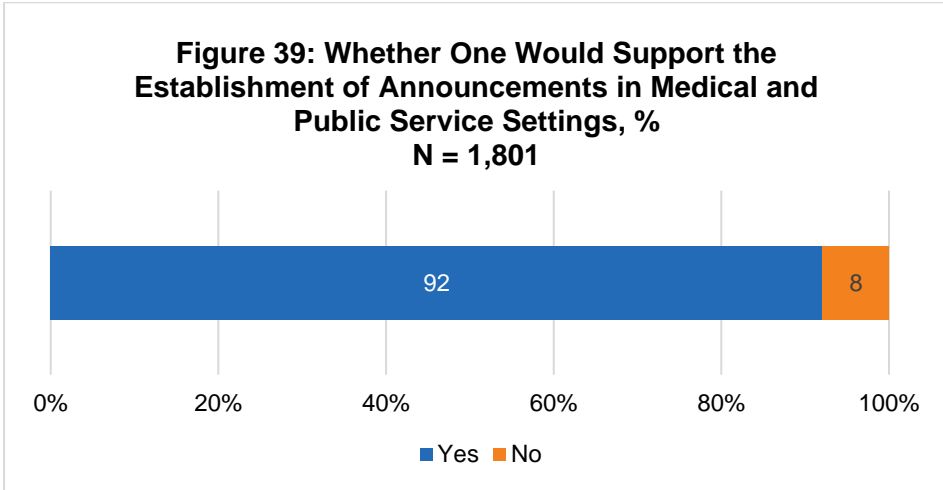
6.5 TRADE-OFF 4: PUBLIC HOUSING

6.5.1 Close to nine in 10 (92.4%) support the development of housing forms that enable PWDs to lead more active lives in the community, despite possible as specified in Trade-off 4

Figure 40: Whether One Would Support Housing Forms that Enable Persons with Disabilities to Lead More Active Lives in the Community, %
N = 1,801
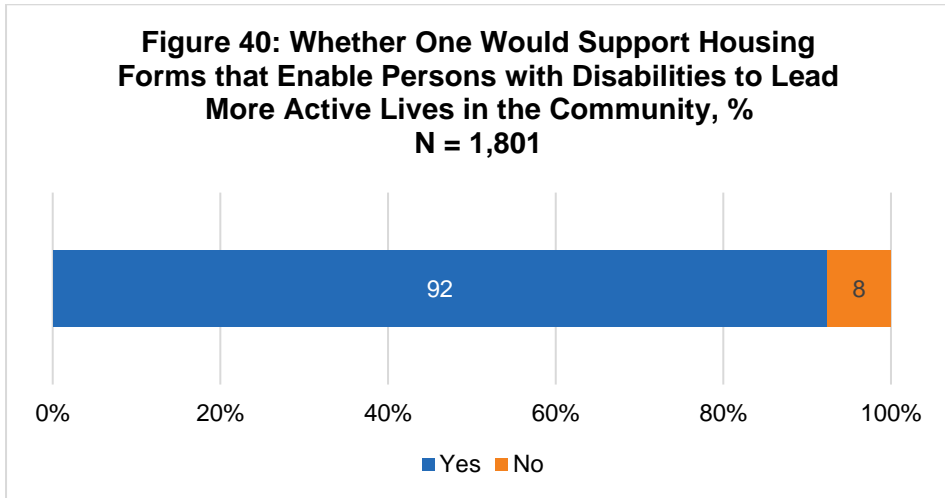
6.6 REGRESSION ANALYSES

6.6.1 Attitudinal factors — followed by social networks, educational differences and differences in housing type — predict support for inclusive policies

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' support for inclusive policies.

Overall, the final results do show that attitudinal factors are the best predictors of views on inclusion in the specified model. Respondents who are more likely to support inclusive policies are:

    (a) those who are more comfortable with having social relationships with PWDs;

    (b) those who are more comfortable having social interactions with PWDs; and,

    (c) those who express greater interest in learning how to support PWDs.

Conversely, respondents who (d) express greater concerns over potential social interactions with PWDs and who (e) agree more strongly that people should provide for themselves (instead of looking to the government to ensure everyone is provided for) are less likely to support inclusive policies.

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

6.7 COMPARISON WITH QUALITATIVE DATA

According to the quantitative findings in this chapter, the vast majority of respondents surveyed would support policy outcomes (as outlined in Trade-Offs 1, 2, 3 and 4) that entail greater benefits for PWDs even if some inconvenience is borne by people without disabilities as a result.

All but one of these trade-offs are inspired by real-life experiences recounted by respondents in the qualitative phase of the study. Most of these respondents shared that they desire certain changes to the status quo to better accommodate the needs of PWDs when it comes to audible traffic lights, audio announcements and public housing:

6.7.1 Needs and gaps (audible traffic lights)

> Traffic lights, ... the audible signals. Working with relevant authorities...when clients or PWDs (people with disabilities) actually call up, and actually tell them: 'Oh, you know, this particular traffic light has no sound; like, I'm blind. I need the sound to cross the road. If I don't then, I can't go to work, I can't go to school.' And then...the same thing [happens] over and over again, where they will ask you [in return] — "Oh, what time do you need to use the traffic light? You know... is it, is it until 9pm?", "Does that mean that after 9pm, I can't use the traffic light?" ... is it going to be like, "Oh, the residents are complaining, you know". And then... nobody questions it, you know, people just do it accordingly.
> — "Hannah", an employee in the disability sector

6.7.2 Needs and gaps (audio announcements)

Mostly, it's accessibility issues, like, okay if you talk about the hospitals, when the blind person walks into a clinic or into hospital setting, even not only in hospitals, even, like, banks and all [sic]… when they flash out the number, it is not announced, so you do not know when your number is being flashed out.

The other thing is, let's say, you are seeing a doctor in a hospital for instance, there are so many rooms even when — if they announce your number, you don't know where the rooms are. So, these are the issues that needs to be addressed I think [sic]. Because it's not always you can get your family members to accompany you to…to…to go with to the doctor or to go to some of these facilities [sic].
— "Marc", semi-retiree with total visual impairment since young,

6.7.3 Needs and gaps (public housing)

We are also advocating for choices of home. Right from institutionalise[d] home[s] to community living, which means that [the] HDB (Housing Development Board) needs to tweak the policy a little bit to allow them to stay in [a] HDB [flat]...

Give you an example, in this institutionalise[d] home, they actually do have [a] group of high functioning kids staying there. They are from destitute family, so they are staying there [sic]. They were able to get open employment, so they go out and work. When they get off from work, they don't go straight to their home. They make one big detour before going home. When we ask them why, they [say they] don't want people to know that they are staying in this [institutionalised] home. So they rather try to walk one round before going home. This group of people may do better if they can stay together in a HDB flat.

Another category, if you need a higher support need, there are a lot of families, with five-room flats, the children are all married off already. So, you get this 'empty nest' syndrome. This elderly can enrol themselves, get trained to be a houseparent [sic]. And then one or two of the rooms can be rented to this group of people with slightly higher support need who need some house supervision [sic].

Then after that, down the line, probably will be a group, community living, for example [name of community home]. And then all the way down to institutionalise[d] home[s], which is for [those with] the real high support need[s] [sic].
— "Michael", a father and caregiver of an adult daughter with intellectual disability

6.7.4 Areas of Progress

While the experiences of these respondents do point to continuing challenges faced by PWDs when it comes to accessibility and social inclusion, others have perceived some measure of progress in these areas as compared to the past:

BCA (Building Construction Authority), and, like, LTA (Land Transport Authority) like, write to us and ... talk to us and they are like... you know, they are like very open to, like, wanting to work with us to improve. And so, I think, like, it's a very big step from, like, three years plus when I was working then ... so, I think now they are, like, more open to it? ... maybe in the future they'll come up with something better, or they'll really re-look into their, their policies.
— "Hannah", an employee in the disability sector

Now that LTA (Land Transport Authority) is trying ... a trial run on the bus service to be able to announce at every bus stop so the vision impaired would know where and when to alight. So, they are testing out one of the service. ... So, I hope to see all these things happened in the future [sic].

— "Timothy", middle aged with visual impairment

What we are doing now in our EIPIC (Early Intervention Programme for Infants and Children) centres, is, like, we try to collaborate with external partners, like the NHB (National Heritage Board)… national library, and also some private partners like Petite Park, Explorer Kid ..., so these are some of the venues that we have strong partnership with, where we bring our parents and the children … we have more external stakeholders who want to collaborate, who are even sponsoring — [like,] for NHB they sponsored everything including the transport, ... it's quite welcoming as well. So, we can see that there are more external partners who want to collaborate and provide sponsorship to us.
— "Vinodhini", professional in the early intervention sector

NLB (National Library Board) has come to us to [ask us to] give...a consultation on how to make the library more inclusive, or like a corner, so, like, there are corners when a child have a meltdown, where can the child go to [sic]. The child need a quiet place, where can the child go to [sic]? In order for them to still be able to enjoy the facilities with the typical children [sic]. So, I think that was a very good initiative as they would like the children with special needs to be in the shared space as well.
— "Bethany", professional working in SSA

That said, while there have been recent efforts to make improvements in the areas of accessibility and inclusion, it should be acknowledged that some challenges do remain as noted by the respondents in this section. The high level of support expressed by respondents in the survey indicates scope to engage Singaporeans on these issues to craft better outcomes for PWDs in these areas.

Chapter 7

Disability in Singapore

CHAPTER 7: DISABILITY IN SINGAPORE SOCIETY

7.1 OVERVIEW

7.1.1 Overall, the majority of respondents — over three in five — indicate that the government should do more for people with disabilities in all areas specified

Respondents were asked to indicate whether the Singapore government should do less or more to support people with disabilities in four domains[143]: employment, education, accessibility of public space, accessibility of public transport and financial help.

Specifically, views were sought on whether the government should do less or more with regard to:
   a) protecting PWDs from discrimination by employers;
   b) providing job-matching services for PWDs;
   c) providing educational services for PWDs;
   d) ensuring the accessibility of buildings ;
   e) ensuring the accessibility of public transport; and,
   f) providing subsidies for the care and education of PWDs.

Overall, the majority of respondents — over three in five — indicate that the government should do more for people with disabilities in all areas specified. On the whole, however, they are the most likely to indicate this when it comes to the provision of educational services and the least likely when it comes to the protection of PWDs from the discriminatory behaviour of errant employers.

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[143] This section includes question items 57-63 (please refer to the complete list of question items in Annex 2 for greater detail).

7.2 VIEWS ON GOVERNMENT SUPPORT: PROTECTING PWDS FROM DISCRIMINATION BY EMPLOYERS

7.2.1 About three in five indicate that the government should do more to protect PWDs from errant employers who behave in a discriminatory way

Slightly over three in five (62.2%) indicate that the government should do more for persons with disabilities to protect them from the discrimination of errant employers. Conversely, 30.5% indicate that there should be no change from what is currently being done by the government while 7.3% indicate that less should be done.

Figure 41: Desired Level of Government Involvement in Protecting PWDs from the Discrimination of Employers, %
N = 1,801
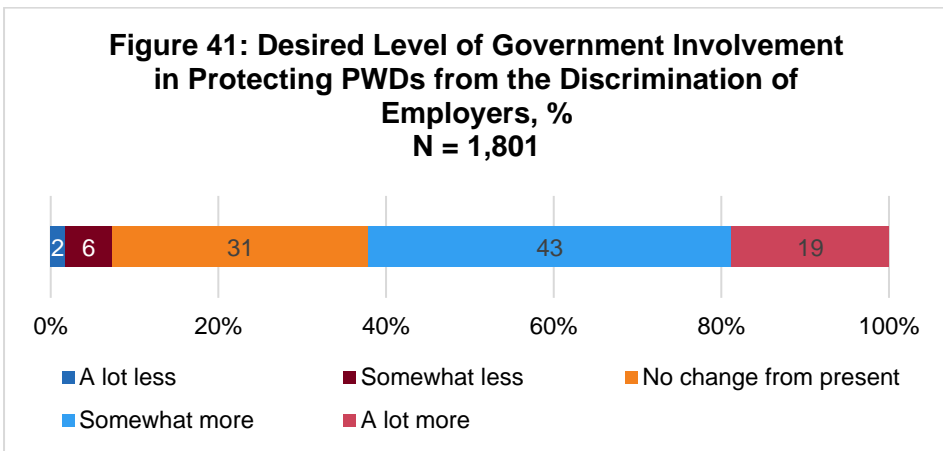
7.3 VIEWS ON GOVERNMENT SUPPORT: JOB-MATCHING FOR PWDS

7.3.1 Close to seven in 10 indicate that the government should do more to provide job-matching services for PWDs

Close to seven in 10 (69.8%) indicate that the government should do more to provide job-matching services for people with disabilities to help them find jobs reflecting their skills and interests. Conversely, 23.6% indicate that there should be no change from what is currently being done by the government while 6.6% indicate that less should be done.

Figure 42: Desired Level of Government Involvement in Providing Job-Matching Services for PWDs, %
N = 1,801
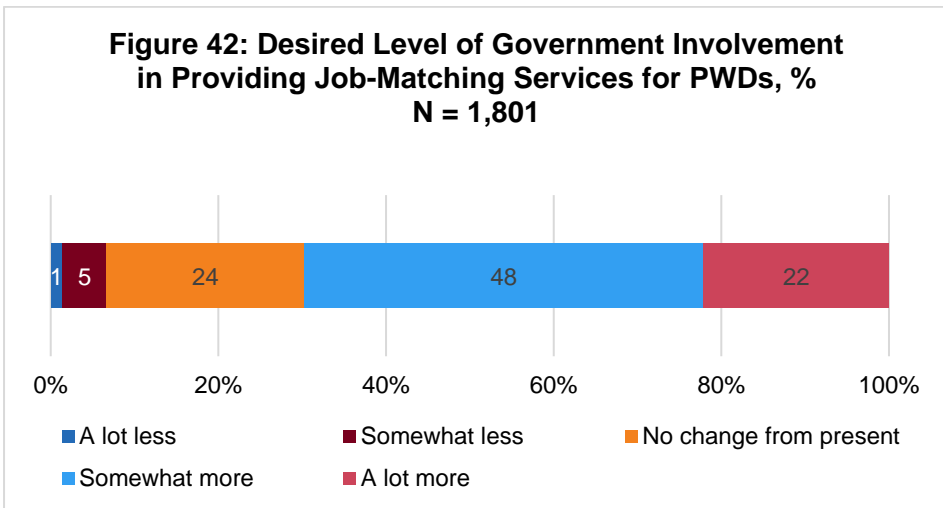
7.4 VIEWS ON GOVERNMENT SUPPORT: EDUCATIONAL SERVICES FOR PWDS

7.4.1 About seven in 10 indicate that the government should do more to provide educational services for PWDs

About seven in 10 (70.7%) indicate that the government should do more to provide educational services for people with disabilities that reflects their interests and maximises their talent . Conversely, 22.3% indicate that there should be no change from what is currently being done by the government while 7.0% indicate that less should be done.

Figure 43: Desired Level of Government Involvement in Providing Educational Services for PWDs, %
N = 1,801
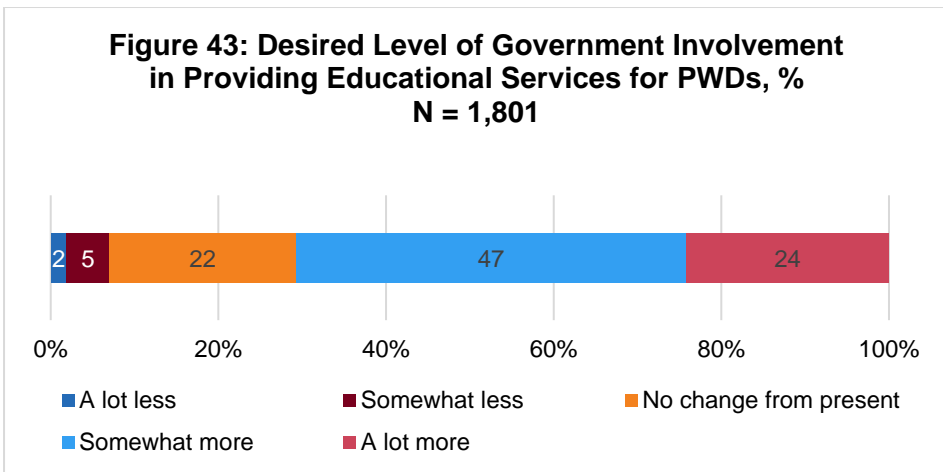
7.5 VIEWS ON GOVERNMENT SUPPORT: ACCESSIBILITY OF BUILDINGS

7.5.1 About seven in 10 indicate that the government should do more to ensure that Singapore's buildings are accessible to PWDs

About seven in 10 (70.3%) indicate that the government should do more to ensure that Singapore's buildings are accessible to people with disabilities. Conversely, 22.1% indicate that there should be no change from what is currently being done by the government while 7.6% indicate that less should be done.

**Figure 44: Desired Level of Government Involvement in Ensuring Accessibility of Buildings for PWDs, %
N = 1,801**

Legend:
- A lot less
- Somewhat less
- No change from present
- Somewhat more
- A lot more
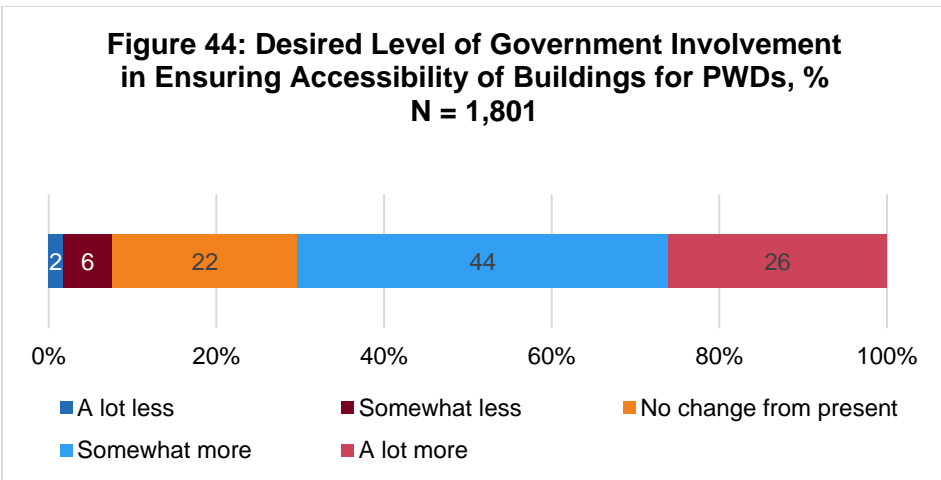
7.6 VIEWS ON GOVERNMENT SUPPORT: ACCESSIBILITY OF PUBLIC TRANSPORT

7.6.1 About seven in 10 indicate that the government should do more to ensure that public transport is accessible for PWDs

About seven in 10 (67.9%) indicate that the government should do more to ensure that public transport is accessible for people with disabilities. Conversely, 24.8% indicate that there should be no change from what is currently being done by the government while 7.3% indicate that less should be done.

Figure 45: Desired Level of Government Involvement in Ensuring Accessibility of Public Transport for PWDs, %
N = 1,801
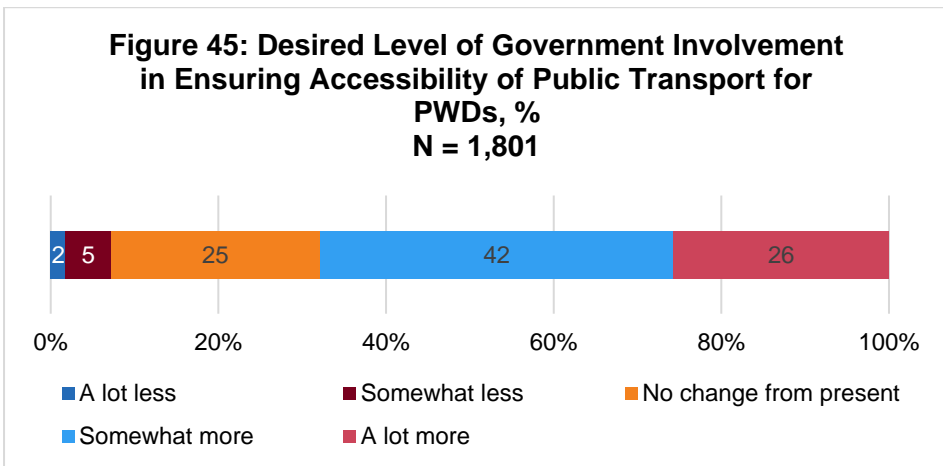
7.7 VIEWS ON GOVERNMENT SUPPORT: SUBSIDIES FOR THE CARE AND EDUCATION OF PWDS

7.7.1 Over three in five indicate that the government should do more to provide subsidies for the care and education of PWDs

Over three in five (65.9%) indicate that the government should do more to provide subsidies for the care and education of people with disabilities. Conversely, 27.2% indicate that there should be no change from what is currently being done by the government while 6.9% indicate that less should be done.

Figure 46: Desired Level of Government Involvement in Providing Subsidies for Care and Education of PWDs, %
N = 1,801

A lot less	Somewhat less	No change from present	Somewhat more	A lot more
2	5	27	45	21
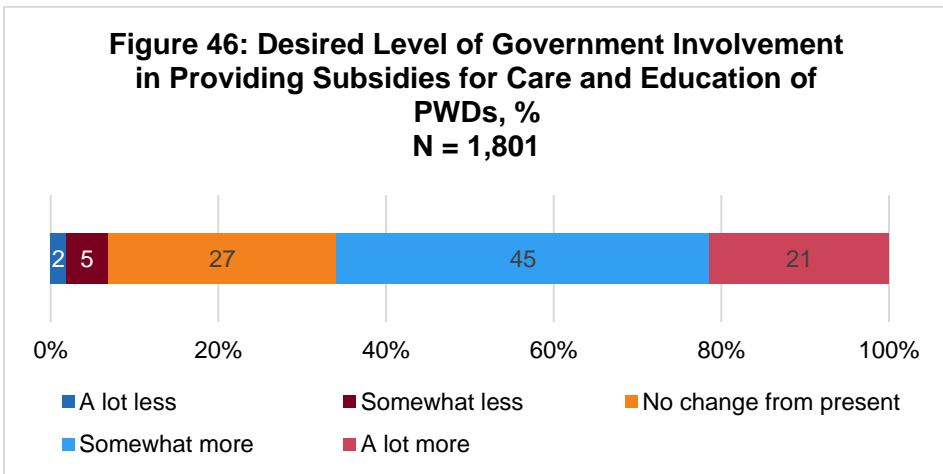
7.8 VIEWS ON GOVERNMENT SUPPORT: DIFFERENCES ACCORDING TO FREQUENCY OF CONTACT WITH PWDS

7.8.1 Respondents who have a high frequency of contact with PWDs are more likely to desire a higher level of government support for PWDs

Respondents with a high frequency of contact with PWDs are more likely to desire a higher level of government support for PWDs across the contexts specified. To illustrate, 36.3% of those in this category express that the government should do more to support people with disabilities (see Table 27 below). However, the same is reported by smaller proportions of those with a moderate and low-level frequency of contact (refer to Table 27).

In the regression analyses that follow (see section 7.10 below), this difference is investigated further to ascertain if frequency of contact is a predictor of respondents' views on government support even after the effects of other variables are controlled for.

Table 7: Desired Level of Government Support, by Frequency of Contact with PWDs

Frequency of Contact with Persons with Disabilities N = 1801	Desired Level of Government Support (%)			Total (%)
	Lesser to be done	No Change	More to be done	
Low frequency of contact	35.8	37.9	26.3	100.0
Moderate frequency of contact	29.1	37.4	33.5	100.0
High frequency of contact	31.5	32.2	36.3	100.0

7.9 REGRESSION ANALYSES

7.9.1 Attitudinal factors — followed by differences in housing type — are the best predictors of respondents' views on government support; however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' views on government support.

Overall, results indicate that attitudinal factors are the best predictors of respondents' views on government support in the specified model. Respondents who agree more strongly that individuals should provide for themselves (instead of depending on the government) are less likely to support government involvement in the support of PWDs. Conversely, respondents (a) who are more comfortable having social interactions with PWDs and (b) who express greater interest in learning how to support PWDs are more likely to express support in this regard.

For comprehensive technical details on the regression analyses and the full table of results, please refer to Annex 2 at the end of this report.

7.10 COMPARISON WITH QUALITATIVE DATA

According to the survey results in this chapter, it is evident that most respondents desire greater government action to support PWDs in several areas, including those of employment, education and public transport.

Respondents in the qualitative phase have pointed out several needs and gaps in these domains that could be better addressed in the future.

For instance, respondents have indicated the continued challenges faced by PWDs when it comes to employers who behave in discriminatory ways (cited previously in section 3.8 and 3.15), although also acknowledging that change is observable.

7.10.1 Needs and Gaps (discriminatory employers)

Respondents point out that some employers stereotype PWD as not performing well based on their very limited interaction with them. They also cite how employers do not consider them after knowing about their disability status and fail to allow them to show them how they may be good contributors to the workplace.

> A lot of employers associate poor performance with the disability when that is not necessarily true, ... the fact is [that] anyone, including people with disabilities, there are good people and bad people [sic], ... the people tend to only look at disability and then attribute everything to the disability, which is wrong [sic].

> So, this is like a mindset which needs to be changed. But it's very entrenched, it's like at all levels, it's not just employment, [it is the] general public.
> — "Kwek", an employee in the disability sector who is visually impaired

> ... when he graduated from ITE, we thought that he could get a job because he is in food science, ... [in]supermarkets, we have jobs everywhere. So, he went [for] interviews after interviews... Even the school counsellor was very shocked when I got back to her, I said can you please help Ken* (not his real name) ... he couldn't get [a job] [sic].

> ...the form states that you have to declare your medical history. So, on safe side, I told my husband, better put down, he said, don't put down, so many times, then I said, better put down, so we put 'autism' [sic]. I went with him, went to [supermarket chain] ... I was confident that he would get a job there ...

> And then, …this girl ... gave him a form to do with the other two candidates. So, when he filled up the form and everything, she collected the forms and she went into the

room, then after that ... she called the other two in, and she told my boy, you can go home now, I will call you in two weeks' time [sic]. In two weeks' time he didn't get a call, then he was very upset [sic]. ...he said, mom, how come I wasn't called, ... the other two candidates they are also from ITE, ... 'How come they got in and I didn't get it?' [sic]. Don't you think this is also prejudice?

— "Germaine", mother and caregiver of an adult son with ASD

when you look at employment for people with physical disabilities, we are also saying that they need to be treated equally like any able-bodied person, meaning [they should] have a fair interview process. ... give them an opportunity to present themselves too...What is very frustrating is ... you form your own impression even before meeting the PWD. ... that is really quite ... discouraging ... when, you go for interviews... HR people really play a very important part understanding how to deal with people with different disabilities, understanding their capabilities, potential ... that's important [sic]. Not many of us take time to do that.

— "CG", a career guidance coach in the disability sector

7.10.2 Progress (discriminatory employers)

At the same time, respondents have also shared how more has been done in recent years to provide better protections for PWDs in this area (cited also in section 3.8). They point to the work of organisations such as SGEnable in championing workplace inclusion for PWDs as well as more enlightened employers. These include the work

Our association provides jobs and place jobs for persons with ... disabilities ... we find many good policies in employment act, fair consideration, work act, uhm, work health and safety act, and even salary negotiations and all these are all very good [sic].

... we attended the enabling masterplan award for, to encourage and award employers who are very progressive in hiring people — hotels, national library board — there are several hundred this year ...

— "Aaron", a professional a professional working in the disability sector

I'm very passionate about people getting back to work and especially [for] those who are disabled...it's getting there. I think I'm very encouraged with the fact that we are having quite a bit of, uh, uh, awareness created through different organisations, especially SG enable taking to lead, uh, making sure there are some funds available for organisations who actually hire people, teach them how they can actually, uh, work together, integration is very important [sic]. So, they work also to teach the co-workers to receive a new person, coming physically disabled person. So I think I'm...I'm pretty much encouraged, uh, what's promptly needed is a little bit more on, uh, awareness again, knowing the different type of disabilities out there, cause' different disabilities require different means of, uh, transition into the workforce right.

— "Charlotte", a professional working in human resources

It's actually good that we are not simply following what other countries are doing, and therefore, which is actually to do a ground-up, more organic, uh… developments…um, to get co-workers to be more understand[ing]? To get more employer to be more accommodating… and so and so forth.

… the key difference that I actually see then is that a lot more effort has been put into recognizing good employers? ... a lot of support has been given to employers who are willing to try...it is government support...government-led support, um, in terms of the…the SSAs (social service agencies) therefore, we also do benefit from these

initiatives. Because, it makes it easier for us to then...
Create the eco-system, lah.
— "Hilary", a professional in the disability sector

7.10.3 Needs and Gaps (job-matching)

When it comes to job-matching, respondents have highlighted several challenges that continue to pose difficulties for PWDs. They note a limited period of support by agencies to ensure that the PWD is fully functioning and integrated in a workplace Sustained resources are needed as employment issues crop up over time as the PWD works in a business. Moreover there does not seem to be much opportunities in the market for those with acquired disabilities who still have much potential to contribute to the market.

> I think the issue right now in my centre is, when you place someone in the open employment, the support is only either six months or two years...So, it's very difficult for person, my clients...to sustain the job. ... {agency} only support through a period of time and that's it, you're on your own. So, when they are not supported, that's where it's very hard for them to sustain in a job. ... when you do job support, there is a lot of things you need to look into it. Let's say there's a change in the mentor, or there's a change in task; you need to ... orientate the learners. Or you need to orientate the workers ... because they are not familiar with working with people with disabilities.
> — "Sandra", working in a management role in the private education sector

> About starting Open Door programme? I think it's a great ... great start. My only ... it's my "but" ... is that the recommendation was for the Open Door programme to be expanded beyond the recruitment phase [sic]. Because, there were a lot of other issues that came from employers afterwards, because they didn't know how to handle the next stages. They didn't know how to handle performance review? They didn't know how to handle ... grievances. ...

They didn't know how to do training for career progression? Uh, and even how to do, uh, businesses in a fair way for persons with disabilities. Especially when talking about people with intellectual disabilities. Autism, any other...or any other psychosocial disabilities as well.

So, that kind of ability to have a kind of resource, that an employer can go for help or advice about how to better handle these issues could maybe solve some of the problems that come with companies not knowing how to do it...So they need a resource... to have a formal resource that they can tap onto — continue to see through the lifelong journey of employment with persons with disabilities [sic].
— "June", involved in advocacy and public education

So, we, in my organisation we are seeing increasing trend of persons with acquired disabilities and...due to their acquired disabilities right, previously they hold jobs, they hold high level jobs, and suddenly the whole world came crashing down.

This will get disability, okay, and maybe some of them are in... some of them are not trained in IT (information technology) [sic]. You know, IT is very essential now to do jobs. Some of them they used to hold blue collar jobs. They don't know nuts about IT. And suddenly due to a particular condition. They become disabled.

It's tough for this group of people in terms of getting employment. It's tough...because employers are looking at, generally lah, ah, skills, younger age...so I think support the policies in support of this group of persons with acquired disability need to be in place [sic].
— "Lily", a human resources specialist providing career guidance to people with disability

7.10.4 Progress (job-matching)

It should be noted that some respondents have also perceived improvements in the provision of job-matching services over the years (cited also in section 3.8). They note the additional support available for assistive devices at work as well as better orientation programmes.

> We, ... looking for job ... we can ask for assistance from the SG Enable, ... SG Enable... we need devices to be installed to the computers ... some of the companies ... will help to fund the equipment. ... they will help the to buy the equipment such as the voice-over ... For us to... to... to use in the office.

> ...besides that, some of the companies ... like before we work right, they will orientate us, how to move about in the office, some safety measures, ... how we walk to the restroom, how we go to the pantry [sic]. Their safety measures in the offices... definitely there's the improvement.
> — "Alex", a 40-year-old working professional in the services industry who is visually-impaired

> And then also, at least for a small section of population, the school-to-work programme enables them to continue education, at least on the job training, for one year. After 18. But again, it has limitations because who gets selected into the school to work programme is also a question. It's not everybody, it's only a very small percentage of the population… the positive part is that there are these options available, at least for these students who can make it.
> — "Penelope", a health professional in the disability sector

Chapter 8

Discussion and Conclusion

CHAPTER 8: DISCUSSION AND CONCLUSION

8.1 DISCUSSION OF KEY FINDINGS: PUBLIC ATTITUDES TOWARDS PEOPLE WITH DISABILITIES IN SINGAPORE

This chapter presents a discussion of the key findings as well as possible recommendations, wherever relevant.

8.1.1 Stigma Hierarchy

One of the notable trends discovered in this study is the tendency amongst respondents to express a preference for interactions with persons with physical and sensory disabilities, as well as a consistent avoidance across multiple contexts for persons with cerebral palsy, developmental disabilities and learning disabilities.

For instance, respondents are the most comfortable with friendships and professional relationships with persons with physical disabilities (see Chapter 2). However, they are the least comfortable having such relationships with persons with cerebral palsy. In addition, they are the most comfortable with social interactions involving persons with physical or sensory disabilities and the least comfortable with those involving persons with cerebral palsy or learning disabilities (see Chapter 3).

8.1.1.1 Recommendations

Taken together, these findings indicate that more should be done to foster public awareness, understanding and acceptance of those with disabilities –, concerted efforts should be made on behalf of those with cerebral palsy, developmental disabilities and learning disabilities.

8.1.2 Trends across Life Domains

8.1.2.1 Overall Trends

It should be noted, that despite the trends outlined above of a preference for interactions with persons who have certain disabilities, the overall spread of attitudes expressed by respondents indicate no strong sentiments of either fervent support for or vehement avoidance of persons in any category of disability type.

To illustrate, scores measuring respondents' degree of comfort with social relationships with people with disabilities range from scores indicating slight comfort to those indicating slight discomfort (see Chapter 2, Tables 1 and 5). In addition, the majority of respondents — over three in five — indicate that they would not have any specific concerns if interacting with persons with disabilities in professional or social settings (see Chapter 3, Figure 15).

In addition, the majority of the sample express support for the development of more inclusive socio-political outcomes. To illustrate, more than eight in 10 express support for policy outcomes that entail greater benefits for people with disabilities even at the potential risk of inconveniencing some persons without disabilities (see Chapter 6, Figures 37–40).

Furthermore, over three in five indicate that the Singapore government should seek to do more for people with disabilities when it comes to the provision of services related to employment, education, accessibility of public space, accessibility of public transport and financial help (see Chapter 7, Figures 41–46).

However, despite the support expressed by the majority of respondents in this sample for more inclusive outcomes, support was not uniformly expressed across all the contexts explored. Overall, respondents seem the most likely to support inclusive outcomes in the domain of public space. Conversely, they are the least likely to support the development of an education system allowing children with disabilities to reach their fullest academic potential.

8.1.2.2 Recommendations

More should be done to develop public outreach programs that inform and educate members of the public about what it is like to live with disabilities. Smaller workshops with the use of immersive such as those using Virtual Reality may be a useful. More awareness should also be raised about the principles of inclusion and what respectful interactions with people of varying disabilities should entail.

8.1.2.3 Domain: Employment

On the whole, the majority of respondents support the development of more inclusive outcomes in the realm of employment, as follows:

    a) Slightly more than half of the sample support meeting the full needs of PWDs with regards to employment services (Chapter 5, Figure 32).

    b) About three in five indicate that the government should do more to protect PWDs from errant employers who behave in a discriminatory way (Chapter 7, Figure 41).

    c) Close to seven in 10 indicate that the government should do more to provide job-matching services for PWDs (Chapter 7, Figure 42).

The vast majority of respondents — over seven in 10 — are also unconcerned with the prospect of working with people with disabilities in professional settings (Chapter 3, Figures 16 and 17).

When considering the minority of respondents who raised concerns over this scenario, the most cited one was the perceived difficulty of making special arrangements to accommodate people with disabilities effectively. This was followed by the concern that respondents did not know how to work with people with disabilities as well as worries that the latter would not be able to fit in socially at workplace environments. Moreover, fears that interactions with people with disabilities would become dangerous accounted for approximately one-tenth of all the concerns raised in this scenario.

8.1.2.4 Recommendations

More could be done to raise awareness amongst employees — as well as amongst employers — on the benefits of embracing diversity in the workplace and the ways in which:

(a) people with disabilities may be effectively accommodated at the workplace;

(b) able-bodied and neurotypical colleagues can work respectfully and effectively alongside fellow colleagues with disabilities; and,

(c) social environments at workplaces may be made more inclusive.

8.1.3 Frequency of contact

As aforementioned in Chapter 1, frequency of contact with people with disabilities is typically associated with a positive impact on attitudes towards PWDs[144,145]. These findings have been explained through the disconfirmation of negative stereotypes[146] and the improved understanding of disability[147] which may result through engaging in social interaction. In particular, "contact that is personal, intimate, and rewarding is associated with more positive attitudes toward individuals with disabilities"[148]. Thus, mere exposure to people with disabilities is not always enough to effect a positive impact on attitudes — if contact is not "personal, intimate and rewarding", frequency of contact may not lead to a positive shifting in attitudes as theoretically expected[149,150,151,152]. Indeed,

[144] Barr & Bracchitta, 2008.

[145] Wang et al., 2021.

[146] Yuker 1994, as cited in Barr & Bracchitta, 2008.

[147] Morin et al., 2013.

[148] Yuker 1994, as cited in Barr & Bracchitta, 2008, p.227.

[149] Barr & Bracchitta, 2008.

[150] Wang et al., 2021.

[151] Zheng, Q., Tian, Q., Hao, C., Gu, J., Tao, J., Liang, Z., Chen, X., Fang, J., Ruan, J., Ai, Q., & Hao, Y. (2016). Comparison of attitudes toward disability and people with disability among caregivers, the public, and people with disability: Findings from a cross-sectional survey. *BMC Public Health*, *16*(1), 1024. https://doi.org/10.1186/s12889-016-3670-0

[152] Keith, J. M., Bennetto, L., & Rogge, R. D. (2015). The relationship between contact and attitudes: Reducing prejudice toward individuals with intellectual and developmental disabilities. *Research in Developmental Disabilities*, *47*, 14–26. https://doi.org/10.1016/j.ridd.2015.07.032

in some contexts, high levels of exposure can even engender more negative attitudes towards people with disabilities[153].

To illustrate, a study of caregivers of persons with disabilities in China discovered that caregivers who had longer experience caring for persons with disabilities and therefore had a greater overall frequency of contact actually exhibited more negative psychological states and attitudes towards people with disabilities[154]. The researchers contended that most family caregivers in China receive inadequate state support, and as such, a higher frequency of contact did not translate to more positive attitudes towards people with disabilities because this contact was not typically rewarding for such caregivers[155].

In addition, research conducted by Keith and colleagues demonstrated that the quality of contact with people with disabilities is the crucial factor driving the positive association between contact and positive attitudes — while respondents who reported a higher *quality* of contact with people with intellectual disabilities (PWIDs) also reported lower levels of prejudice towards PWIDs, respondents who reported a higher *quantity* of contact with PWIDs actually reported higher levels of prejudice[156]. Thus, these researchers conclude that "if the quality of contact is not specifically considered, greater levels of exposure to [people with disabilities] may be experienced as uncomfortable or unpleasant and this may lead to associating these negative experiences with [people with disabilities]…themselves"[157].

In this study, mixed results are found with regards to the frequency of contact and attitudes towards people with disabilities — however, the most consistent finding is that of a positive association between attitudes and the frequency of contacts with persons with disabilities.

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[153] Wang et al., 2021.
[154] Zheng et al., 2016.
[155] Zheng et al., 2016.
[156] Keith et al., 2015.
[157] Keith et al., 2015, p.24.

8.1.3.1 Recommendations

Based on the overall findings, more public engagement exercises and inclusion programmes can be conducted to allow for more high-quality, rewarding interpersonal interactions between people with and without disabilities. A greater frequency of contact between these groups is expected to translate to more positive attitudes towards people with disabilities but only if this contact is personal, meaningful and non-superficial[158],[159]. In particular, academic research shows that "contact in a more structured setting and with institutional support facilitates more positive effects"[160],[161].

8.1.4 Attitudinal Factors

Attitudinal factors have consistently been shown to be the most powerful predictors of all the dependent variables examined in this study. These dependent variables may be further sub-divided into two broad themes according to their respective foci — namely, "inter-personal relationships with people with disabilities" and "socio-political outcomes involving people with disabilities".

Overall, the most consistent attitudinal predictors of these dependent variables are levels of:

  i.   interest in learning how to be supportive of PWDs;
  ii. comfort with social relationships with PWDs; and,
  iii. comfort with social interactions with PWDs.
  iv. comfort with social interactions with PWDs.

8.1.4.1 Recommendations

Going forward, public engagement exercises and inclusion programmes could encourage Singaporeans to take up practical skills in learning how to be supportive of people with disabilities. The reflections of those who are already doing so may be showcased to build awareness of the

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[158] Barr & Bracchitta, 2008.
[159] Keith et al., 2015.
[160] Pettigrew & Tropp 2006, as cited in Barr & Bracchitta, 2008, p.228.
[161] Keith et al., 2015.

meaningful experiences that may occur as a result and incentivise more to consider doing the same. More should also be done to facilitate meaningful social interactions and relationships between people with and without disabilities. Such measures may work in concert to raise more positive attitudes towards inter-personal relationships with people with disabilities and build greater support for the enactment of more inclusive policy outcomes.

8.2 CONCLUDING REFLECTIONS

The findings of this research study show that public attitudes towards people with disabilities in Singapore are largely positive, both in terms of having inter-personal relationships with people with disabilities and in the level of support expressed for more inclusive socio-political outcomes. Despite these positive attitudes though, the qualitative findings of the study demonstrate that based on the experiences of PWDs and their caregivers, PWDs may not always benefit from such inclusivity. In fact while many Singaporeans on the survey seem to accept the possible personal inconvenience related to greater inclusion, it is hard to evaluate whether such support will be maintained in the actual face of inconveniences. It is possible that many Singaporeans will still want the government to devise ways of accommodating the needs of PWDs with minimal inconvenience to themselves. Nonetheless the positive attitudes are laudable and provide hope that further interventions to make Singapore more inclusive for PWDs will be accepted, especially if they are rolled out progressively.

Going forward, it will be important to undertake regular evaluations of public attitudes towards people with disabilities to craft the most effective public engagement and inclusion programmes possible and thus work more efficaciously towards the goal of building an inclusive Singapore. However, inclusion needs to be sensible as it is impossible to be truly universal[162]. For instance, if the corridors of a housing block are to be wide enough to accommodate assistive mobile devices, it then becomes too big a space for blind people to navigate with ease. In such cases, there is

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[162] Lee, J. (2021). *The Jigsaw Puzzle Of Social Inclusion*. The ALUMNUS. https://nus.edu.sg/alumnet/thealumnus/issue-125/perspectives/panorama/the-jigsaw-puzzle-of-social-inclusion

a need to forgo universal design, and instead opt for "sensible" [163] inclusion, where inclusion is done on a best-efforts basis by consulting people with different disabilities at every stage of policy implementation and following up rigorously after such implementation.

[163] Lee, 2021, para 12.

Annex 1

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ANNEX 1: REFERENCES

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Annex 2

Regression Analyses

ANNEX 2: REGRESSION ANALYSES

Social Distance: Degree of comfort towards friendships with PWDs

Attitudinal factors — followed by social networks and education differences — are the most powerful predictors of feelings of comfort towards friendships with PWDs

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with feelings of comfort towards friendships with PWDs.

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i) demographic factors, (ii) respondents' social networks (measured by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

    a) <u>Question item 53 (Section 9: Disability in Singapore)</u>[164]
- a measure of the interest respondents express in learning to be supportive of PWDs

    b) <u>Question item 19 (Section 4: Views on Social Interaction)</u>[165]
- a measure of the degree of concern respondents express at the prospect of sharing public spaces with PWDs

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[164] Full question item: "I am interested to learn how to be supportive of PWDs."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

[165] Full question item: "Would you have any specific concerns about sharing public spaces (e.g. lifts, parks, restaurants) with PWDs? If yes, please select any options that apply."; Response options include "No, I would not have any concerns" and "Yes, I would have some concerns". Those selecting the latter are then further prompted to indicate their concerns — they may choose from a drop-down list or write their own answer by choosing "Others (please specify)".

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

Intercorrelations between multiple regression variables are reported in Table 3 and the regression statistics are in Table 4 (see below).

At stage one, demographical variables do not contribute significantly to the regression model, at $F_{(4,1789)} = 0.45$, $p = .77$. *Thus, demographic differences are not associated with the variation observed in respondents' sentiments.*

At stage two, the introduction of the variable measuring respondents' social networks further explains the model, and the change in R^2 [166] is significant, $F_{(1, 1788)} = 102.52$, $p < .001$. At this stage, only social network is a significant predictor of respondents' levels of comfort, uniquely explaining 5.4% of variation in the levels of comfort expressed towards friendships with persons with disability. *Respondents with more frequent contact with PWDs are more likely to be comfortable with friendships with PWDs when compared with those who have less frequent contact. As such, it is evident at this stage that social networks are better at predicting respondents' degree of comfort than demographic differences are.*

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[166] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.

At stage three, the introduction of variables measuring attitudes and perceptions explains a further 14.4% of variation in the data. All new variables in this category are shown to be significant predictors and the change in R^2 is also significant, at $F(2, 1786) = 160.29$, $p < .001$.

While demographic variables were not identified thus far (i.e., in Stage 1 and 2) to be predictors, the addition of new variables at the third stage of the analysis led to the identification of education as a significant predictor. Once the differences in respondents' attitudes towards PWDs had been controlled for, a negative relationship was detected between education and the dependent variable.

Specifically, results indicate respondents with higher levels of education are slightly less likely to be comfortable with friendships with PWDs when compared to those who have lower levels of education. Social networks continued to be a significant predictor — respondents with more frequent contact with PWDs were still more likely to be comfortable with friendships with PWDs when compared with those who have less frequent contact.

At this final stage of the model, education, social networks and attitudinal factors explain 19.6%[167] of the observed variation.

Overall, however, results show that attitudinal factors are the most powerful predictors of feelings of comfort towards friendships with PWDs. Respondents who express greater concern at the prospect of sharing public spaces with PWDs are less likely to be comfortable with friendships with PWDs. On the other hand, respondents who express greater interest in learning how to support PWDs are more likely to be comfortable with such friendships.

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[167] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

Table 8: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Levels of Comfort with Friendships with PWDs"

	1.	2.	3.	4.	5.	6.	7.	8.
1. Levels of Comfort with Friendships with PWDs	1.000							
2. Gender	-0.011	1.000						
3. Age	-0.004	0.002	1.000					
4. Education Level	0.024	-0.039*	-0.243***	1.000				
5. Housing Type	0.023	<.001	0.104***	0.234***	1.000			
6. Frequency of Contact with Persons with Disabilities	0.230***	0.020	0.013	0.222***	0.067**	1.000		
7. Interest in Being Supportive of Persons with Disabilities	0.370***	-0.015	-0.052*	0.098**	0.041*	0.256***	1.000	
8. Concerned with Sharing Public Spaces with Persons with Disabilities	-0.220***	-0.031	-0.088**	-0.006	-0.021	0.014	-0.089**	1.000

*Note. N = 1794; *p < .05, **p < .01, ***p < .001*

Table 9: Summary of Hierarchical Regression Analysis for Variables Predicting Levels of Comfort with Friendships with PWDs

Variable	*Standardised Coefficients*	*t*	sr^2	*R*	*Adjusted R^2*	*ΔR^2*
Step 1				.032	-.001	.001
Gender	-0.01	-.43	<.001			
Age	0.00	-.06	<.001			
Education Level	0.02	.74	<.001			
Housing Type	0.02	.78	<.001			
Step 2				.235	.053	.05
Gender	-0.02	-.75	<.001			
Age	-0.02	-.76	<.001			
Education Level	-0.04	-1.52	.001			
Housing Type	0.02	.76	<.001			
Frequency of Contact with Persons with Disabilities	0.24	10.13***	.05			
Step 3				.446	.196	.14
Gender	-0.02	-0.83	<.001			

Age	-0.02	-0.94	<.001			
Education Level	-0.05	-2.28*	.002			
Housing Type	0.01	0.45	<.001			
Frequency of Contact with Persons with Disabilities	0.16	7.33***	.024			
Interest in Being Supportive of Persons with Disabilities	0.32	14.34***	.092			
Concerned with Sharing Public Spaces with Persons with Disabilities	-0.20	-9.22***	.038			

*Note. N = 1794; *p < .05, **p < .01, ***p < .001*

Social Distance: Degree of comfort towards professional relationships with PWDs

Attitudinal factors — followed by respondents' social networks — are the most powerful predictors of feelings of comfort towards professional relationships with PWDs

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with feelings of comfort towards professional relationships with PWDs.

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i) demographic factors, (ii) respondents' social networks (measured by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

   a) Question item 53 (Section 9: Disability in Singapore)[168]
      ▪ a measure of the interest respondents express in learning to be supportive of PWDs
   b) Question item 51 (Section 9: Disability in Singapore)[169]
      ▪ a measure of the support respondents express towards the accommodation of PWDs by employers in places of work
   c) Question item 18 (Section 4: Views on Social Interaction)[170]

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[168] Full question item: "I am interested to learn how to be supportive of PWDs."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

[169] Full question item: "It is only right that employers find ways to accommodate those with disabilities at their workplaces."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

[170] Full question item: "Would you have any specific concerns about working with PWDs in a professional setting? If yes, please select any options that apply."; Response

- a measure of the degree of concern respondents express at the prospect of working with PWDs in a professional setting

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

Intercorrelations between multiple regression variables are reported in Table 7 and the regression statistics are in Table 8 (see below).

At stage one, demographical variables do not contribute significantly to the regression model, $F (4,1796) = 0.99$, $p = .41$. *Thus, demographic differences are not associated with the variation observed in respondents' sentiments.*

At stage two, the introduction of the variable measuring respondents' social networks uniquely explains a further 3.7% of variation in the data, and the change in R^2 [171] was significant, at $F (1, 1795) = 68.70$, $p < .001$. At this stage of the regression model, only social network is a significant predictor of the levels of comfort reported by respondents. *To elaborate, respondents with more*

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options include "No, I would not have any concerns" and "Yes, I would have some concerns". Those selecting the latter are then further prompted to indicate their concerns — they may choose from a drop-down list or write their own answer by choosing "Others (please specify)".

[171] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.

frequent contact with PWDs are also more likely to be comfortable with professional relationships with PWDs than those who have less frequent contact. It is also evident, at this stage of the model, that social networks better at predicting respondents' degree of comfort than demographic differences are.

At stage three, the introduction of variables measuring attitudes and perceptions additionally explain 17.4% of the variation observed in the data. The change in R^2 is also significant, at $F(3, 1792) = 131.75$, $p < .001$. All variables introduced at the third stage of the model are noted to be significant predictors. *Social networks continued to be a significant predictor — respondents with more frequent contact with PWDs were still more likely to be comfortable with professional relationships with PWDs when compared with those who have less frequent contact.* At this final stage of the regression model, social networks and attitudinal factors explain 20.9%[172] of variation in levels of comfort with professional relationships with PWDs.

Overall, however, results show that attitudinal factors are the most powerful predictors of feelings of comfort towards professional relationships with PWDs. Respondents who express greater concern at the thought of working with PWDs in a professional setting are less likely to be comfortable with professional relationships with PWDs. On the other hand, respondents who (a) agree more strongly that employers should accommodate PWDs in workplaces and who (b) express greater interest in learning how to support PWDs are more likely to be comfortable with such relationships.

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[172] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

Table 10: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Levels of Comfort with Professional Relationships with PWDs"

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Levels of Comfort with Professional Relationships with PWDs	1.000								
2. Gender	-0.003	1.000							
3. Age	0.006	0.005	1.000						
4. Educational Level	0.042*	-0.033	-0.257***	1.000					
5. Housing Type	0.027	0.025	0.132***	0.283***	1.000				
6. Frequency of Contact with Persons with Disabilities	0.197***	0.018	0.013	0.228***	0.096***	1.000			
6. Interest in Being Supportive of Persons with Disabilities	0.347***	-0.015	-0.045*	0.109***	0.054*	0.259***	1.000		
7. Perception that Employers should Accommodate Persons with Disabilities	0.285***	-0.004	0.016	0.044*	0.003	0.128***	0.435***	1.000	

8. Concerned about Working with Persons with Disabilities	- 0.297***	- 0.009	- 0.108***	0.020	-0.030	-0.005	- 0.158***	- 0.122***	1.000

Note. N = 1801; *p < .05, **p < .01, ***p < .001

Table 11: Summary of Hierarchical Regression Analysis for Variables Predicting Levels of Comfort with Professional Relationships with PWDs

Variable	Standardised Coefficients	*t*	sr^2	*R*	*Adjusted R^2*	*ΔR^2*
Step 1				.047	.000	.002
Gender	-0.002	-.09	<.001			
Age	0.02	.62	<.001			
Education Level	0.04	1.62	.001			
Housing Type	0.01	.52	<.001			
Step 2				.197	.036	.037
Gender	-0.007	-.30	<.001			
Age	<.001	.05	<.001			
Education Level	-0.006	-.22	<.005			
Housing Type	0.01	.28	<.009			
Frequency of Contact with Persons with Disabilities	0.20	8.29***	.001			
Step 3				.461	.209	.174
Gender	-0.004	-0.21	<.001			
Age	-0.020	-0.87	<.001			
Education Level	-0.018	-0.74	<.001			
Housing Type	0.003	0.14	<.001			

Frequency of Contact with Persons with Disabilities	0.13	5.66***	.014		
Interest in Being Supportive of Persons with Disabilities	0.21	8.78***	.034		
Perception that Employers Should Accommoda te Persons with Disabilities	0.15	6.29***	.017		
Concerned about Working with Person with Disabilities	-0.25	-11.49***	.058		

Note. N = 1801; *p < .05, **p < .01, ***p < .001

Social Interactions with PWDs across multiple settings

Attitudinal factors — followed by education, gender and age differences — are the most powerful predictors of feelings of comfort towards social interactions with PWDs across multiple settings; however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with feelings of comfort towards social interactions with PWDs in multiple settings.

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i)

demographic factors, (ii) respondents' social networks (measured by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

a) <u>Level of Comfort with Social Relationships with PWDs (Composite Measure)</u>
- a measure of the level of comfort respondents express with having friendships and professional relationships with PWDs (refer to "Key Measures" section in Chapter 1 for greater detail)

b) <u>Question item 53 (Section 9: Disability in Singapore)</u>[173]
- a measure of the interest respondents express in learning to be supportive of PWDs

c) <u>Question item 19 (Section 4: Views on Social Interaction)</u>[174]
- a measure of the degree of concern respondents express at the prospect of sharing public spaces with PWDs

d) <u>Question item 20 (Section 4: Views on Social Interaction)</u>[175]
- a measure of the degree of concern respondents express at the prospect of having

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[173] Full question item: "I am interested to learn how to be supportive of PWDs."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

[174] Full question item: "Would you have any specific concerns about sharing public spaces (e.g. lifts, parks, restaurants) with PWDs? If yes, please select any options that apply."; Response options include "No, I would not have any concerns" and "Yes, I would have some concerns". Those selecting the latter are then further prompted to indicate their concerns — they may choose from a drop-down list or write their own answer by choosing "Others (please specify)".

[175] Full question item: "Would you have any specific concerns about your child/children being in close contact with PWDs? If yes, please select any options that apply."; Response options include "No, I would not have any concerns" and "Yes, I would have some concerns". Those selecting the latter are then further prompted to indicate their concerns — they may choose from a drop-down list or write their own answer by choosing "Others (please specify)".

their child(ren) come into close contact with PWDs

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

Intercorrelations between multiple regression variables are reported in Table 10 and the regression statistics are in Table 11.

At stage one, demographical variables contribute significantly to the regression model, $F_{(4,1796)} = 8.24$, $p < .001$. As significant contributors to the model, gender and education explain 1.6% of the variation observed in the data. *Female respondents are more likely to be comfortable with social interactions involving PWDs than their male counterparts are. Respondents with a higher level of education are also more likely to feel comfortable. However, given that these differences only account for 1.6% of observed variation, these demographic factors are not shown to be strong predictors of respondents' sentiments.*

At stage two, the introduction of the variable measuring respondents' social networks uniquely explain a further 0.9% of variation in the data. The corresponding change in R^2 [176] was also

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[176] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.

significant, at $F(1, 1795) = 15.95$, $p < .001$. At this stage of the regression model, gender, education, and social network are all noted to be significant predictors of respondents' degree of comfort and collectively came to explain 2.4% of the observed variation in the data. *Specifically, female respondents, respondents with a higher level of education and respondents who have more frequent contact with PWDs are more likely to be comfortable with social interactions involving PWDs. However, as the overall figure of 2.4% is still low, social networks and demographic factors are not shown to be strong predictors of respondents' sentiments.*

The introduction of variables measuring attitudes and perceptions at stage three came to further explain 21.6% of the observed variation. Two variables in this category are identified to be significant predictors and the change in R^2 is also significant, at $F(4, 1791) = 127.99$, $p < .001$. Gender and education continue to be significant predictors. *Female respondents, respondents with a higher level of education and respondents who have more frequent contact with PWDs are still more likely to be comfortable with social interactions involving PWDs. However, once differences in respondents' attitudes towards PWDs are controlled for, social networks are no longer identified as a predictor. Meanwhile, age is identified to be a new predictor. Results indicate that older respondents are slightly less likely to be comfortable in social interactions with PWDs, when compared with younger counterparts.*

At this final stage of the model, differences in age, gender, education and the influence of attitudinal factors collectively explain 23.9%[177] of the variation observed in the data. *Ultimately, results show that attitudinal factors are the most powerful predictors of feelings of comfort towards social interactions with PWDs across multiple settings. Respondents who express greater concern at the*

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[177] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

prospect of sharing public spaces with PWDs are less likely to feel comfortable in social interactions with PWDs. On the other hand, respondents who feel more comfortable having social relationships with PWDs are more likely to feel comfortable in such interactions.

Table 12*: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Degree of Comfort with Social Interactions with PWDs across Various Settings"*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Degree of Comfort with Social Interactions with PWDs Across Various Settings	1.000									
2. Gender	0.074**	1.000								
3. Age	-0.058**	0.005	1.000							
4. Education Level	0.105***	-0.033	-0.257***	1.000						
5. Housing Type	0.028	0.025	0.132***	0.283***	1.000					
6. Frequency of Contact with Persons with Disabilities	0.114***	0.018	0.013	0.228***	0.096***	1.000				
7. Level of Comfort with Social	0.462***	-0.008	0.007	0.033	0.023	0.222***	1.000			

	1	2	3	4	5	6	7	8	9	10
Relationships with PWDs										
8. Interest in Being Supportive of Persons with Disabilities	0.197***	-0.015	-0.045*	0.109***	0.054*	0.259***	0.371***	1.000		
9. Concerned about Sharing Public Spaces with Persons with Disabilities	-0.215***	-0.031	-0.083***	0.005	-0.031	0.018	-0.230***	-0.084***	1.000	
10. Concerned about Child Being in Close Contact with Persons with Disabilities	-0.147***	-0.003	-0.009	0.002	-0.016	-0.039*	-0.248***	-0.136***	0.467***	1.000

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Table 13: Summary of Hierarchical Regression Analysis for Variables Predicting Degree of Comfort with Social Interactions with PWDs across Various Settings

Variable	Standardised Coefficients	t	sr^2	R	Adjusted R^2	ΔR^2
Step 1				.134	.016	.018
Gender	0.08	3.30***	.006			
Age	-0.03	-1.36	.001			
Education Level	0.10	3.81***	.008			
Housing Type	0.00	0.11	<.001			
Step 2				.163	.024	.009
Gender	0.07	3.21**	.006			
Age	-0.04	-1.65	.002			
Education Level	0.07	2.85**	.005			
Housing Type	0.00	.04	<.001			
Frequency of Contact with Persons with Disabilities	0.10	3.99***	.008			
Step 3				.493	.239	.216
Gender	0.08	3.73***	.006			
Age	-0.05	-2.26*	.002			
Education Level	0.08	3.47**	.005			
Housing Type	0.00	-0.20	<.001			
Frequency of Contact with Persons with Disabilities	0.00	-0.11	<.001			

Level of Comfort with Social Relationships with PWDs	0.43	18.54***	.145			
Interest in Being Supportive of Persons with Disabilities	0.02	0.91	<.001			
Concerned about Sharing Public Spaces with Persons with Disabilities	-0.13	-5.34***	.012			
Concerned about Child Being in Close Contact with Persons with Disabilities	0.02	0.89	<.001			

Note. N = 1801; *p < .05, **p < .01, ***p < .001

Concerns about social interactions with PWDs across multiple settings

Attitudinal factors — followed by social networks and age differences — predict feelings of concern towards social interactions with PWDs across multiple settings

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' feelings of concern at the thought of social interactions with PWDs across multiple settings.

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i) demographic factors, (ii) respondents' social networks (measured by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

a) <u>Level of Comfort with Social Relationships with PWDs (Composite Measure)</u>
  - a measure of the level of comfort respondents express with having friendships and professional relationships with PWDs (refer to "Key Measures" section in Chapter 1 for greater detail)

b) <u>Question item 53 (Section 9: Disability in Singapore)</u>[178]
  - a measure of the interest respondents express in learning to be supportive of PWDs

c) <u>Question item 54 (Section 9: Disability in Singapore)</u>[179]
  - a self-reported measure of respondents' knowledge about the needs of PWDs

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

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[178] Full question item: "I am interested to learn how to be supportive of PWDs."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".
[179] Full question item: "I do not know much about the needs of PWDs."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

Intercorrelations between multiple regression variables are reported in Table 13 and the regression statistics are in Table 14.

At stage one, demographical variables contribute significantly to the regression model, at F (4,1796) = 3.35, p = .01. As a significant contributor to the model, age explains 0.5% of the model. *To elaborate, younger respondents are shown to express greater feelings of concern at the thought of social interactions with PWDs across multiple settings. However, given that this figure of 0.7% is very low, age differences are not shown to be a strong predictor of respondents' sentiments.*

At stage two, the introduction of the variable measuring respondents' social network does not further explain the model, and the change in R^2 [180] is not significant, F (1, 1795) = 0.16, p = .69. At this stage of the regression model, age remains a significant predictor of feelings of concern and explains 0.5% of variation observed in the data. *Thus, at this stage, it is evident that social networks are not associated with the differences observed in respondents' sentiments.*

However, the introduction of variables measuring attitudes and perceptions at stage three further explain 11.6% of the observed variation. All new variables in this category are shown to be significant predictors and the change in R^2 is also significant, at F(3, 1792) = 79.02, p < .001. Age continues to be a significant predictor. *Younger respondents are still found to express greater feelings of*

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[180] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.

concern at the thought of social interactions with PWDs across multiple settings.

While social networks are not identified thus far to have predictive power, the addition of new variables at the third stage of the analysis led to the identification of this variable as a significant predictor. Once the differences in respondents' attitudes towards PWDs had been controlled for, a positive relationship was detected between social networks and the dependent variable. Specifically, results indicate that respondents with more frequent contact with PWDs are more likely to express concerns at the thought of social interactions with PWDs across multiple settings.

At this final stage of the model, differences in age and the influence of attitudinal factors collectively explain 12.0%[181] of the variation in the data. *Overall, however, the final results do show that attitudinal factors are the best predictors of feelings of concern amongst respondents in this model. Respondents who agree more strongly that they do not know the needs of PWDs are more likely to express concern at the thought of social interactions with PWDs across multiple settings. On the other hand, respondents who (a) express greater interest in learning how to support PWDs and those who (b) feel more comfortable having social relationships with PWDs are less likely to express such concerns.*

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[181] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

Table 14*: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Degree of Concern over Social Interactions with PWDs across Various Settings"*

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Degree of Concern over Social Interactions with PWDs Across Various Settings	1.000								
2. Gender	-0.016	1.000							
3. Age	-0.082***	0.005	1.000						
4. Education Level	0.012	-0.033	-0.257***	1.000					
5. Housing Type	-0.031	0.025	0.132***	0.283***	1.000				
6. Frequency of Contact with Persons with Disabilities	-0.013	0.018	0.013	0.228***	0.096***	1.000			
7. Level of Comfort with Social Relationships with PWDs	-0.322***	-0.008	0.007	0.033	0.023	0.222***	1.000		
8. Interest in Being Supportive of Persons with Disabilities	-0.161***	-0.015	-0.045*	0.109***	0.054*	0.259***	0.371***	1.000	

9. Not Knowing Much About the Needs of Persons with Disabilities	0.050*	0.056**	0.013	-0.040*	-0.022	-0.062**	0.039	0.077**	1.000

Note. N = 1801; *p < .05, **p < .01, ***p < .001

Table 15*: Summary of Hierarchical Regression Analysis for Variables Predicting Degree of Concern over Social Interactions with PWDs across Various Settings*

Variable	Standardised Coefficients	t	sr^2	R	Adjusted R^2	ΔR^2
Step 1				.086	.005	.007
Gender	-0.015	-.64	<.001			
Age	-0.080	-3.22**	.006			
Education Level	-0.004	-.14	<.001			
Housing Type	-0.020	-.78	<.001			
Step 2				.087	.005	<.001
Gender	-0.015	-.63	<.001			
Age	-0.080	-3.18**	.006			
Education Level	-0.001	-.05	<.001			
Housing Type	-0.019	-.77	<.001			
Frequency of Contact with Persons with Disabilities	-0.010	-.40	<.001			
Step 3				.351	.120	.116
Gender	-0.024	-1.09	.001			
Age	-0.084	-3.59***	.006			
Education Level	-0.004	-0.17	<.001			
Housing Type	-0.014	-0.59	<.001			
Frequency of Contact with	0.08	3.54***	.006			

Persons with Disabilities						
Level of Comfort with Social Relationships with PWDs	-0.315	-13.07***	.084			
Interest in Being Supportive of Persons with Disabilities	-0.074	-3.04**	.005			
Not Knowing Much About the Needs of Persons with Disabilities	0.07	3.36**	.006			

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Assisting someone with blindness or visual impairment (Scenario 1)

Attitudinal factors — followed by age differences — predict respondents' willingness to help someone with blindness or visual impairment (as in Scenario 1); however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' willingness to assist someone with blindness or visual impairment (as in Scenario 1).

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i) demographic factors, (ii) respondents' social networks (measured

by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

a) <u>Level of Comfort with Social Relationships with PWDs (Composite Measure)</u>
- a measure of the level of comfort respondents express with having friendships and professional relationships with PWDs (refer to "Key Measures" section in Chapter 1 for greater detail)

b) <u>Question item 53 (Section 9: Disability in Singapore)</u>[182]
- a measure of the interest respondents express in learning to be supportive of PWDs

c) <u>Question item 52 (Section 9: Disability in Singapore)</u>[183]
- a measure of respondents' willingness to help PWDs if they have the opportunity to do so

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

Intercorrelations between multiple regression variables are reported in Table 15 and the regression statistics are in Table 16.

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[182] Full question item: "I am interested to learn how to be supportive of PWDs."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

[183] Full question item: "I will help PWDs if I have the opportunity to do so."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

At stage one, demographical variables do not contribute significantly to the regression model, $F_{(4,1796)} = 1.98$, $p = .10$. *Thus, demographic differences are not associated with the variation observed in respondents' willingness to help in stage one.*

At stage two, the introduction of the variable measuring respondents' social network does not further explain the model and the change in R^2 [184] is not significant, $F_{(1, 1795)} = 3.54$, $p = .06$. *In other words, social networks are not associated with the differences observed in respondents' willingness to help at this stage.*

At stage three, the introduction of variables measuring attitudes and perceptions further explain 6.5% of the variation observed in the data. All new variables in this category are shown to be significant predictors and the change in R^2 is significant, at $F_{(3, 1792)} = 41.96$, $p < .001$. The variable of "age' now contributes significantly to the model — *older respondents are found to be slightly more likely to express a willingness to help when compared with younger counterparts.*

At this final stage of the model, differences in age and the influence of attitudinal factors collectively explain 6.7%[185] of the variation observed in the data. *Overall, however, results show that attitudinal factors are the best predictors of respondents' willingness to help in this model.*

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[184] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.

[185] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

Respondents who are more likely to express a willingness to help someone with blindness or visual impairment (as in the given scenario) are as follows:

   (d) those who agree more strongly that they would help PWDs if given the opportunity;
   (e) those who express greater interest in learning how to support PWDs; and,
   (f) those who are more comfortable with having social relationships with PWDs.

However, as the identified predictors only account for 6.7% of the observed variation in the data, follow-up research is recommended to better account for the factors associated with respondents' sentiments in this regard.

Table 16: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Willingness to Help PWDs in Scenario 1"

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Willingness to help PWDs in Scenario 1	1.000								
2. Gender	-0.025	1.000							
3. Age	0.061**	0.005	1.000						
4. Education Level	-0.011	-0.033	-0.257***	1.000					
5. Housing Type	0.013	0.025	0.132***	0.283***	1.000				
6. Frequency of Contact with Persons with Disabilities	0.044*	0.018	0.013	0.228***	0.096***	1.000			
7. Level of Comfort with Social Relationships with PWDs	0.190***	-0.008	0.007	0.033	0.023	0.222***	1.000		
8. Willingness to Help Persons with Disabilities when Given the Opportunity	0.217***	-0.052*	0.006	0.084***	0.042*	0.209***	0.398***	1.000	

9. Interest in Being Supportive of Persons with Disabilities	0.209***	-0.015	-0.045*	0.109***	0.054*	0.259***	0.371***	0.599***	1.000

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Table 17: Summary of Hierarchical Regression Analysis for Variables Predicting Willingness to Help PWDs in Scenario 1

Variable	Standardised Coefficients	t	sr²	R	Adjusted R²	ΔR²
Step 1				.066	.002	.004
Gender	-0.03	-1.09	<.001			
Age	0.06	2.43*	.003			
Education Level	0.00	.08	<.001			
Housing Type	0.01	.22	<.001			
Step 2				.080	.004	.002
Gender	-0.03	-1.14	<.001			
Age	0.06	2.29*	.003			
Education Level	-0.01	-.34	<.001			
Housing Type	0.00	.19	<.001			
Frequency of Contact with Persons with Disabilities	0.05	1.88	.002			
Step 3				.268	.067	.065
Gender	-0.02	-0.76	<.001			
Age	0.06	2.53*	.003			
Education Level	-0.01	-0.56	<.001			
Housing Type	<.001	-0.02	<.001			
Frequency of Contact with	-0.03	-1.22	.001			

Persons with Disabilities						
Level of Comfort with Social Relationships with PWDs	0.110	4.32***	.010			
Willingness to Help Persons with Disabilities when Given the Opportunity	0.112	3.81***	.008			
Interest in Being Supportive of Persons with Disabilities	0.112	3.84***	.008			

Note. N = 1801; *p < .05, **p < .01, ***p < .001

Assisting a wheelchair-user (Scenario 2)

Attitudinal factors predict respondents' willingness to help someone who is a wheelchair-user (as in Scenario 2); however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' willingness to assist wheelchair-users (as in Scenario 2).

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i) demographic factors, (ii) respondents' social networks (measured by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

    a) <u>Level of Comfort with Social Relationships with PWDs (Composite Measure)</u>
        ▪ a measure of the level of comfort respondents express with having friendships and professional relationships with PWDs (refer to "Key Measures" section in Chapter 1 for greater detail)
    b) <u>Question item 53 (Section 9: Disability in Singapore)</u>[186]
        ▪ a measure of the interest respondents express in learning to be supportive of PWDs
    c) <u>Question item 52 (Section 9: Disability in Singapore)</u>[187]

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[186] Full question item: "I am interested to learn how to be supportive of PWDs."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

[187] Full question item: "I will help PWDs if I have the opportunity to do so."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

- a measure of respondents' willingness to help
  PWDs if they have the opportunity to do so

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

Intercorrelations between multiple regression variables are reported in Table 17 and the regression statistics are in Table 18.

At stage one, demographical variables do not contribute significantly to the regression model, $F(4,1796) = 0.35$, $p = .85$. *Thus, demographic differences are not associated with the variation observed in respondents' willingness to help in the specified scenario.*

At stage two, the introduction of the variable measuring respondents' social network does not further explain the model, and the change in R^2 [188] is not significant, $F(1, 1795) = 3.32$, $p = .07$. *Thus, at this stage, it is evident that social networks are not associated with the differences observed in respondents' willingness to help.*

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[188] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.

At stage three, the introduction of variables measuring attitudes and perceptions further explain 4.0% of the variation observed in the data. Two out of the three variables in this category are shown to be significant predictors and the change in R^2 is significant, at $F(3, 1792) = 25.23$, $p < .001$. There are no other significant predictors and, in total, this regression model accounted for 3.9%[189] of the variation observed in the data.

Taken together, results show that attitudinal factors are the best predictors of respondents' willingness to help in this model. Respondents who (a) agree more strongly that they would help PWDs if given the opportunity and those who (b) feel more comfortable having social relationships with PWDs are more likely to express a willingness to help wheelchair-users (as in the given scenario).

However, as the identified predictors only account for 3.9% of the observed variation in the data, follow-up research is recommended to better account for the factors associated with respondents' sentiments in this regard.

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[189] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

Table 18: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Willingness to Help PWDs in Scenario 2"

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Willingness to help PWDs in Scenario 2	1.000								
2. Gender	-0.002	1.000							
3. Age	0.027	0.005	1.000						
4. Education Level	-0.013	-0.033	-0.257***	1.000					
5. Housing Type	-0.003	0.025	0.132***	0.283***	1.000				
6. Frequency of Contact with Persons with Disabilities	0.040*	0.018	0.013	0.228***	0.096***	1.000			
7. Level of Comfort with Social Relationships with PWDs	0.158***	-0.008	0.007	0.033	0.023	0.222***	1.000		
8. Willingness to Help Persons with Disabilities when Given the Opportunity	0.179***	-0.052*	0.006	0.084***	0.042*	0.209***	0.398***	1.000	
9. Interest in Being Supportive of Persons with Disabilities	0.139***	-0.015	-0.045*	0.109***	0.054*	0.259***	0.371***	0.599***	1.000

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Table 19: Summary of Hierarchical Regression Analysis for Variables Predicting Willingness to Help PWDs in Scenario 2

Variable	Standardised Coefficients	*t*	sr²	*R*	*Adjusted R²*	*ΔR²*
Step 1				.028	-.001	.001
Gender	-0.002	-.09	<.001			
Age	0.03	1.03	<.001			
Education Level	-0.005	-.20	<.001			
Housing Type	-0.005	-.18	<.001			
Step 2				.051	<.001	.002
Gender	-0.003	-.14	<.001			
Age	0.02	.90	<.001			
Education Level	-0.02	-.60	<.001			
Housing Type	-0.01	-.22	<.001			
Frequency of Contact with Persons with Disabilities	0.04	1.82	.002			
Step 3				.207	.039	.040
Gender	0.01	0.23	<.001			
Age	0.02	0.93	<.001			
Education Level	-0.02	-0.75	<.001			
Housing Type	-0.01	-0.35	<.001			

Frequency of Contact with Persons with Disabilities	-0.01	-0.47	<.001			
Level of Comfort with Social Relationships with PWDs	0.10	3.83***	.008			
Willingness to Help Persons with Disabilities when Given the Opportunity	0.12	4.13***	.009			
Interest in Being Supportive of Persons with Disabilities	0.04	1.20	.001			

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Assisting someone who is d/Deaf or hard-of-hearing (Scenario 3)

Attitudinal factors predict respondents' willingness to help someone who is d/Deaf or hard-of-hearing (as in Scenario 3); however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' willingness to assist someone who is d/Deaf or hard-of-hearing (as in Scenario 3).

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i) demographic factors, (ii) respondents' social networks (measured by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

    a) <u>Level of Comfort with Social Relationships with PWDs (Composite Measure)</u>
- a measure of the level of comfort respondents express with having friendships and professional relationships with PWDs (refer to "Key Measures" section in Chapter 1 for greater detail)

    b) <u>Question item 53 (Section 9: Disability in Singapore)</u>[190]
- a measure of the interest respondents express in learning to be supportive of PWDs

    c) <u>Question item 52 (Section 9: Disability in Singapore)</u>[191]

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[190] Full question item: "I am interested to learn how to be supportive of PWDs."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

[191] Full question item: "I will help PWDs if I have the opportunity to do so."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

- a measure of respondents' willingness to help PWDs if they have the opportunity to do so

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

Intercorrelations between multiple regression variables are reported in Table 19 and the regression statistics are in Table 20.

At stage one, demographical variables do not contribute significantly to the regression model, $F(4,1796) = 0.94$, $p = .44$. *Thus, demographic differences are not associated with the variation observed in respondents' willingness to help in the specified scenario.*

The addition of the variable measuring social networks into the model at stage 2 further explains 0.4% of the model, and the change in R^2 [192] is significant, $F(1, 1795) = 47.46$, $p = .006$. *Respondents with more frequent contact with PWDs are slightly more likely to be willing to help when compared with those who have less frequent contact. As such, it is evident at this stage that social networks are better at predicting respondents' willingness to help than demographic differences are.*

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[192] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.

At stage three, the introduction of variables measuring attitudes and perceptions further explain 2.8% of the variation observed in the data. Two out of the three variables in this category are shown to be significant predictors and the change in R^2 is significant, at $F(3, 1792) = 17.54$, $p < .001$. *However, social network is no longer shown to be a significant predictor in stage three after differences in respondents' attitudes are controlled for.* The full model regression model in this final stage explains 3.0%[193] of the total variation observed in the data.

Taken together, results show that attitudinal factors are the best predictors of respondents' willingness to help in this model. Respondents who (a) agree more strongly that they would help PWDs if given the opportunity and those who (b) who feel more comfortable having social relationships with PWDs are more likely to express a willingness to help someone who is d/Deaf or hard-of-hearing (as in the given scenario).

However, as the identified predictors only account for 3.0% of the observed variation in the data, follow-up research is recommended to better account for the factors associated with respondents' sentiments in this regard.

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[193] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

Table 20: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Willingness to Help PWDs in Scenario 3"

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Willingness to help PWDs in Scenario 3	1.000								
2. Gender	0.035	1.000							
3. Age	0.021	0.005	1.000						
4. Education Level	-0.009	-0.033	-0.257***	1.000					
5. Housing Type	-0.016	0.025	0.132***	0.283***	1.000				
6. Frequency of Contact with Persons with Disabilities	0.062**	0.018	0.013	0.228***	0.096***	1.000			
7. Level of Comfort with Social Relationships with PWDs	0.131***	-0.008	0.007	0.033	0.023	0.222***	1.000		
8. Willingness to Help Persons with Disabilities when Given the Opportunity	0.158***	-0.052*	0.006	0.084***	0.042*	0.209***	0.398***	1.000	
9. Interest in Being Supportive of	0.124***	-0.015	-0.045*	0.109***	0.054*	0.259***	0.371***	0.599***	1.000

Persons with Disabilities									

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Table 21: Summary of Hierarchical Regression Analysis for Variables Predicting Willingness to Help PWDs in Scenario 3

Variable	Standardised Coefficients	*t*	sr²	*R*	*Adjusted R²*	*ΔR²*
Step 1				.046	<.001	.002
Gender	0.04	1.52	.001			
Age	0.02	1.00	<.001			
Education Level	0.005	.19	<.001			
Housing Type	-0.02	-.85	<.001			
Step 2				.079	.003	.004
Gender	0.03	1.46	.001			
Age	0.02	.80	<.001			
Education Level	-0.01	-.42	<.001			
Housing Type	-0.02	-.90	<.001			
Frequency of Contact with Persons with Disabilities	0.07	2.73**	.004			
Step 3				.186	.030	.028
Gender	0.04	1.80	.002			
Age	0.02	0.82	<.001			
Education Level	-0.01	-0.56	<.001			
Housing Type	-0.03	-1.02	.001			
Frequency of Contact with	0.02	0.81	<.001			

Persons with Disabilities						
Level of Comfort with Social Relationship s with PWDs	0.07	2.79**	.004			
Willingness to Help Persons with Disabilities when Given the Opportunity	0.11	3.76***	.008			
Interest in Being Supportive of Persons with Disabilities	0.03	0.96	<.001			

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Assisting someone with a developmental disability (Scenario 4)

Attitudinal factors — followed by age and gender differences — predict respondents' willingness to help someone with developmental disability (as in Scenario 4); however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' willingness to assist someone with developmental disability (as in Scenario 4).

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i) demographic factors, (ii) respondents' social networks (measured by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

   a) Level of Comfort with Social Relationships with PWDs (Composite Measure)
      - a measure of the level of comfort respondents express with having friendships and professional relationships with PWDs (refer to "Key Measures" section in Chapter 1 for greater detail)
   b) Question item 53 (Section 9: Disability in Singapore)[194]
      - a measure of the interest respondents express in learning to be supportive of PWDs

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[194] Full question item: "I am interested to learn how to be supportive of PWDs.";
Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

c) Question item 52 (Section 9: Disability in Singapore)[195]

- a measure of respondents' willingness to help PWDs if they have the opportunity to do so

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

Intercorrelations between multiple regression variables are reported in Table 21 and the regression statistics are in Table 22.

At stage one, demographical variables contribute significantly to the regression model, $F(4,1796) = 7.48$, $p < .001$ and explain 1.4% of variation in the model. *Older respondents are slightly more likely to express willingness to help when compared with younger counterparts. Male respondents are also more likely to be willing to help when compared with female respondents. However, given that only 1.4% of the observed variation is associated with these demographic differences, age and gender are not shown to be strong predictors of respondents' views in this regard.*

The addition of the variable measuring social networks into the model at stage 2 further explains 0.9% of the model, and the change in R^2 [196] is significant, $F(1, 1795) = 16.80$, $p < .001$. Thus, at this

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[195] Full question item: "I will help PWDs if I have the opportunity to do so."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".
[196] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that

stage of the model, *respondents with more frequent contact with PWDs are slightly more likely to be willing to help when compared with those who have less frequent contact. Age and gender continue to be significant predictors.*

At stage three, the introduction of variables measuring attitudes and perceptions further explain 5.2% of the variation observed in the data. One out of the three variables in this category is shown to be a significant predictor and the change in R^2 is significant, at $F(3, 1792) = 33.53$, $p < .001$. Age and gender continue to be significant predictors. *Older respondents are slightly more likely to express willingness to help when compared with younger counterparts. Male respondents are also more likely to be willing to help when compared with female respondents. However, social network is no longer shown to be a significant predictor in stage three after differences in respondents' attitudes are controlled for.*

At this final stage of the model, differences in age, gender and the influence of attitudinal factors collectively explain 7.3%[197] of the variation observed in the data.
Overall, however, results show that attitudinal factors are the best predictors of respondents' willingness to help in this model. Respondents who express greater interest in learning how to support PWDs are more likely to express a willingness to help someone with a developmental disability (as in the given scenario).

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there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.

[197] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

Table 22: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Willingness to Help PWDs in Scenario 4"

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Willingness to help PWDs in Scenario 4	1.000								
2. Gender	-0.075**	1.000							
3. Age	0.102***	0.005	1.000						
4. Education Level	-0.004	-0.033	-0.257***	1.000					
5. Housing Type	0.018	0.025	0.132***	0.283***	1.000				
6. Frequency of Contact with Persons with Disabilities	0.097***	0.018	0.013	0.228***	0.096***	1.000			
7. Level of Comfort with Social Relationships with PWDs	0.109***	-0.008	0.007	0.033	0.023	0.222***	1.000		
8. Willingness to Help Persons with Disabilities when Given the Opportunity	0.183***	-0.052*	0.006	0.084***	0.042*	0.209***	0.398***	1.000	
9. Interest in Being Supportive of Persons with Disabilities	0.237***	-0.015	-0.045*	0.109***	0.054*	0.259***	0.371***	0.599**	1.000

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Table 23: Summary of Hierarchical Regression Analysis for Variables Predicting Willingness to Help PWDs in Scenario 4

Variable	Standardised Coefficients	t	sr^2	R	Adjusted R^2	ΔR^2
Step 1				.128	.014	.016
Gender	-0.07	-3.19**	.006			
Age	0.11	4.33***	.01			
Education Level	0.02	.82	<.001			
Housing Type	-0.001	-.03	<.001			
Step 2				.160	.023	.009
Gender	-0.08	-3.30**	.006			
Age	0.10	4.05***	.008			
Education Level	-0.003	-.11	<.001			
Housing Type	-0.002	-.10	<.001			
Frequency of Contact with Persons with Disabilities	0.10	4.10***	.009			
Step 3				.278	.073	.052
Gender	-0.07	-3.11**	.005			
Age	0.11	4.49***	.010			
Education Level	-0.01	-0.43	<.001			
Housing Type	-0.01	-0.35	<.001			

Frequency of Contact with Persons with Disabilities	0.04	1.52	.001		
Level of Comfort with Social Relationships with PWDs	0.01	0.22	<.001		
Willingness to Help Persons with Disabilities when Given the Opportunity	0.05	1.65	.001		
Interest in Being Supportive of Persons with Disabilities	0.20	6.92***	.025		

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Views on Inclusion

Attitudinal factors — followed by age differences — predict respondents' views on inclusion; however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' views on inclusion.

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i) demographic factors, (ii) respondents' social networks (measured

by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

a) <u>Level of Comfort with Social Relationships with PWDs (Composite Measure)</u>
- a measure of the level of comfort respondents express with having friendships and professional relationships with PWDs (refer to "Key Measures" section in Chapter 1 for greater detail)

b) <u>Degree of Comfort with Social Interactions with PWDs Across Various Settings</u>
- the sum of the total number of times respondents indicate being comfortable with social interactions with persons of different abilities/disabilities across a series of given scenarios (refer to "Key Measures" section in Chapter 1 for greater detail)

c) <u>Degree of Concern over Social Interactions with PWDs Across Various Settings</u>
- the sum of the total number of times respondents express concerns over social interactions with persons with different disabilities across professional and social settings (refer to "Key Measures" section in Chapter 1 for greater detail)

d) <u>Question item 53 (Section 9: Disability in Singapore)</u>[198]
- a measure of the interest respondents express in learning to be supportive of PWDs

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[198] Full question item: "I am interested to learn how to be supportive of PWDs.";
Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

e) Question item 49 (Section 9: Disability in Singapore)[199]

- a measure of the extent to which respondents agree with the view that people should take more responsibility to provide for themselves (instead of depending on the government to ensure that everyone is provided for)

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

Intercorrelations between multiple regression variables are reported in Table 23 and the regression statistics are in Table 24.

At stage one, demographical variables contribute significantly to the regression model, at $F(4,1796) = 5.67$, $p < .001$. As significant contributors to the model, gender and age explain 1.0% of the variation observed in the data. *To elaborate, female respondents are slightly more likely to support the fulfilment of full needs when compared with male respondents. At the same time, older respondents are less likely to express their support in this regard when compared with younger counterparts. However, given that only 1.0% of the observed variation is associated with these demographic differences, gender and age are not shown to be strong predictors of respondents' views.*

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[199] Full question item: "How would you place your views on the scale below? 1 means you agree completely with the statement on the left *("In general, the government should take more responsibility to ensure that everyone is provided for ")*; 10 means you agree completely with the statement on the right *("In general, people should take more responsibility to provide for themselves")*; and if your views fall somewhere in between, you can choose any number in between 1–10."; Response options in the survey for this question item span a numerated scale from 1–10.

The addition of the variable measuring respondents' social networks did not further explain the model at stage two, and the change in R^2 [200] is not significant, $F(1, 1795) = 0.32$, $p = .60$. At stage two, age and gender remain to be significant predictors. *Thus, at this stage, it is evident that social networks are not associated with the differences observed in respondents' views.*

The addition of five variables measuring attitudes and perceptions at stage three further explain 5.2% of variation of the data. The change in R^2 is significant, at $F(5, 1790) = 20.04$, $p < .001$ and two of the five attitudinal factors are identified to be to be significant predictors. Age is still a significant predictor in the model but gender is no longer identified to be one. *Older respondents are still slightly less likely to support the fulfilment of full needs when compared with younger counterparts.*

In sum, the significant predictors identified in the third stage of the model explain 6.0%[201] of the variation observed in respondents' views. *Overall, the final results indicate that attitudinal factors are the best predictors in this model of respondents' views on inclusion. Respondents who agree more strongly that people should provide for themselves (instead of looking to the government to ensure everyone is provided for) are less likely to express support for the fulfilment of full needs. Conversely, those who feel more*

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[200] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.
[201] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

comfortable having social interactions with PWDs are more likely to express support in this regard.

However, as the identified predictors only account for 6.0% of the observed variation in the data, follow-up research is recommended to better account for the factors associated with respondents' sentiments in this case.

Table 24: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Degree of Support for Meeting the Full Needs of PWDs"

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Degree of Support for meeting the Full Needs of PWDs	1.000										
2. Gender	0.050*	1.000									
3. Age	-0.098***	0.005	1.000								
4. Education Level	0.014	-0.033	-0.257***	1.000							
5. Housing Type	-0.004	0.025	0.132***	0.283***	1.000						
6. Frequency of Contact with Persons with Disabilities	0.010	0.018	0.013	0.228***	0.096	1.000					
7. Level of Comfort with Social Relationships with PWDs	0.065**	-0.008	0.007	0.033	0.023	0.222	1.000				
8. Degree of Comfort with Social Interactions with PWDs	0.219***	0.074**	-0.058*	0.105***	0.028	0.114	0.462	1.000			

	1	2	3	4	5	6	7	8	9	10	11
9. Degree of Concern over Social Interactions with PWDs	0.000	-0.016	-0.082***	0.012	-0.031	-0.013	-0.322	-0.196	1.000		
10. Degree to which Individuals should provide for themselves	-0.121***	0.025	0.036	0.054*	-0.014	0.089	0.003	-0.223	-0.027	1.000	
11. Interest in Being Supportive of Persons with Disabilities	-0.002	-0.015	-0.045*	0.109	0.054	0.259	0.371	0.197	-0.161	0.098	1.000

Note. N = 1801; *p < .05, **p < .01, ***p < .001

Table 25: Summary of Hierarchical Regression Analysis for Variables Predicting Degree of Support for Meeting the Full Needs of PWDs

Variable	Standardised Coefficients	t	sr^2	R	Adjusted R^2	ΔR^2
Step 1				.112	.010	.012
Gender	0.05	2.11*	.002			
Age	-0.10	-4.19***	.01			
Education Level	-0.01	-.57	<.001			
Housing Type	0.01	.52	<.001			
Step 2				.112	.010	<.001
Gender	0.05	2.09*	.002			
Age	-0.11	-4.22***	.01			
Education Level	-0.02	-.69	<.001			
Housing Type	0.01	.51	<.001			
Frequency of Contact with Persons with Disabilities	0.01	.57	<.001			
Step 3				.23	.05	.04
Gender	0.03	1.49	.001			
Age	-0.09	-3.76***	.007			
Education Level	-0.03	-1.13	.001			
Housing Type	0.01	0.45	<.001			

Frequency of Contact with Persons with Disabilities	0.01	0.40	<.001			
Level of Comfort with Social Relationships with PWDs	-0.02	-0.55	<.001			
Degree of Comfort with Social Interactions with PWDs	0.22	8.02***	.034			
Degree of Concern over Social Interactions with PWDs	0.02	1.01	.001			
Degree to which Individuals should provide for themselves	-0.07	-2.72**	.004			
Interest in Being Supportive of Persons with Disabilities	-0.03	-1.26	.001			

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Support for Inclusive Policies

Attitudinal factors — followed by social networks, educational differences and differences in housing type — predict support for inclusive policies

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' support for inclusive policies.

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i) demographic factors, (ii) respondents' social networks (measured by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

    a) <u>Level of Comfort with Social Relationships with PWDs (Composite Measure)</u>
- a measure of the level of comfort respondents express with having friendships and professional relationships with PWDs (refer to "Key Measures" section in Chapter 1 for greater detail)

    b) <u>Degree of Comfort with Social Interactions with PWDs Across Various Settings</u>
- the sum of the total number of times respondents indicate being comfortable with social interactions with persons of different abilities/disabilities across a series of given scenarios (refer to "Key Measures" section in Chapter 1 for greater detail)

    c) <u>Degree of Concern over Social Interactions with PWDs Across Various Settings</u>
- the sum of the total number of times respondents express concerns over social interactions with persons with different

disabilities across professional and social settings (refer to "Key Measures" section in Chapter 1 for greater detail)

d) <u>Question item 53 (Section 9: Disability in Singapore)</u>[202]
- a measure of the interest respondents express in learning to be supportive of PWDs

e) <u>Question item 49 (Section 9: Disability in Singapore)</u>[203]
- a measure of the extent to which respondents agree with the view that people should take more responsibility to provide for themselves (instead of depending on the government to ensure that everyone is provided for)

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

Intercorrelations between multiple regression variables are reported in Table 25 and the regression statistics are in Table 26.

At stage one, demographical variables contribute significantly to the regression model, at $F(4,1796) = 4.39$, $p = .002$. As significant

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[202] Full question item: "I am interested to learn how to be supportive of PWDs."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

[203] Full question item: "How would you place your views on the scale below? 1 means you agree completely with the statement on the left *("In general, the government should take more responsibility to ensure that everyone is provided for ")*; 10 means you agree completely with the statement on the right *("In general, people should take more responsibility to provide for themselves")*; and if your views fall somewhere in between, you can choose any number in between 1–10."; Response options in the survey for this question item span a numerated scale from 1–10.

contributors to the model, gender, education, and housing type explain 0.7% of the model. *To elaborate, female respondents and respondents with a higher level of education are slightly more likely to support inclusive policies when compared to male respondents and those with a lower level of education. However, respondents who reside in more expensive housing types are slightly less likely to express their support when compared to those residing in less costly dwellings. That said, given that only 0.7% of the variation observed is associated with these demographic differences, demographic variables are not shown to be strong predictors of respondents' views.*

At stage two, the introduction of the variable measuring respondents' social networks contributes further to the explanatory power of the model, with a significant change in R^2 [204], at $F(1, 1795)$ = 25.69, $p < .001$. *Respondents with more frequent contact with PWDs were slightly more likely support inclusive policies when compared with those who have less frequent contact. Thus, it is evident that social networks are associated with some of the variation observed in respondents' views.* Variables measuring education, housing type, and social networks remain significant predictors of respondents' support for inclusive policies in this second stage. Together, these variables explain 2.1% of the observed variation in the data. *Once differences in social networks are accounted for, however, gender is no longer shown to be a predictor of respondents' views.*

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[204] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.

At stage three, the introduction of variables measuring attitudes and perceptions further explain 6.4% of the variation observed in the data. All of the variables in this category are shown to be significant predictors and the change in R^2 is significant, at $F(5, 1790) = 25.32$, $p < .001$. Variables measuring education, housing type, and social networks remain to be significant predictors. *Respondents who have more frequent contact with PWDs and those who have a higher level of education are slightly more likely to support inclusive policies. Conversely, respondents who reside in more expensive dwellings are slightly less likely to do so when compared to those who reside in dwellings that are less costly.*

In sum, the significant predictors identified in the third stage of the model explain 8.3%[205] of the variation observed in respondents' views. Overall, however, *the final results do show that attitudinal factors are the best predictors of views on inclusion in this model. Respondents who are more likely to support inclusive policies are:*

- (d) *those who are more comfortable with having social relationships with PWDs;*
- (e) *those who are more comfortable having social interactions with PWDs; and,*
- (f) *those who express greater interest in learning how to support PWDs.*

Conversely, respondents who (d) express greater concerns over potential social interactions with PWDs and who (e) agree more strongly that people should provide for themselves (instead of looking to the government to ensure everyone is provided for) are less likely to support inclusive policies.

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[205] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

Table 26: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Degree of Support for Inclusive Policies"

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Degree of Support for Inclusive Policies	1.000										
2. Gender	0.043*	1.000									
3. Age	-0.017	0.005	1.000								
4. Education Level	0.071**	-0.033	-0.257***	1.000							
5. Housing Type	-0.026	0.025	0.132***	0.283***	1.000						
6. Frequency of Contact with Persons with Disabilities	0.131***	0.018	0.013	0.228***	0.096***	1.000					

	1	2	3	4	5	6	7	8	9	10	11
7. Level of Comfort with Social Relationships with PWDs	0.217***	-0.008	0.007	0.033	0.023	0.222***	1.000				
8. Degree of Comfort with Social Interactions with PWDs	0.207***	0.074**	-0.058*	0.105***	0.028	0.114***	0.462***	1.000			
9. Degree of Concern over Social Interactions with PWDs	-0.130***	-0.016	-0.082***	0.012	-0.031	-0.013	-0.322***	-0.196***	1.000		
10. Degree to which Individuals should provide for themselves	-0.052*	0.025	0.036	0.054*	-0.014	0.089***	0.003	-0.223***	-0.027	1.000	
11. Interest in Being Supportive of Persons	0.183***	-0.015	-0.045*	0.109***	0.054*	0.259***	0.371***	0.197***	-0.161***	0.098***	1.000

with **Disabilities**										

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Table 27: Summary of Hierarchical Regression Analysis for Variables Predicting Degree of Support for Inclusive Policies

Variable	Standardised Coefficients	t	sr^2	R	Adjusted R^2	ΔR^2
Step 1				.098	.007	.010
Gender	0.05	2.01*	.002			
Age	0.01	.54	<.001			
Education Level	0.09	3.54***	.007			
Housing Type	-0.05	-2.18*	.003			
Step 2				.154	.021	.014
Gender	0.04	1.90	.002			
Age	0.005	.19	<.001			
Education Level	0.06	2.36*	.003			
Housing Type	-0.06	-2.28*	.003			
Frequency of Contact with Persons with Disabilities	0.12	5.07***	.01			
Step 3				.297	.083	.064
Gender	0.04	1.76	.002			
Age	0.01	0.47	<.001			
Education Level	0.06	2.19*	.002			
Housing Type	-0.06	-2.65**	.004			
Frequency of Contact with Persons with Disabilities	0.07	2.79**	.004			

Level of Comfort with Social Relationships with PWDs	0.10	3.40**	.006			
Degree of Comfort with Social Interactions with PWDs	0.10	3.89***	.008			
Degree of Concern over Social Interactions with PWDs	-0.06	-2.65**	.004			
Degree to which Individuals should provide for themselves	-0.05	-2.21*	.002			
Interest in Being Supportive of Persons with Disabilities	0.10	4.10***	.009			

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Views on Government Support

Attitudinal factors — followed by differences in housing type — are the best predictors of respondents' views on government support; however, social networks are not a predictor in this model

A three-stage hierarchical multiple regression was conducted to better understand the various factors associated with respondents' views on government support.

All in all, three types of factors were considered to explain the variation in respondents' degree of comfort in this regard: (i) demographic factors, (ii) respondents' social networks (measured by their frequency of contact with persons with disabilities) and (iii) other attitudinal factors. In this analysis, measures included under (iii) include:

    a) <u>Level of Comfort with Social Relationships with PWDs (Composite Measure)</u>
- a measure of the level of comfort respondents express with having friendships and professional relationships with PWDs (refer to "Key Measures" section in Chapter 1 for greater detail)

    b) <u>Degree of Comfort with Social Interactions with PWDs Across Various Settings</u>
- the sum of the total number of times respondents indicate being comfortable with social interactions with persons of different abilities/disabilities across a series of given scenarios (refer to "Key Measures" section in Chapter 1 for greater detail)

    c) <u>Degree of Concern over Social Interactions with PWDs Across Various Settings</u>

- the sum of the total number of times respondents express concerns over social interactions with persons with different disabilities across professional and social settings (refer to "Key Measures" section in Chapter 1 for greater detail)

d) <u>Question item 53 (Section 9: Disability in Singapore)</u>[206]
- a measure of the interest respondents express in learning to be supportive of PWDs

e) <u>Question item 49 (Section 9: Disability in Singapore)</u>[207]
- a measure of the extent to which respondents agree with the view that people should take more responsibility to provide for themselves (instead of depending on the government to ensure that everyone is provided for)

In keeping with this analytical strategy, demographical variables were entered at stage one of the regression to account for demographic differences. Respondents' social networks (i.e., frequency of contact with persons with disabilities) were also considered at stage two. Variables measuring various attitudes and perceptions towards persons with disabilities were entered at stage three.

Intercorrelations between multiple regression variables are reported in Table 28 and the regression statistics are in Table 29.

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[206] Full question item: "I am interested to learn how to be supportive of PWDs."; Response options in the survey for this question item span a 6-point Likert scale with no neutral point, ranging from "Strongly Agree" to "Strongly Disagree".

[207] Full question item: "How would you place your views on the scale below? 1 means you agree completely with the statement on the left *("In general, the government should take more responsibility to ensure that everyone is provided for ")*; 10 means you agree completely with the statement on the right *("In general, people should take more responsibility to provide for themselves")*; and if your views fall somewhere in between, you can choose any number in between 1–10."; Response options in the survey for this question item span a numerated scale from 1–10.

At stage one, demographical variables do not contribute significantly to the regression model, $F\,(4,1796) = 1.28$, $p = .28$. At this stage, therefore, *demographic differences are not associated with much of the variation observed in respondents' views.*

The addition of the variable measuring respondents' social networks explains further variation in the data at stage two, and the change in R^2 is significant, $F\,(1, 1795) = 11.07$, $p < .001$. At this second stage of the regression model, social network is a significant predictor of respondents' views and explains 0.6% of the observed variation. *Respondents who have more frequent contact with PWDs are slightly more likely to indicate that the government should do more to support PWDs when compared to those who have less frequent contact. Thus, at stage two, it is evident that social networks are a factor associated with the differences observed in respondents' views. However, given that only 0.6% of the variation in the data is explained through this factor, social networks are not shown to have that much predictive power.*

At stage three, the introduction of variables measuring attitudes and perceptions further explain 14.1% of the variation observed in the data. The change in R^2 [208] is significant, at $F(5, 1790) = 59.68$, $p < .001$, and three of the five attitudinal factors are identified to be to be significant predictors. Social network is no longer a significant predictor. *While demographic variables have not been identified as predictors thus far, the addition of new variables at the third stage of the analysis led to the identification of housing type as a*

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[208] The R-squared value provides a general guide about how well the independent variables and control variables included in the model predict changes in the dependent variable. Higher values indicate better predictive value for the model. Significant changes observed in the R-squared value after the addition of new variables also suggest that there is an improvement in the model's explanatory power. It should be noted, however, that the size of the R-squared value does not directly lead to implications of a model's usefulness or accuracy; coefficient sizes as well as the statistical significance of the included variables provide a more direct description of how the dependent variable is impacted by such variables.

significant predictor. Once the differences in respondents' attitudes towards PWDs are controlled for, a negative relationship is detected between housing type and the dependent variable. Specifically, results indicate that respondents who reside in more expensive housing types are slightly less likely to desire greater government support for PWDs when compared with those who reside in less costly dwellings.

At this final stage of the regression model, differences in housing type and attitudinal factors explain 14.7%[209] of the variation observed in the data. *Overall, however, results do indicate that attitudinal factors are the best predictors of respondents' views on government support in the current model. Respondents who agree more strongly that individuals should provide for themselves (instead of depending on the government) are less likely to support government involvement in the support of PWDs. Conversely, respondents (a) who are more comfortable having social interactions with PWDs and (b) who express greater interest in learning how to support PWDs are more likely to express support in this regard.*

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[209] This figure is derived from the adjusted R-squared value: the adjusted R-squared is a modified version of R-squared that accounts for predictors that are not significant in a regression model.

Table 28: Correlations Among Variables for Hierarchical Regression Analysis with Dependent Variable "Perceptions of Government Support"

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Perceptions of Government Support	1.000										
2. Gender	-0.011	1.000									
3. Age	0.012	0.005	1.000								
4. Education Level	-0.032	-0.033	-0.257***	1.000							
5. Housing Type	-0.042*	0.025	0.132***	0.283***	1.000						
6. Frequency of Contact with Persons with Disabilities	0.078***	0.018	0.013	0.228***	0.096***	1.000					

7. Level of Comfort with Social Relationships with PWDs	0.192***	-0.008	0.007	0.033	0.023	0.222***	1.000				
8. Degree of Comfort with Social Interactions with PWDs	0.273***	0.074**	-0.058*	0.105***	0.028	0.114***	0.462***	1.000			
9. Degree of Concern over Social Interactions with PWDs	-0.043*	-0.016	-0.082***	0.012	-0.031	-0.013	-0.322***	-0.196***	1.000		
10. Degree to which Individuals should provide for themselves	-0.226***	0.025	0.036	0.054*	-0.014	0.089***	0.003	-0.223***	-0.027	1.000	
11. Interest in Being Supportive of Persons	0.218***	-0.015	-0.045*	0.109***	0.054*	0.259***	0.371***	0.197***	-0.161***	0.098***	1.000

with Disabilities										

Note. N = 1801; *p < .05, **p < .01, ***p < .001

Table 29: Summary of Hierarchical Regression Analysis for Variables Predicting Perceptions of Government Support

Variable	Standardised Coefficients	t	sr²	R	Adjusted R²	ΔR²
Step 1				.053	.001	.003
Gender	-0.01	-0.45	<.001			
Age	0.01	0.48	<.001			
Education Level	-0.02	-0.70	<.001			
Housing Type	-0.04	-1.52	.001			
Step 2				.095	.006	.006
Gender	-0.01	-0.55	<.001			
Age	0.01	0.22	<.001			
Education Level	-0.04	-1.52	.001			
Housing Type	-0.04	-1.59	.001			
Frequency of Contact with Persons with Disabilities	0.09	3.77***	.008			
Step 3				.36	.13	.12
Gender	-0.02	-0.75	<.001			
Age	0.04	1.54	.001			
Education Level	-0.05	-1.84	.002			
Housing Type	-0.05	-2.36*	.003			
Frequency of Contact with Persons with Disabilities	0.03	1.37	.001			
Level of Comfort with Social Relationships with PWDs	0.04	1.61	.001			

Degree of Comfort with Social Interactions with PWDs	0.18	7.05***	.024			
Degree of Concern over Social Interactions with PWDs	0.03	1.44	.001			
Degree to which Individuals should provide for themselves	-0.21	-8.99***	.038			
Interest in Being Supportive of Persons with Disabilities	0.19	7.96***	.030			

*Note. N = 1801; *p < .05, **p < .01, ***p < .001*

Annex 3

Questionnaire

ANNEX 3: QUESTIONNAIRE

Informed Consent (Pre-Survey)

Participant Information Sheet to be displayed here

Please check the box below before proceeding:
[*To be shown at the end of the Participant Information Sheet (response required)]*

☐	I have understood the Participant Information Sheet and consent to participate in this study. I understand that my participation is completely voluntary.

Demographic Information

Variable	Question	Response Options
Citizenship	**[Q0.]** What is your citizenship status?	[1] Singapore Citizen [2] Permanent Resident [3] Foreigner
Age	**[Q1.]** What is your current age?	[dropdown list]
HidAge	**[HQ1.]** Hidden variable to autocode for age range	[1] 21–25 [2] 26–30 [3] 31–35 [4] 36–40

		[6] 41–45 [7] 46–50 [8] 51–55 [9] 56–60 [10] 61–65 [11] 66–70 [12] 71–75
Gender	**[Q2.]** What is your gender?	[1] Male [2] Female
Race	**[Q3.]** What is your race (as indicated in IC)?	[1] Chinese [2] Malay [3] Indian [4] Eurasian [5] Others: please specify
Religion	**[Q4.]** What is your religion?	[1] Buddhism [2] Taoism [3] Islam [4] Hinduism [5] Christianity [6] Catholicism [7] Sikhism [98] Others: please specify [99] No Religion

Highest educational qualification	**[Q5.]** What is your highest educational level attained?	[1] No formal qualification/Lower primary [2] Primary [3] Secondary [4] Post-secondary (non-tertiary): General & Vocational [5] Polytechnic diploma [6] Professional qualification and other diploma [7] University first degree [8] University postgraduate diploma/degree [9] Others: please specify
Housing Type	**[Q6.]** What is your housing type?	[1] HDB 1-Room Flat [2] HDB 2-Room Flat [3] HDB 3-Room Flat [4] HDB 4-Room Flat [5] HDB 5-Room Flat [6] HDB Executive Flat/HDB Maisonette [7] Privatised HUDC flat [8] Condominium and Other Private Apartments [9] Terrace House [10] Semi-Detached House [11] Bungalow/Detached House [12] Others: please specify

Household Income	**[Q8.]** What is your average gross **monthly household income** during the last 12 months? Please exclude income of people who are not part of your household like tenants and foreign domestic workers.	[1] No income [2] Below $1,000 [3] $1,000-$1,999 [4] $2,000-$2,999 [5] $3,000-$3,999 [6] $4,000-$4,999 [7] $5,000-$5,999 [8] $6,000-$6,999 [9] $7,000-$7,999 [10] $8,000-$8,999 [11] $9,000-$9,999 [12] $10,000-$10,999 [13] $11,000-$11,999 [14] $12,000-$12,999 [15] $13,000-$13,999 [16] $14,000-$14,999 [17] $15,000-$17,499 [18] $17,500-$19,999 [19] $20,000 and above
Personal Income	**[Q7.]** What is your average gross **monthly personal income** from work during the last 12 months?	[1] No income [2] Below $500 [3] $500-$999 [4] $1000-$1499 [5] $1500-$1999 [6] $2000-$2999

		[7] $3000-$3999 [8] $4000-$4999 [9] $5000-$5999 [10] $6000-$6999 [11] $7000-$7999 [12] $8000-$8999 [13] $9000-$9999 [14] $10,000 and above

Disability Experience (Self-Reported)	
[Q9.] *(Multiple Answer)* **Are you experiencing any of the following disabling conditions? Please read the following and select all that apply to you (if any):**	
13	Not experiencing a disabling condition
1	Physical Disability (e.g., loss of limbs; muscular dystrophy; spinal cord injury; polio; spina bifida; paralysis)
2	Deafness/being hard-of-hearing
3	Blindness/being visually impaired
4	Muteness
5	Cerebral Palsy
6	Autism
7	Down Syndrome
8	Other Intellectual Disability

9	Attention Deficit/Hyperactivity Disorder (ADD/ADHD)
10	Dyslexia
11	Stroke survivor
12	Other disabling conditions: please specify
[Q10.] *(OE)* **(Please show if any options 1-12 are selected in Q9) Approximately how many years have you experienced this disability/these disabilities for?**	
1	*(For response options, auto-populate with disability/disabilities selected previously)* [Provide open-ended option to enter numerical values for each of the options selected in Q9]

In the remainder of the survey, we will be asking you for your thoughts and opinions about persons with disabilities (PWDs). To ensure that everyone has a common understanding, please read the information below about PWDs.

In this study, PWDs are defined as those with long-term physical, mental, intellectual, or sensory impairments which, in interaction with various barriers, may hinder their full and effective participation in society on an equal basis with others.

Physical Disability:
- **Total/partial loss of bodily functions**
  - Examples: Ability to walk; Fine motor skills; A total/partial loss of a part of the body

Intellectual Disability:

- A **developmental disorder**
- Characterised by **limitations in intellectual functioning** (reasoning, learning, problem-solving) and **adaptive behaviour** (communication, social and practical skills)
- Feature of conditions like **Down Syndrome**
- Those with Down Syndrome experience impairments in speech, motor-coordination, short-term memory, learning speed and learning ability

Autism:

- A **lifelong developmental disability**
- **Affects a person's ability to communicate and relate with others**
- A person with autism may have **differing degrees of autism** as well as intellectual abilities

Cerebral Palsy:

- **Disability affecting movement and posture**
- **Not curable** — **can result in a range of physical and cognitive impairments**
  - Examples: extreme tightness/looseness of the body muscles; improper head, shoulder or hip control; speech and intellectual impairments

Attention deficit/hyperactivity disorder (ADD/ADHD):

- **A neurodevelopmental disorder**
- Marked by a **pattern of inattention and/or hyperactivity and impulsivity**

Dyslexia:

- Characterised by **difficulties with accurate and/or fluent word recognition**

- **Poor spelling and decoding abilities**

After-effects of Stroke:
- Can include a variety of **physical, mental and emotional impairments**
    - Examples: difficulties with motor coordination; difficulties with cognition; feelings of fatigue, anxiety and or depression
- However, **stroke does not affect everyone in the same way** — a survivor may not experience all of these consequence

Survey on Persons with Disabilities (PWDs)

Q11a

Do you have regular contact with individuals with physical disability (e.g., loss of limbs, muscular dystrophy, polio, paralysis)?

[a] No, Never
[b] No regular contact, but sometimes meet
[c] Yes, have regular contact
Display options below only if [c] is selected (multiple-answer)
[i] As family members or relatives
[ii] As classmates or colleagues at work
[iii] As friends

Q11b

Do you have regular contact with individuals with deafness or who are hard-of-hearing?

[a] No, Never
[b] No regular contact, but sometimes meet
[c] Yes, have regular contact
Display options below only if [c] is selected (multiple-answer)
[i] As family members or relatives
[ii] As classmates or colleagues at work
[iii] As friends

Q11c

Do you have regular contact with individuals with blindness or who are visually impaired?

[a] No, Never
[b] No regular contact, but sometimes meet
[c] Yes, have regular contact
Display options below only if [c] is selected (multiple-answer)
[i] As family members or relatives
[ii] As classmates or colleagues at work
[iii] As friends

Q11d

Do you have regular contact with individuals with muteness?

[a] No, Never

[b] No regular contact, but sometimes meet
[c] Yes, have regular contact
Display options below only if [c] is selected (multiple-answer)
[i] As family members or relatives
[ii] As classmates or colleagues at work
[iii] As friends

Q11e

Do you have regular contact with individuals with down syndrome or other types of intellectual disability?

[a] No, Never
[b] No regular contact, but sometimes meet
[c] Yes, have regular contact
Display options below only if [c] is selected (multiple-answer)
[i] As family members or relatives
[ii] As classmates or colleagues at work
[iii] As friends

Q11f

Do you have regular contact with individuals with autism?

[a] No, Never
[b] No regular contact, but sometimes meet
[c] Yes, have regular contact
Display options below only if [c] is selected (multiple-answer)
[i] As family members or relatives
[ii] As classmates or colleagues at work
[iii] As friends

Q11g

Do you have regular contact with individuals with cerebral palsy?

[a] No, Never
[b] No regular contact, but sometimes meet
[c] Yes, have regular contact
Display options below only if [c] is selected (multiple-answer)
[i] As family members or relatives
[ii] As classmates or colleagues at work
[iii] As friends

Q11h

Do you have regular contact with individuals with attention deficit/hyperactivity disorder (ADD/ADHD)?

[a] No, Never
[b] No regular contact, but sometimes meet
[c] Yes, have regular contact
Display options below only if [c] is selected (multiple-answer)
[i] As family members or relatives
[ii] As classmates or colleagues at work
[iii] As friends

Q11i

Do you have regular contact with individuals with dyslexia?

[a] No, Never
[b] No regular contact, but sometimes meet
[c] Yes, have regular contact
Display options below only if [c] is selected (multiple-answer)
[i] As family members or relatives
[ii] As classmates or colleagues at work
[iii] As friends

Q11j

Do you have regular contact with stroke survivor(s) with resulting disabling conditions?

[a] No, Never
[b] No regular contact, but sometimes meet
[c] Yes, have regular contact
Display options below only if [c] is selected (multiple-answer)
[i] As family members or relatives
[ii] As classmates or colleagues at work
[iii] As friends

[Q12.] *(Single Answer)* How comfortable would you be **to make friends with someone from** the following groups?

Someone with:	[1] Very uncomfortable	[2] Moderately uncomfortable	[3] Slightly uncomfortable	[4] Slightly comfortable	[5] Moderately comfortable	[6] Very comfortable
[a] Physical Disability (e.g., loss of limbs; muscular dystrophy; polio; paralysis)						
[b] Deafness or who are hard-of-hearing						
[c] Blindness or who are visually impaired						
[d] Muteness						
[e] Down Syndrome or other types of Intellectual Disability						
[f] Autism						
[g] Cerebral Palsy						
[h] Attention Deficit/Hyperactivity Disorder (ADD/ADHD)						
[i] Dyslexia						
[j] Stroke survivor with resulting disabling conditions						

[Q13.] *(Single Answer)* How comfortable would you be to have someone from one of the following groups **as your colleague in the same office**? Please only select one choice per group.

Someone with:	[1] Very uncomfortable	[2] Moderately uncomfortable	[3] Slightly uncomfortable	[4] Slightly comfortable	[5] Moderately comfortable	[6] Very comfortable
[a] Physical Disability (e.g., loss of limbs; muscular dystrophy; polio; paralysis)						
[b] Deafness or who are hard-of-hearing						
[c] Blindness or who are visually impaired						
[d] Muteness						
[e] Down Syndrome or other types of Intellectual Disability						
[f] Autism						
[g] Cerebral Palsy						
[h] Attention Deficit/Hyperactivity Disorder (ADD/ADHD)						
[i] Dyslexia						
[j] Stroke survivor with resulting disabling conditions						

For each of the following questions, you will be asked to imagine your response to a specific scenario and then select the option which best represents this response.

Education

[Q14.] *(Multiple Answer)* **Scenario 1: It is the start of the school year. You realise that your child is in a class with students of different learning abilities.**

Which of the following groups of students would you be comfortable to have in a class with your child? Please select all those you would be comfortable with.

Students with:	
[a] Physical Disability (e.g., loss of limbs; muscular dystrophy; polio; paralysis)	☐
[b] Deafness or who are hard-of-hearing	☐
[c] Blindness or who are visually impaired	☐
[d] Muteness	☐
[e] Down Syndrome or other types of Intellectual Disability	☐
[f] Autism	☐
[g] Cerebral Palsy	☐
[h] Attention Deficit/Hyperactivity Disorder (ADD/ADHD)	☐
[i] Dyslexia	☐
[j] Poor motivation for studying	☐
[k] Disruptive tendencies in class	☐
[l] I will not be comfortable with students from any of the above groups	☐

Employment

[Q15.] *(Multiple Answer)* **Scenario 2: You are an employer who has to hire suitable employees for various positions in your company. You have come across a range of applicants with disabilities. They have demonstrated their ability to perform the available jobs, but will need some accommodation, which are supported by government grants (e.g., specially designed workspaces etc).**

Which of the following persons would you be comfortable to hire? Please select all those you would be comfortable with.

Persons with:	
[a] Physical Disability (e.g., loss of limbs; muscular dystrophy; polio; paralysis)	☐
[b] Deafness or who are hard-of-hearing	☐
[c] Blindness or who are visually impaired	☐
[d] Muteness	☐
[e] Down Syndrome or other types of Intellectual Disability	☐
[f] Autism	☐
[g] Cerebral Palsy	☐
[h] Attention Deficit/Hyperactivity Disorder (ADD/ADHD)	☐
[i] Dyslexia	☐
[j] Stroke survivor with resulting disabling conditions	☐

Public Space

[Q16.] *(Multiple Answer)* **Scenario 3: You have just entered an empty lift when another person entered.**

Which of the following persons would you be comfortable to share such a space with? Please select all those you would be comfortable with.

Persons with:	
[a] Physical Disability (e.g., loss of limbs; muscular dystrophy; polio; paralysis)	☐
[b] Deafness or who are hard-of-hearing	☐
[c] Blindness or who are visually impaired	☐
[d] Muteness	☐
[d] Down Syndrome or other types of Intellectual Disability	☐
[e] Autism	☐
[f] Cerebral Palsy	☐
[g] Attention Deficit/Hyperactivity Disorder (ADD/ADHD)	☐
[h] Dyslexia	☐
[i] Stroke survivor with resulting disabling conditions	☐
[j] I will not be comfortable with persons from any of the above groups	☐

[Q17.] *(Multiple Answer)* **Scenario 4: Your child was playing alone at the playground when another child came over and indicated that he/she wanted to play together.**

Which of the following children would you be comfortable to let your child play with? Please select all those you would be comfortable with.

A child with:	
[a] Physical Disability (e.g., loss of limbs; muscular dystrophy; polio; paralysis)	☐
[b] Deafness or who is hard-of-hearing	☐
[c] Blindness or who is visually impaired	☐
[d] Muteness	☐
[e] Down Syndrome or other types of Intellectual Disability	☐
[f] Autism	☐
[g] Cerebral Palsy	☐
[h] Attention Deficit/Hyperactivity Disorder (ADD/ADHD)	☐
[i] Dyslexia	☐
[j] I will not be comfortable with children from any of the above groups	☐

[Q18.] Would you have any specific concerns about working with PWDs in a professional setting? If yes, please select any options that apply.
[a] No, I would not have any concerns.
[b] Yes, I would have some concerns.
Display options below only if [b] is selected (multiple-answer):
[i] I do not know how to work with PWDs.
[ii] I am afraid that working with PWDs will put me in danger.
[iii] Special arrangements are needed (e.g., redesigned workspaces) to ensure that PWDs work effectively and these are difficult to make.
[iv] PWDs might not be able to fit in with other employees.
[v] Others, please specify:

[Q19.] Would you have any specific concerns about sharing public spaces (e.g., lifts, parks, restaurants) with PWDs? If yes, please select any options that apply.
[a] No, I would not have any concerns.
[b] Yes, I would have some concerns.
Display options below only if [b] is selected (multiple-answer):
[i] I do not know how to interact with PWDs.
[ii] I do not know how to respond if PWDs require assistance.
[iii] I am afraid that interacting with PWDs may be dangerous for me.
[iv] Others, please specify:

[Q20.] Would you have any specific concerns about your child/children being in close contact with PWDs? If yes, please select any options that apply.
[a] No, I would not have any concerns.
[b] Yes, I would have some concerns.
Display options below only if [b] is selected (multiple-answer):
[i] My child/children do not know how to interact with PWDs.
[ii] My child/children might not know how to respond if PWDs require assistance.
[iii] I am afraid that interactions with PWDs may endanger my child/children.
[vi] Others, please specify:

In the past decade, many efforts have been made to cultivate a more inclusive society. However, different expectations, of the minimum social standards that Singapore should aspire to achieve, may emerge given limited resources.

Q21a-Q26a. First, please select your most preferred set of standards from the two options given (i.e., Scenario A and B). Second, please indicate the extent to which you identify with the selected scenario.

		Code 1	Code 2
Q21a		**Scenario A:** Education for children with disabilities should focus on providing them with basic skills to be independent	**Scenario B:** Education for children with disabilities should focus on allowing them to reach their fullest academic potential possible
Q22 b		**Scenario A:** Ensure that all PWDs are able to find work that gives them a basic salary	**Scenario B:** Ensure that all PWDs are able to pursue their ideal form of employment and aspire like other workers to well-paying jobs
Q23c		Scenario A: Ensure that all PWDs have access to residential options where needs for shelter and safety are met	**Scenario B:** Ensure that all PWDs have access to residential options where they can participate meaningfully in community life on top of having needs for shelter and safety met
Q24 d		**Scenario A:** Ensure that classes on interacting respectfully with PWDs are easily accessible for those who wish to educate themselves	**Scenario B:** Ensure that students and workers in Singapore attend classes on interacting respectfully with PWDs
Q25e		**Scenario A:** Ensure that some public spaces (e.g., playgrounds; shopping centres) are accessible for PWDs	**Scenario B:** Ensure that all public spaces (e.g., playgrounds; shopping centres) are designed such that they are fully accessible for PWDs

| **Q26f** | **Scenario A:** Ensure that subsidies to help PWDs are given only to those whose families do not have the financial means | **Scenario B:** Ensure that subsidies to help PWDs are given to all PWDs, regardless of their families' financial means |

Q21b-Q26b. Second, please indicate the extent to which you identify with the selected scenario

[PN: Show 3-point rating, pipe "X" based on selected "Scenario A" or "Scenario B" in Q21a-Q26a, respectively.]

1	2	3
Strongly identify with [pipe: Scenario X]	Moderately identify with [pipe: Scenario X]	Slightly identify with [pipe: Scenario X]

Please read each of the following statements about PWDs and indicate the extent to which you agree/disagree.

[Q27.] "Even if PWDs try hard, they often cannot reach their goals."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree
[Q28.] "PWDs complain too much about their situation in society."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree

[Q29.] "If PWDs would just try harder, they would be as well off as people without disabilities."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree
[Q30.] "It is easy to understand the frustrations experienced by PWDs."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree
[Q31.] "Any PWD who is willing to work hard has a good chance of succeeding."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree

	[7] Strongly Disagree
[Q32.] "If PWDs work hard, they almost always get what they want."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree
[Q33.] "Over the past few years, PWDs have gotten less than they deserve."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree
[Q34.] "Discrimination against PWDs is no longer a problem in Singapore."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree

[Q35.] "Most PWDs who don't get ahead should not blame the system; they only have themselves to blame."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree
[Q36.] "Hard work offers little guarantee of success for PWDs."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree
[Q37.] "PWDs should stay hidden."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree

	[6] Disagree [7] Strongly Disagree
[Q38.] "Even if PWDs are ambitious, they often cannot succeed."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree
[Q39.] "PWDs are demanding too much from the rest of society."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree

[Q40.] "This is an attention-check question. Please select "Strongly Agree" for this question."	[1] Strongly Agree [2] Agree [3] Somewhat Agree [4] Neither Agree nor Disagree [5] Somewhat Disagree [6] Disagree [7] Strongly Disagree

In recent years, greater attention has been given to the building of an inclusive society. In certain cases, efforts to facilitate the greater inclusion of PWDs may entail changes for persons *without* disabilities.

For each of the scenarios that follow, please select the response which best represents your own view.

[Q41.]	Audible traffic lights enable persons with visual impairment to cross any street independently. However, they can create noise at odd hours during the day and night which some consider to be a nuisance. Would you personally support the installation of audible traffic lights throughout Singapore?
	Yes
	No

[Q42.]	Accessible carpark lots reserved for PWDs allows greater ease in travelling. However, this arrangement will mean fewer carpark lots for those without disabilities. Would you personally support increasing the ratio of accessible carpark lots reserved for PWDs?
	Yes
	No

[Q43.]	The announcement of queue numbers in medical settings (e.g., polyclinics; hospitals) and public service settings (e.g., accessing ICA services) would allow persons with visual impairment to use these services independently. However, it results in noise for other service users. Would you personally support the establishment of such announcements in these settings?

	Yes
	No

[Q44 .]	Housing forms which allow PWDs to live in public housing estates and share common spaces (e.g., corridors, lifts, void deck, playgrounds, food centres, parks, shops) can enable them to lead more active lives in the community. However, neighbours/fellow residents may have to adapt and learn how to engage PWDs appropriately throughout their everyday life. Would you personally support the establishment of such housing forms as the default in Singapore?
	Yes
	No

There are a number of interactions you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability. Which of the following responses would you have if you:

Q45
There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability.

What would you do if you see someone with a white cane waiting at a bus stop and seemingly want to catch a bus?

[a] Go up to them and see if they need help
[b] Leave them alone as they are more likely able to manage by themselves, unless they request for help
[c] Keep a distance
Display options below only if [c] is selected (multiple-answer)
Please indicate the reasons behind your choice by selecting one of the options below . If there is no suitable option, then please specify your reasons in the space provided under "other reasons':
[i] It is not my responsibility to do anything
[ii] I do not know how to help them even if they ask me
[iii] I do not know how to behave around them
[iv] I do not want them to feel pitied
[v] Other reasons (please specify):
[d] Other reasons (please specify):

Q46

There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability.

What would you do if you see a wheelchair user having difficulty getting their wheelchair to move?

| [a] Go up to them and see if they need help |
| [b] Leave them alone as they are more likely able to manage by themselves, unless they request for help |
| [c] Keep a distance |
| *Display options below only if [c] is selected (multiple-answer)* |
| Please indicate the reasons behind your choice by selecting one of the options below . If there is no suitable option, then please specify your reasons in the space provided under "other reasons': |
| [i] It is not my responsibility to do anything |
| [ii] I do not know how to help them even if they ask me |
| [iii] I do not know how to behave around them |
| [iv] I do not want them to feel pitied |
| [v] Other reasons (please specify): |
| [d] Other reasons (please specify): |

Q47

There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability.

What would you do if you encounter someone on a train who does not seem to hear the latest announcements asking all passengers to exit immediately?

[a] Go up to them and see if they need help
[b] Leave them alone as they are more likely able to manage by themselves, unless they request for help
[c] Keep a distance
Display options below only if [c] is selected (multiple-answer)
Please indicate the reasons behind your choice by selecting one of the options below . If there is no suitable option, then please specify your reasons in the space provided under "other reasons':
[i] It is not my responsibility to do anything
[ii] I do not know how to help them even if they ask me
[iii] I do not know how to behave around them
[iv] I do not want them to feel pitied
[v] Other reasons (please specify):
[d] Other reasons (please specify):

Q48

There are a number of interactions that you may have with PWDs as you go about your day. Sometimes, however, you may find it difficult to tell if someone has a disability.

What would you do if you see someone singing loudly to themselves on the bus, without seeming to notice the discomfort of other passengers?

[a] Go up to them and see if they need help
[b] Leave them alone as they are more likely able to manage by themselves, unless they request for help
[c] Keep a distance
Display options below only if [c] is selected (multiple-answer)
Please indicate the reasons behind your choice by selecting one of the options below . If there is no suitable option, then please specify your reasons in the space provided under "other reasons':
[i] It is not my responsibility to do anything
[ii] I do not know how to help them even if they ask me
[iii] I do not know how to behave around them
[iv] I do not want them to feel pitied
[v] Other reasons (please specify):
[d] Other reasons (please specify):

[Q 49.]	How would you place your views on the scale below? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between:

In general, the government should take more responsibility to ensure that everyone is provided for									**In general, people should take more responsibility to provide for themselves**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
o	o	o	o	o	o	o	o	o	o

The following statements pertain to PWDs in Singapore society. Please read each and indicate the degree to which you agree/disagree.

	[1] Strongly Disagree	[2] Disagree	[3] Somewhat Disagree	[4] Somewhat Agree	[5] Agree	[6] Strongly Agree
[Q50.] There has been considerable improvement to the lives of PWDs in Singapore over the past few decades.						
[Q51.] It is only right that employers find ways to accommodate those with disabilities at their workplaces.						
[Q52.] I will help PWDs if I have the opportunity to do so.						
[Q53.] I am interested to learn how to be supportive of PWDs.						
[Q54.] I do not know much about the needs of PWDs.						
[Q55.] I have supported charitable causes (e.g., volunteered, donated on a regular basis) for PWDs.						

[Q56.] Caregivers of PWDs should be given a basic income, if they are unable to work because of caregiving responsibilities.						

Please read each of the statements listed below and indicate if you think the Singapore government should be doing more or less of the following:

	[1] A lot more	[2] Somewhat More	[3] No Change from Present	[4] Somewhat Less	[5] A lot less
[Q57.] The government should introduce laws that prevent PWDs from being rejected from jobs merely because of their disability.					
[Q58.] The government should help PWDs find jobs that reflect their skills and interests.					
[Q59.] The government should ensure that education for PWDs maximises their talent and reflects their interests.					
[Q60.] The government should ensure that buildings are accessible to PWDs.					
[Q61.] The government should ensure that public transport is accessible to PWDs.					
[Q62.] The government should do means testing to ensure that subsidies for PWDs are only given to households who do not have sufficient means.					

[Q63.] The government should give generous subsidies for the care and education of PWDs.					

End

Annex 4

About the Authors

ANNEX 4: ABOUT THE AUTHORS

MATHEW Mathews is Head of IPS Social Lab, a centre for social indicator research and a Principal Research Fellow at the Institute of Policy Studies (IPS), Lee Kuan Yew School of Public Policy at the National University of Singapore. He also leads the IPS Programme of Race, Religion and Intergroup Cohesion, which regularly organises workshops to raise awareness about biases and sharpen skills of how to navigate diversity issues while building harmonious relationships in work settings. To date, Mathews has led over 60 research projects, most of them addressing social policy and inclusion issues, including workplace discrimination. He sits on various committees and boards in the government and people sector.

Sakunika **WEWALAARACHCHI** is Manager at IPS Social Lab in the Institute of Policy Studies. Her responsibilities span multiple stages of research operations including those of proposal writing, research design, on-site fieldwork coordination, manpower management, data collection and analysis, writing/reporting, research presentations, stakeholder engagement and post-research evaluation.

She holds Master's and Bachelor's degrees in Sociology from the National University of Singapore and was awarded the Chng Heng Lay Memorial Prize in 2015 for her Honours Dissertation on issues of gender and family in Singapore.

Prior to joining IPS in 2019, she served as a full-time Research Assistant for the NUS Department of Sociology for three years. In toto, she has amassed seven years of quantitative and qualitative research experience and four years of project management experience managing research projects funded by government agencies (i.e., NCSS, PMO and MSF), including Social Lab's flagship study the "Singapore Panel Study on Social Dynamics" (SPSSD), which was funded S$1,000,000 per year in 2021 and 2022.

Over the course of her research career, Sakunika has investigated a broad range of social issues including those related to disability, social capital, neighbourhood confidence, national identity and the impact of Covid-19. In 2021, she also worked closely with the Ministry of Social and Family Development in her role as research analyst for the seminal White Paper on Singapore's Women's Development released 28 March 2022.

Elizabeth **LIM** is Research Associate at the Institute of Policy Studies Social Lab. After graduating with a Bachelor's degree in Psychology at the University of Melbourne, she joined A*STAR to research the impact of socioeconomic status and inequality on appetite regulation and well-being. She later pursued a Master in Philosophy (Psychology) at the Singapore Management University to explore the potential of gratitude in enhancing wellbeing and relationships. Currently, Elizabeth focuses on quantitative survey methods, and studying psychosocial influences on behaviour, including COVID-19's effects on Singaporeans, especially those in lower-income households. Her research interests span national identity and inclusivity, and aim to inform policy and interventions in Singapore through data-driven approaches.

SIM Kai Lin is a Research Associate at IPS Social Lab in the Institute of Policy Studies. With several years of relevant research experience, Kai Lin's past research has focused on understanding the lived experiences of friendship and kinship within the context of Singapore, where respondents are able to draw on existing contrasting and conflicting narratives to create, perpetuate, negotiate, maintain and contest social ties among friends.

Kai Lin studies and applies ethnographic research methods, such as participant observation and in-depth interviews in her fieldwork. In addition, she has also undertaken courses in data analytics and healthcare with Singapore Management University (SMU), where she has applied her knowledge of statistics and healthcare to analyse key performance indicators in a community healthcare hospital, and thereby propose intervention strategies to improve patients' clinical outcomes. Her past qualitative projects at IPS focus on family violence, disabilities and issues related to race and religion. Kai Lin has a Master's and Bachelor's degrees in Sociology from National University of Singapore, and is certified by SMU as a healthcare analytics professional.

SAMANTHA **NAH** is a former Research Assistant at the Institute of Policy Studies Social Lab. Her research projects concern social issues such as race relations and inclusivity. She holds a joint bachelor's degree from the National University of Singapore and the Australian National University. Prior to joining IPS, she worked in journalism. Presently, she is pursuing her masters at National University of Singapore.