



JYVÄSKYLÄN YLIOPISTO
UNIVERSITY OF JYVÄSKYLÄ



www.jyu.fi/agecare

**Centre of Excellence in
Research on Ageing and
Care**

**Department of Social
Sciences and Philosophy**

University of Jyväskylä

23 September 2019

Eldercare work and technology

2019 University of Jyväskylä survey study on
eldercare work: Overview of survey data

Joonas Karhinen

Sakari Taipale

Mia Tammelin

Antti Hämäläinen

Helena Hirvonen

Tomi Oinas

Goal of the research survey

1. To obtain information on:
 - a) employees working with services for older people.
 - b) the nature of the work and working conditions in services for older people.
2. To obtain a current view of the use of technology in services for older people.
3. To examine how the use of digital technologies is linked to working conditions, daily work routines and care relationships.
4. To monitor the nature of care work and its digitalisation during 2019-2025.

Target group and implementation

- Workers engaged in the daily care work and nursing, and other employees who participate in producing, developing or managing services for older people
 - those engaged in care and nursing work; immediate supervisors; directors; physical therapists; social workers; other (e.g. project workers, social advisors, welfare assistants)
- Target group reached through trade union (SuPer, Tehy, JHL and Talentia) member registers.
- Online survey ([1ka online survey application](#)):
 - In 2019, a broad baseline survey for trade union members, which was used to recruit for the respondent panel (University of Jyväskylä as the controller of the register).
 - The broad survey may be repeated at a later time (2021, 2023 and/or 2025).
 - More detailed follow-up surveys potentially for the members of the respondent panel.
- The languages of the survey are Finnish and Swedish.

Implementing the survey

- The trade unions provided comprehensive feedback and development suggestions for formulating the questionnaire. The online version of the survey was drafted during February-March 2019.
- The online questionnaire was tested with a small test respondent group (N=14) in March 2019.
- The final questionnaire contained 62 questions and 12 pages. Responding to the survey took approx. 20 minutes.
- Invitations to respond to the survey were sent by the trade unions to the members selected by sampling on 3 April 2019 and the responses were requested to be submitted by 18 April. A reminder message was sent on 15 April and the survey was closed on 21 April.
- A total of 6,903 responses were received to the survey. Of the respondents, 3,758 joined the respondent panel.

INITIAL OBSERVATIONS FROM THE SURVEY

Number of respondents

| Trade union | <i>Finn.</i> | <i>Swed.</i> | <i>total</i> | <i>% share</i> | <i>sample size*</i> | <i>response %</i> |
|--------------------|--------------|--------------|--------------|----------------|---------------------|-------------------|
| SuPer | 3,543 | 83 | 3,626 | 52.5 | 18,106 | 20.0 |
| Tehy | 2,384 | 42 | 2,426 | 35.1 | 17,459 | 13.9 |
| JHL | 579 | 11 | 590 | 8.5 | 4,768 | 12.4 |
| Talentia | 252 | 9 | 261 | 3.8 | 7,521 | 3.5 |
| Total | 6,758 | 145 | 6,903 | 100 % | 47,854 | 14.4 % |

*Sampling method by trade union:

- SuPer: the survey was sent using random sampling to every other member of the target group of 38,000. The final sample size was 18,106 respondents with valid email addresses.
- Tehy: sampling consisted of two different samples: 1) those among the target group of the survey based on employer information (responses 1,760, sample 7,859) and 2) random sampling by including every third member in the member register (responses 666, sample 9,600). The sample size was ultimately 17,459.
- JHL: the survey was sent to every other member of the target group of 11,000. The final sample size was 4,768 respondents with valid email addresses.
- Talentia: the members in the potential target group were defined using their titles and education (8,390), all which were sent the survey. Due to missing or inactive email addresses, the final sample size was 7,521 respondents.

Respondents who joined the respondent panel and the quality of the responses

| Joined respondent panel | | Completion rate of responses* | |
|-------------------------|--------------|-------------------------------|-------------|
| | <i>N</i> | <i>N</i> | % |
| Trade union | | | |
| SuPer | 2,072 | 5,291 | 83.0% |
| Tehy | 1,267 | 472 | 7.4% |
| JHL | 284 | 612 | 9.6% |
| Talentia | 135 | | |
| Total | 3,758 | 6,375** | 100% |

**answering the survey questions (%)*
***deducted respondents that were not in the target group or otherwise refused (=528)*

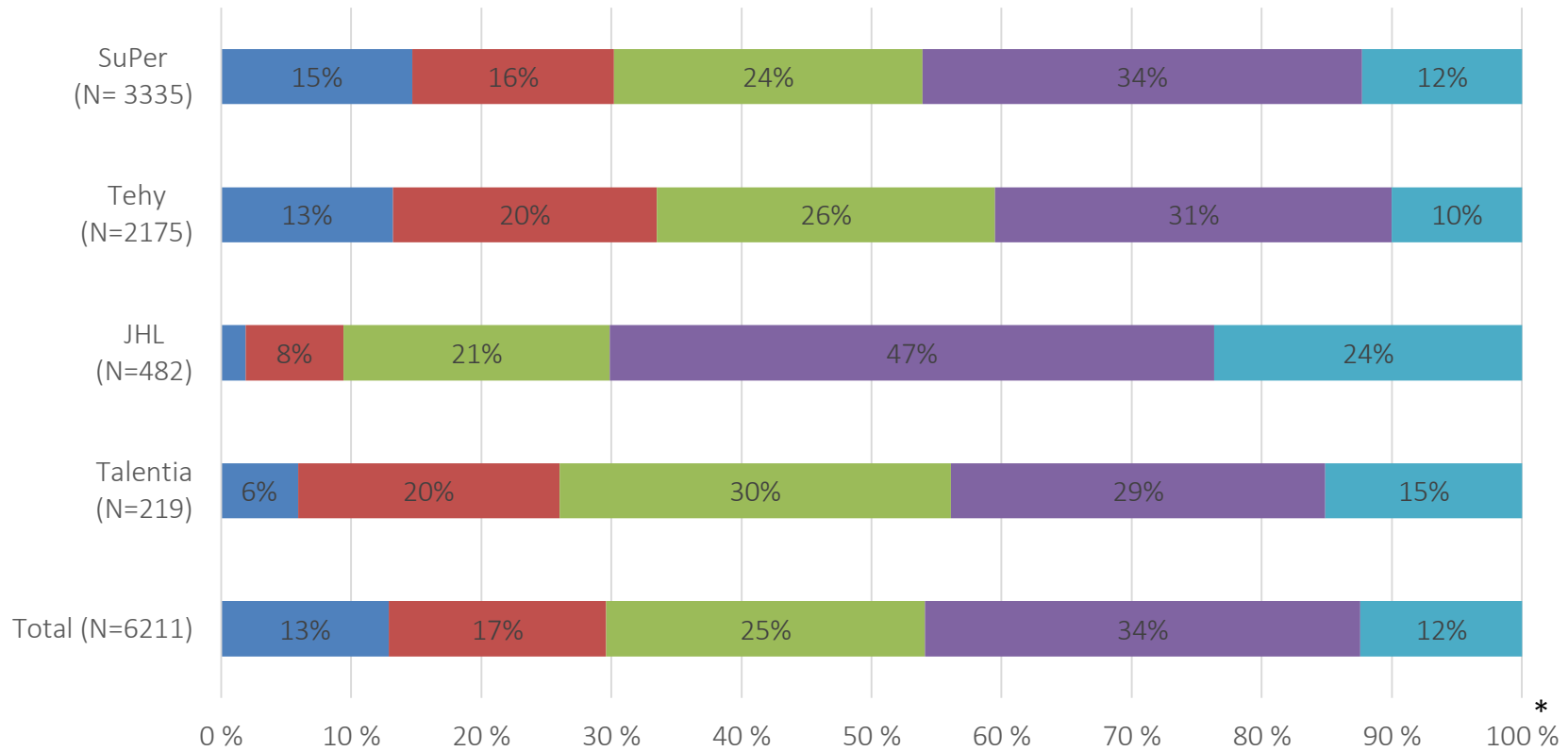
Observations on survey data

- The number of individuals in the target group varies in each trade union. Therefore, the sampling was implemented differently for different trade unions.
- The sample sizes for the survey were large so that a maximum number of responses would be obtained from different trade unions and professionals in different vocations and in order to recruit a sufficient number of panel respondents for follow-up surveys.
- There is also over-coverage in the samples, i.e. the survey was sent to subjects in the member registries that were not among the target group. This lowered the response rate.
- Of the 6,903 responses to the survey, those not among the target group and those who refused otherwise (528) were omitted, resulting in the final sample size of 6,375 responses. Of these, 5,291 responded to at least 80% of the survey.
- Responses were received as expected by trade union (e.g. the highest number of responses were received from SuPer).

Age distribution

Age groups by trade union

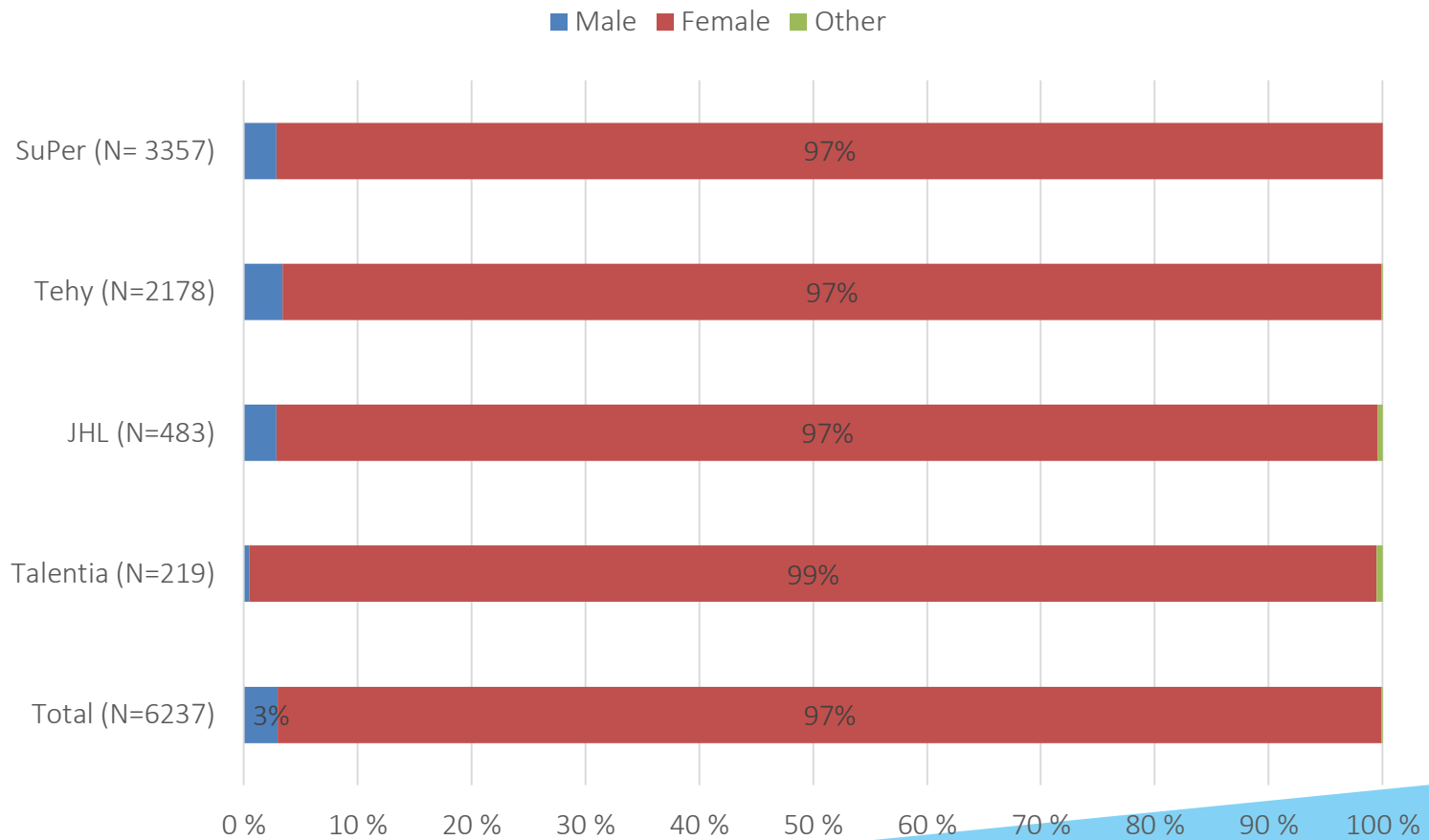
■ 18-29 ■ 30-39 ■ 40-49 ■ 50-59 ■ 60-



*Note. the percentages are rounded in the graphs

Age distribution

Gender distribution by trade union



Operational unit

What is the operational unit where you primarily work?

| Operational unit* | % | N |
|--|-------------|--------------|
| Intensive service housing** | 48.2 | 2,885 |
| Home care | 23.4 | 1,398 |
| Institutional care*** | 12.2 | 729 |
| Service housing | 6.7 | 400 |
| Others (e.g. social work services without accommodation, service centre, client and service counselling, rehabilitation and evaluation, hospital-based home care) | 9.5 | 571 |
| Total | 100% | 5,983 |

*Further details on operational unit classification on e.g. Finnish Institute for Health and Welfare website: <https://thl.fi/fi/tilastot-ja-data/tilastot-aiheittain/ikaantyneet/sosiaalihuollon-laitos-ja-asumispalvelut>

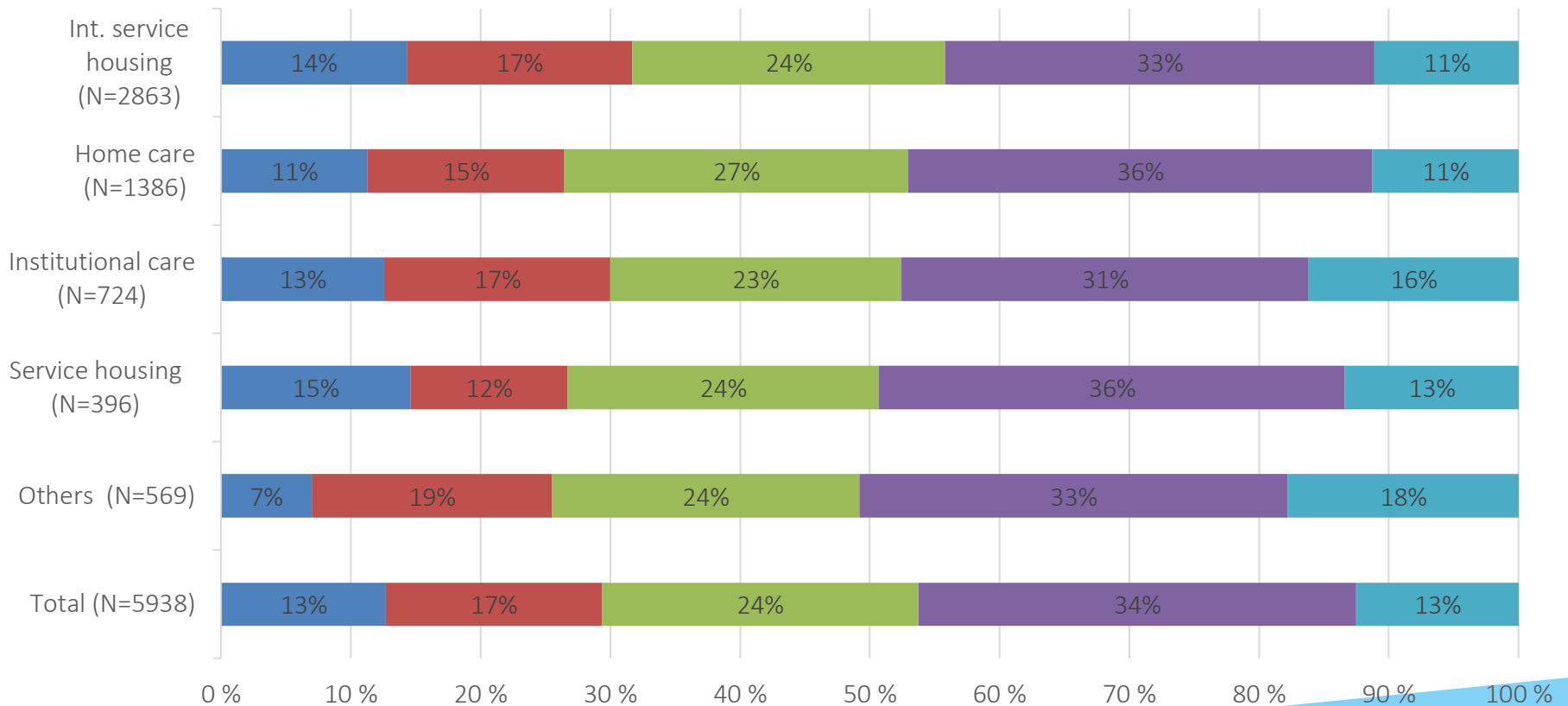
** Including nursing and care homes.

*** Includes inpatient wards at health care centres, hospitals and institutional nursing homes.

Age distribution by operational unit

Age groups by operational unit

■ 18-29 ■ 30-39 ■ 40-49 ■ 50-59 ■ 60-



Marital status and children

| Number of children under 18 living in the same household | | |
|--|-------------|--------------|
| Number | % | N |
| No children | 60.8 | 3,617 |
| One | 16.6 | 987 |
| Two | 14.5 | 861 |
| Three | 6.2 | 371 |
| Four or more | 1.9 | 112 |
| Total | 100% | 5,948 |

| Married or in a relationship* | | |
|-------------------------------|-------------|--------------|
| | % | N |
| Yes | 74.9 | 4,591 |
| No | 25.1 | 1,539 |
| Total | 100% | 6,130 |

* Yes = Marriage, cohabitation or registered partnership

* No = Unmarried, divorced, widow

Observations

- The age and gender distributions of the respondents were as expected.
- Based on the member information of the trade unions, the oldest member age groups responded more actively to this survey. The largest groups of respondents were the 40-49 year-old and the 50-59 year-old, which constituted over half of the respondents. The age distributions are similar also when analysing by the operational unit.
- It must be noted that the exact age and gender distributions of the target group are unknown, so the representativeness of the respondents cannot be completely reliably determined. We evaluate representativeness using the available member register information of the trade unions, but not all of the members work with services for the elderly.
- The survey had 3% (N = 187) male respondents.
- Approximately 75% of respondents are married or in a relationship. Of the respondents, 61% do not live in the same household with children younger than 18.
- Approximately half (48%) of the respondents state that they work in intensive service housing, and almost a fourth (23%) in home care. A bit over a tenth (12%) of the respondents work in institutional care.

Job titles and education

Job title

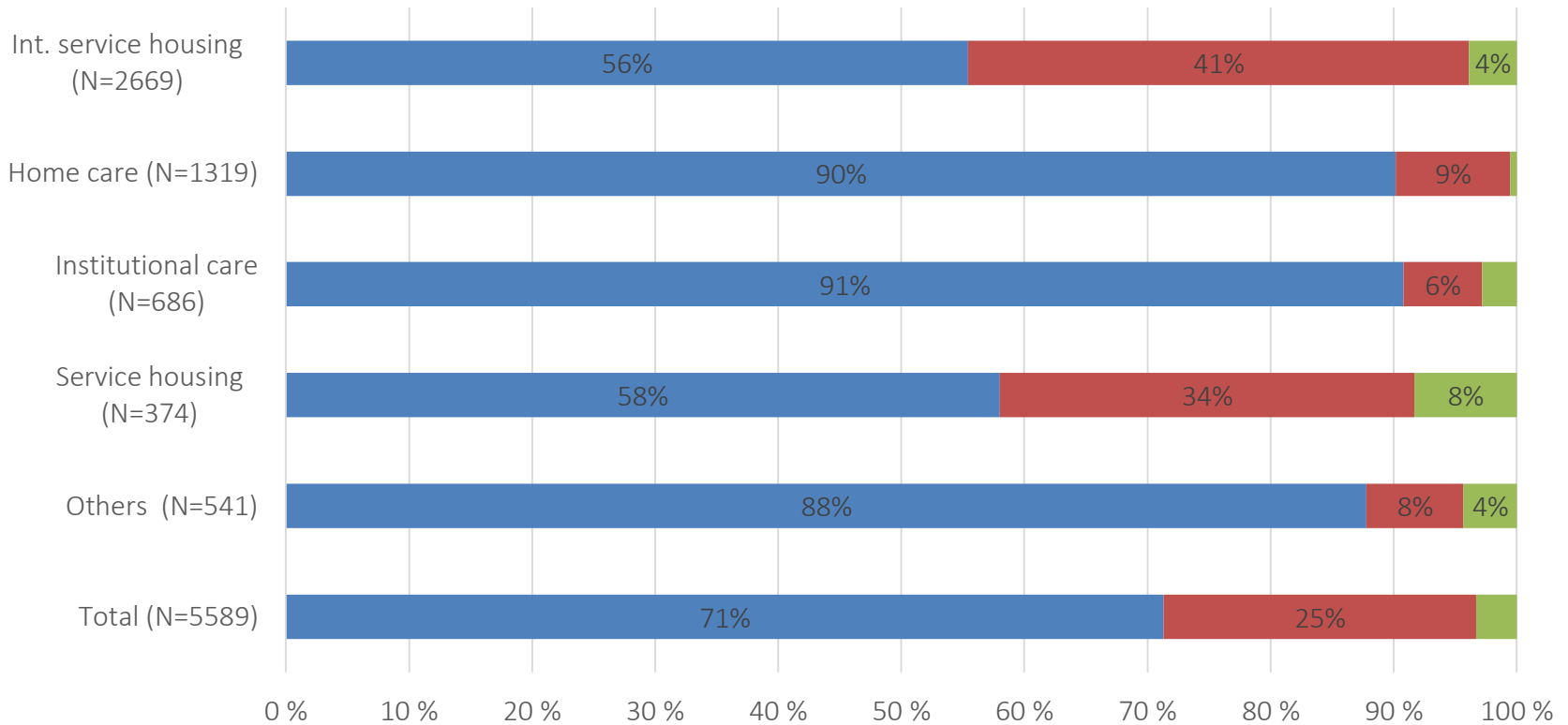
| (five most common responses) | % | N |
|---|-------------|--------------|
| Practical nurse, enrolled nurse, rehabilitation assistant, home aid | 63.4 | 3,865 |
| Registered nurse, public health nurse | 16.6 | 1,013 |
| Care-giver | 5.3 | 323 |
| Service manager, head nurse, charge nurse and similar immediate supervisors | 3.6 | 221 |
| Physiotherapist | 2.9 | 175 |
| <i>Others (e.g. social workers, various advisors, assistants)</i> | 8.1 | 496 |
| Total | 100% | 6,093 |

| Level of education | % | N |
|--|-------------|--------------|
| Comprehensive school | 2.2 | 134 |
| Vocational school / high school | 50.6 | 3,081 |
| Vocational institute | 24.3 | 1,477 |
| University of Applied Science or Bachelor's Degree | 19.3 | 1,178 |
| Master's Degree | 3.6 | 220 |
| Total | 100% | 6,090 |

Employer

Employer's sector

Public Private Third



Area of employment

Do you work in (selected one or more):

| Operational unit | <i>The Helsinki capital area</i> | <i>Another urban area</i> | <i>A rural area</i> |
|-----------------------------------|----------------------------------|---------------------------|---------------------|
| Int. service housing (N=2,880) | 8.6% | 67.1% | 25.7% |
| Home care (N=1,394) | 12.1% | 63.6% | 32.3% |
| Institutional care (N=724) | 14.8% | 63.1% | 23.3% |
| Service housing (N=399) | 16.8% | 61.7% | 22.1% |
| Others (N=570) | 17.4% | 67.2% | 20.9% |
| Total (N=5,967) | 11.6% | 65.4% | 26.2% |

Work experience

How long have you worked in the field of eldercare?

| Years of work* | % | <i>N</i> |
|------------------|-------------|--------------|
| less than a year | 3.1 | 191 |
| 1-4 years | 18.6 | 1,133 |
| 5-9 years | 21.6 | 1,315 |
| 10-19 years | 28.9 | 1,760 |
| 20-29 years | 16.3 | 995 |
| 30 years or more | 11.4 | 693 |
| Total | 100% | 6,087 |

* Average 13 years

Observations

- As expected, the largest job title group (over 60%) were practical nurses and others with secondary education degrees in nursing. The second largest job title group were nurses and public health nurses (17%).
- A majority (71%) of respondents work in the public sector, approximately a fourth (25%) in the private sector and 4% in the third sector.
 - When analysed by operational unit, 90% of the workers in home care and institutional care work in the public sector.
 - With intensive service housing and ordinary service housing, the distribution was more even but still over half work in the public sector.
- A majority of the respondents state that they work in an urban area (65%). Approximately a fourth (26%) of respondents work in rural areas.
- On average, the respondents have 13 years of experience. A bit over half (57%) have worked over ten years in the field of eldercare.

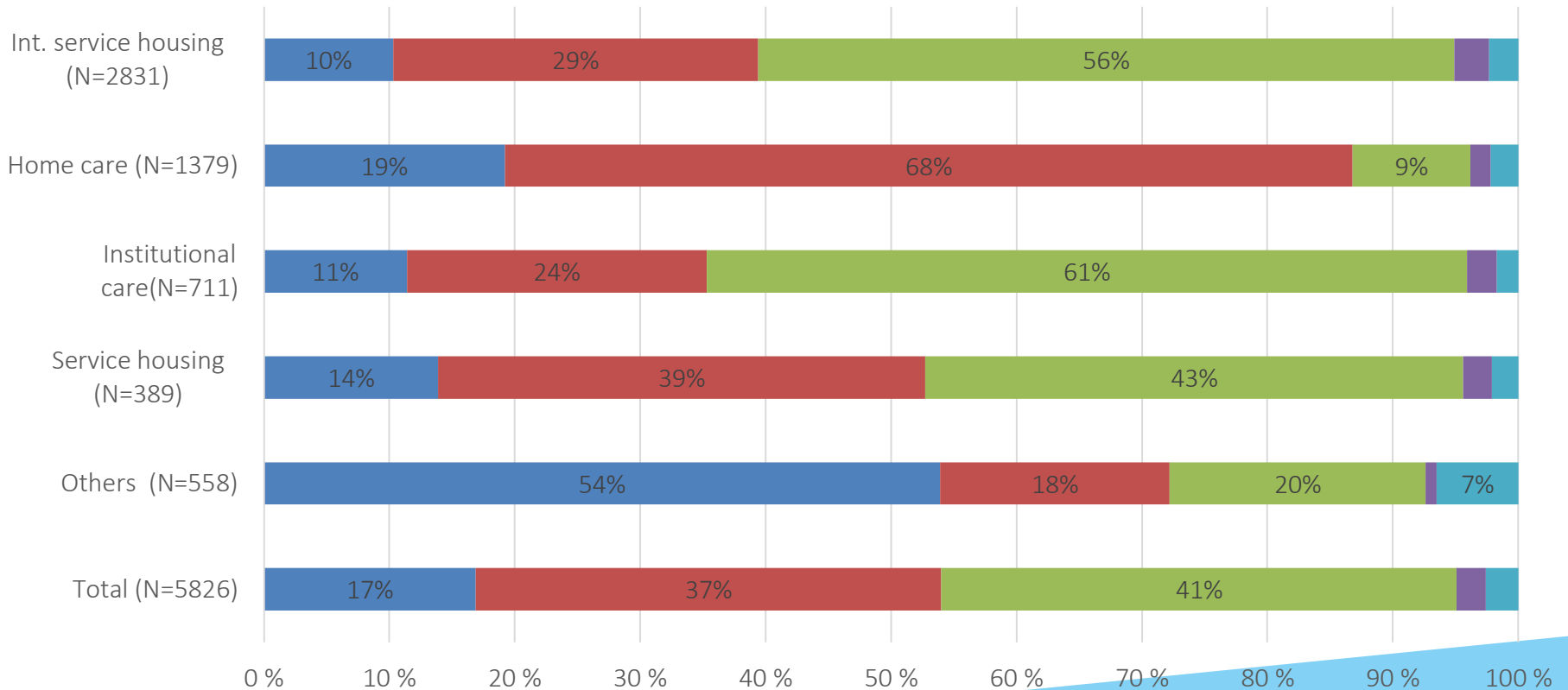
Employment information

| Operational unit | <i>Fixed-term (=yes)</i> | | <i>Temp agency workers (total)</i> | |
|-------------------------|--------------------------|--------------------------|------------------------------------|--------------------------|
| | % | <i>n</i> | % | <i>n</i> |
| Int. service housing | 13.0 | 371 (N=2,855) | 2.6 | 155 (N=6,067) |
| Home care | 11.6 | 161 (N=1,385) | | |
| Institutional care | 14.4 | 104 (N=721) | | |
| Service housing | 14.1 | 56 (N=397) | | |
| Others | 12.7 | 72 (N=566) | | |
| Total | 12.9 | 764 (N=5,924) | | |

Working hours

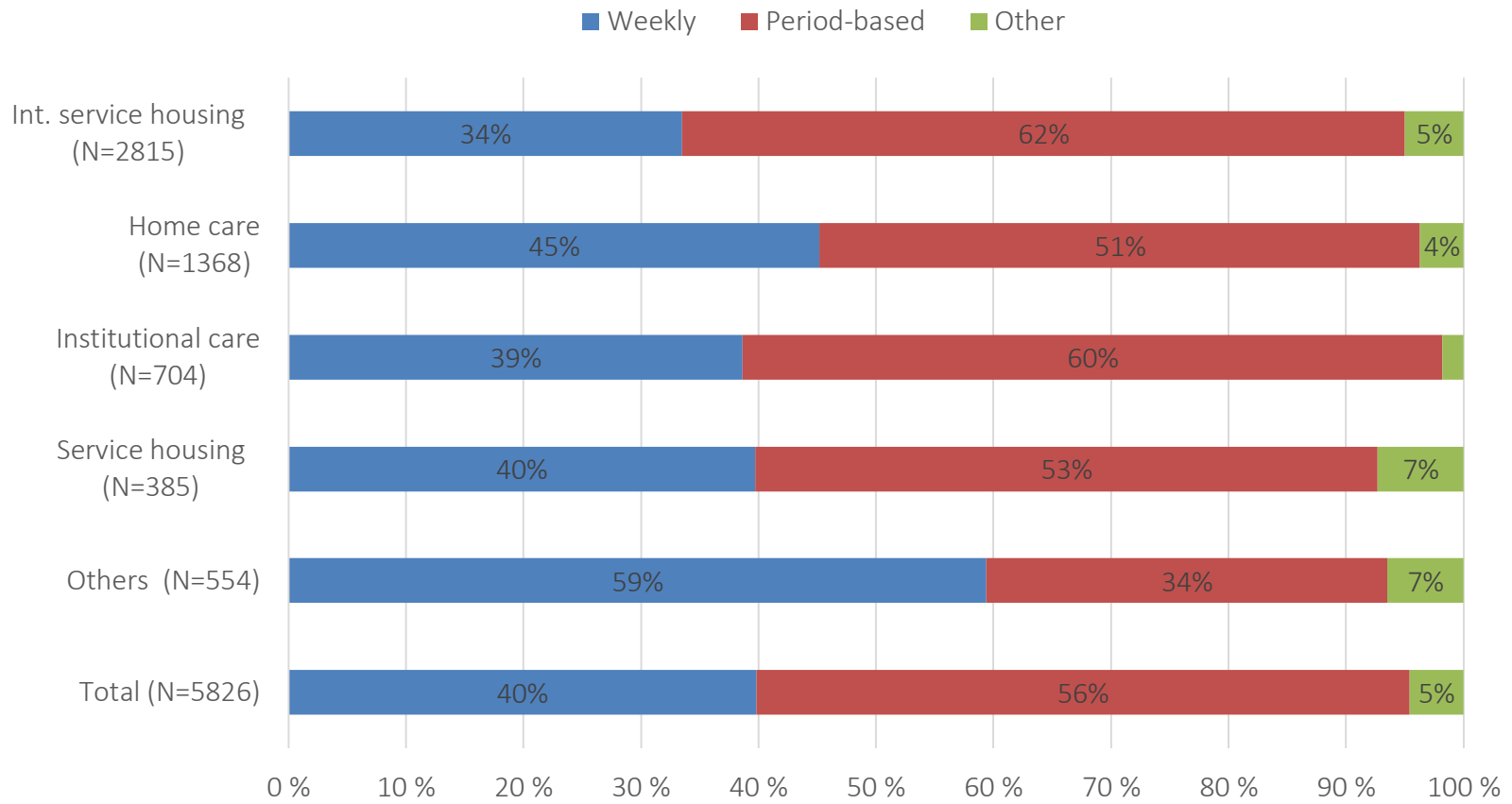
What are your working hours?

■ Days
 ■ Two-shift work
 ■ Three-shift work
 ■ Regular evenings or nights
 ■ Other type of working hours



Defining working hours

Working hours defined in employment contract



Those in supervisor roles

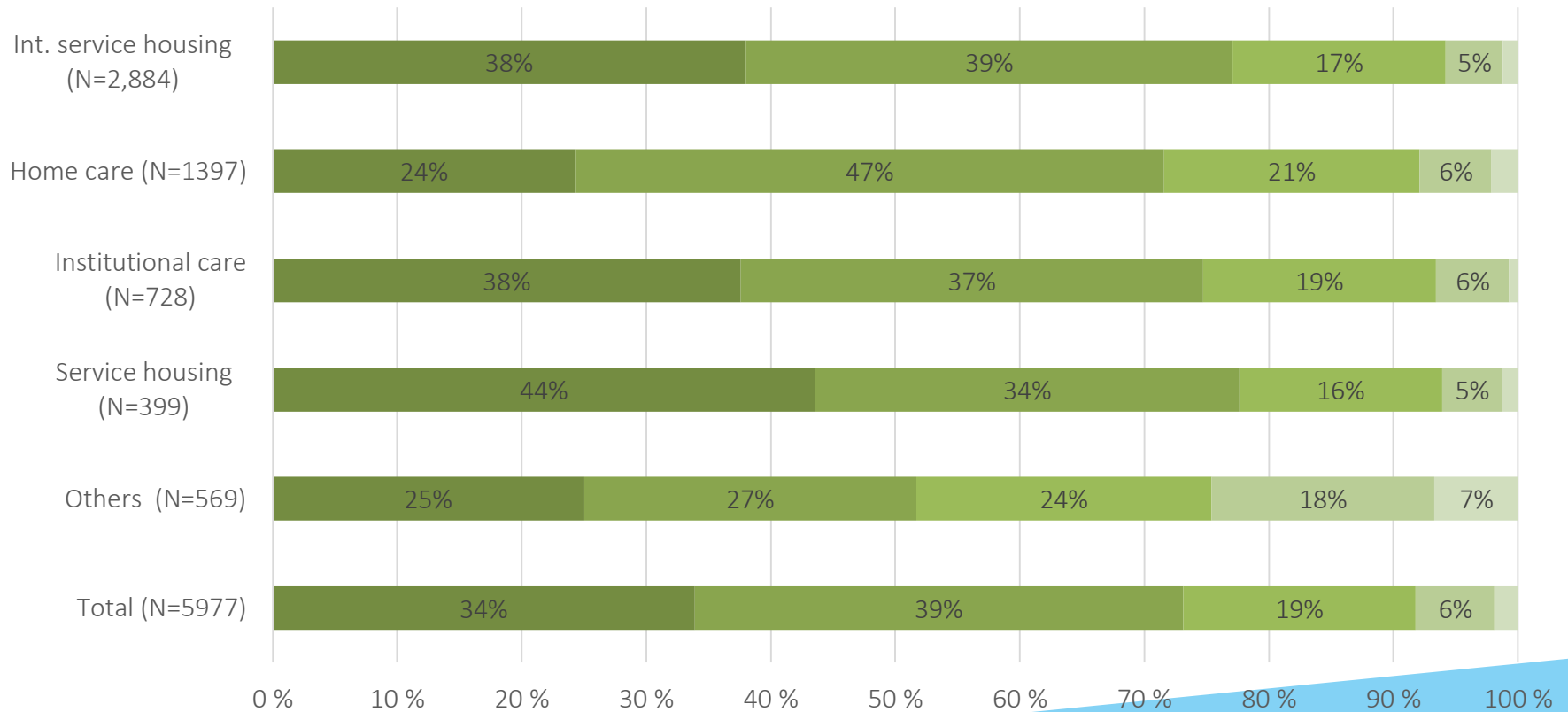
| Operational unit | <i>Are you in a supervisor role?*</i> (=yes) | |
|-------------------------|---|--------------------------------|
| | <i>%</i> | <i>n</i> |
| Int. service housing | 9.1 | 255 (N=2,803) |
| Home care | 6.8 | 93 (N=1,359) |
| Institutional care | 5.6 | 40 (N=708) |
| Service housing | 9.2 | 36 (N=391) |
| Others | 11.6 | 64 (N=550) |
| Total | 8.4 | 488 (N=5,811) |

*Are you in a supervisor role, i.e. do you have subordinates or does your work involve directing the work of others?

Client work

How much of your working hours do you spend working in direct client work with older people?

■ All or nearly all of my working hours
 ■ Approx. $\frac{3}{4}$
■ Approx. half
 ■ Approx. $\frac{1}{4}$ or less
 ■ None

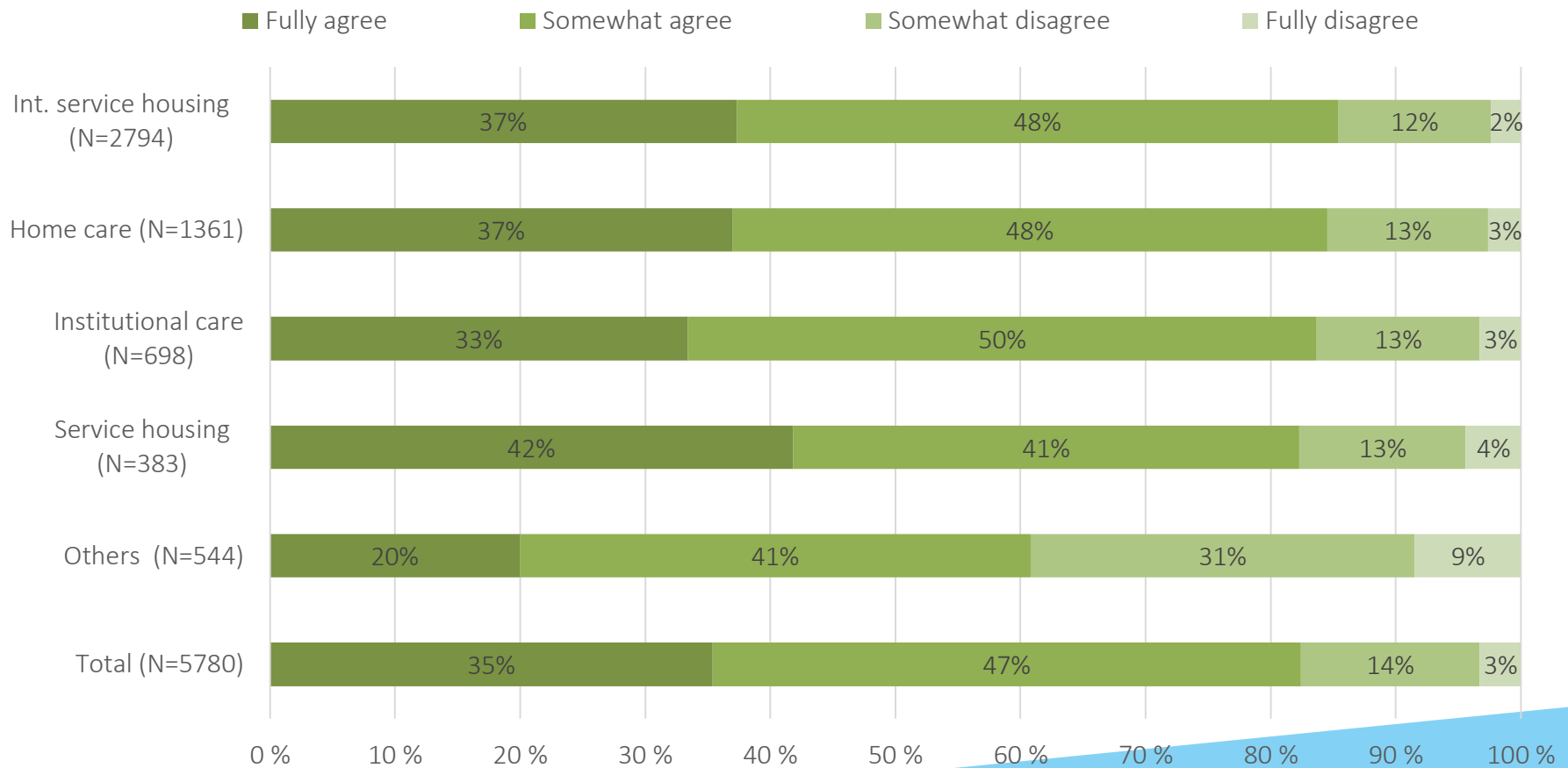


Observations

- A bit over a tenth (13%) of the respondents are employed by fixed-term contracts and the shares are approximately the same by operational unit. A small share (3%) of the respondents are employed by temp agencies.
- A majority of the respondents work two-shift and three-shift work. Three-shift work is especially common in intensive service housing (56%) and institutional care (61%). Two-shift work is common in home care (68%).
- Over half of the respondents have period-based working hours defined in their employment contract. The Others category of working hours includes e.g. total working hours, zero hour / general agreement definitions and those called in to work as needed. The share of these in the materials is low.
- Less than a tenth (8%) of the respondents state that they are in a supervisor role.
- Seventy three per cent of respondents work at least 3/4 of working hours directly with clients in all operational unit groups: especially in intensive service housing, institutional care and ordinary service housing.
 - With home care, respondents stated more often than with other groups that approximately 3/4 or half of working hours are spent working directly with clients.
 - The Others category contains operational unit or job title groups that engage less in direct work with clients.

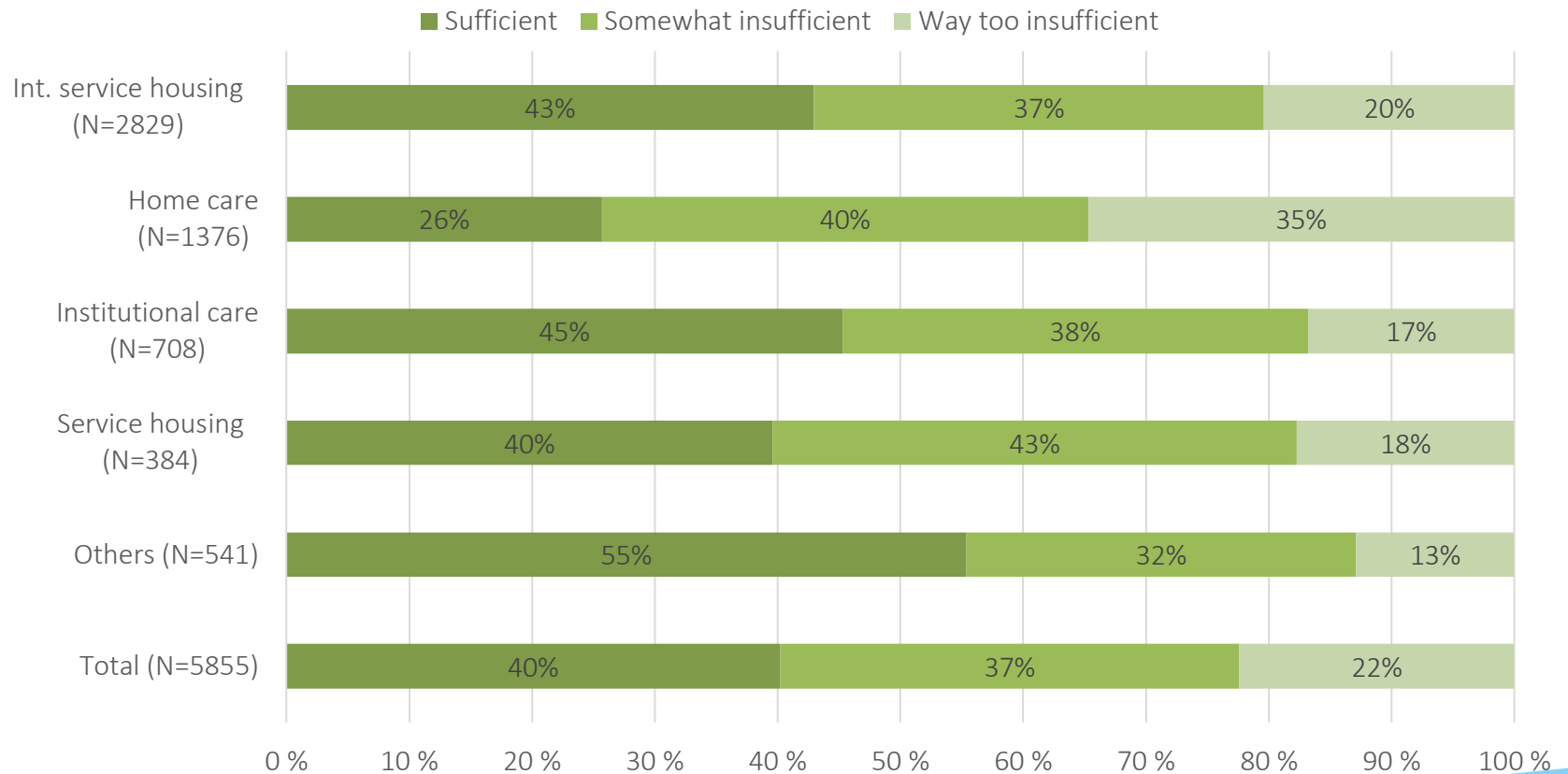
Sense of urgency

I do not have sufficient time to carry out my work as well as I would like, nor with enough attention to detail.



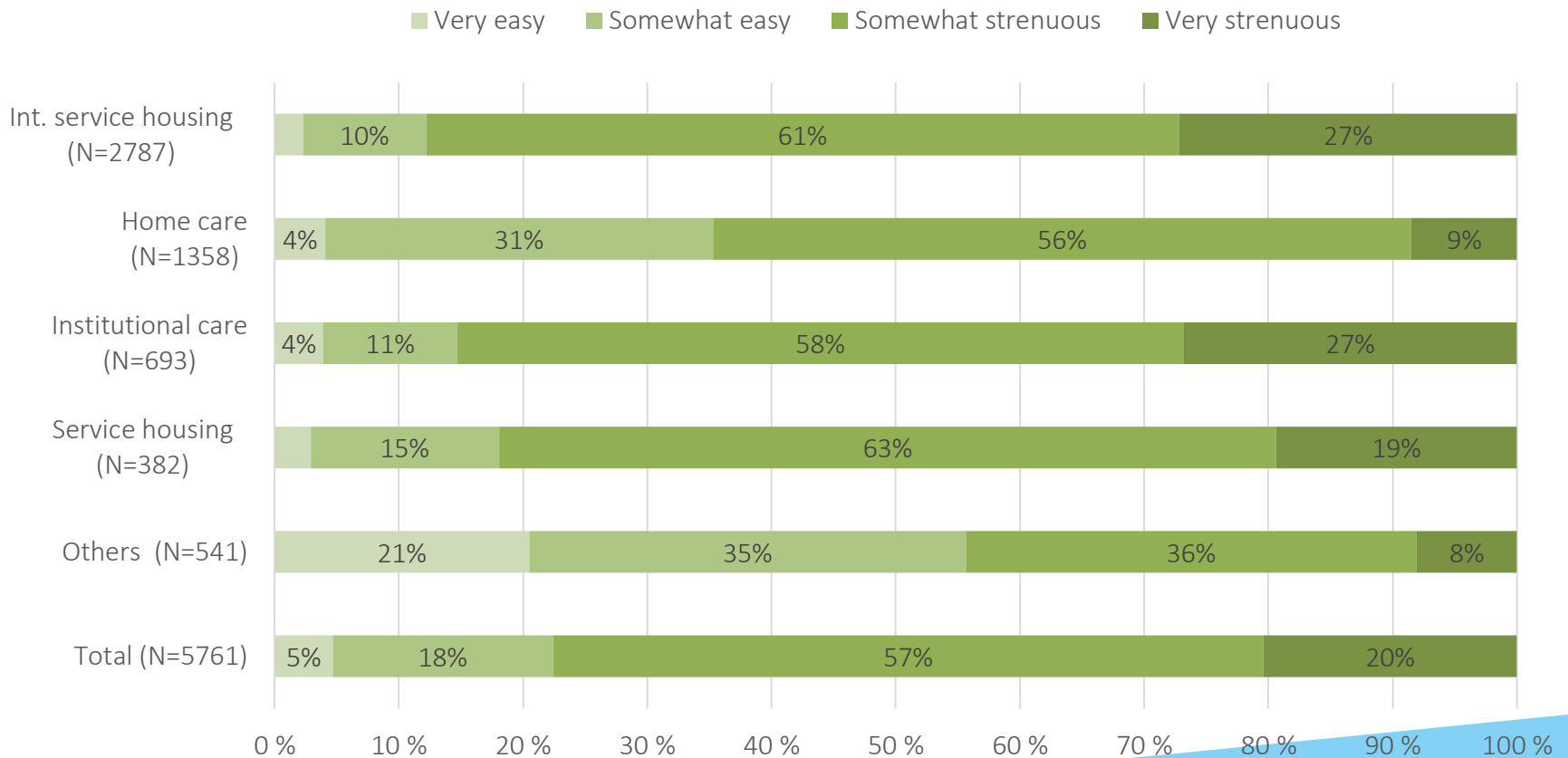
Sense of urgency

Describe your ability to take breaks in your work



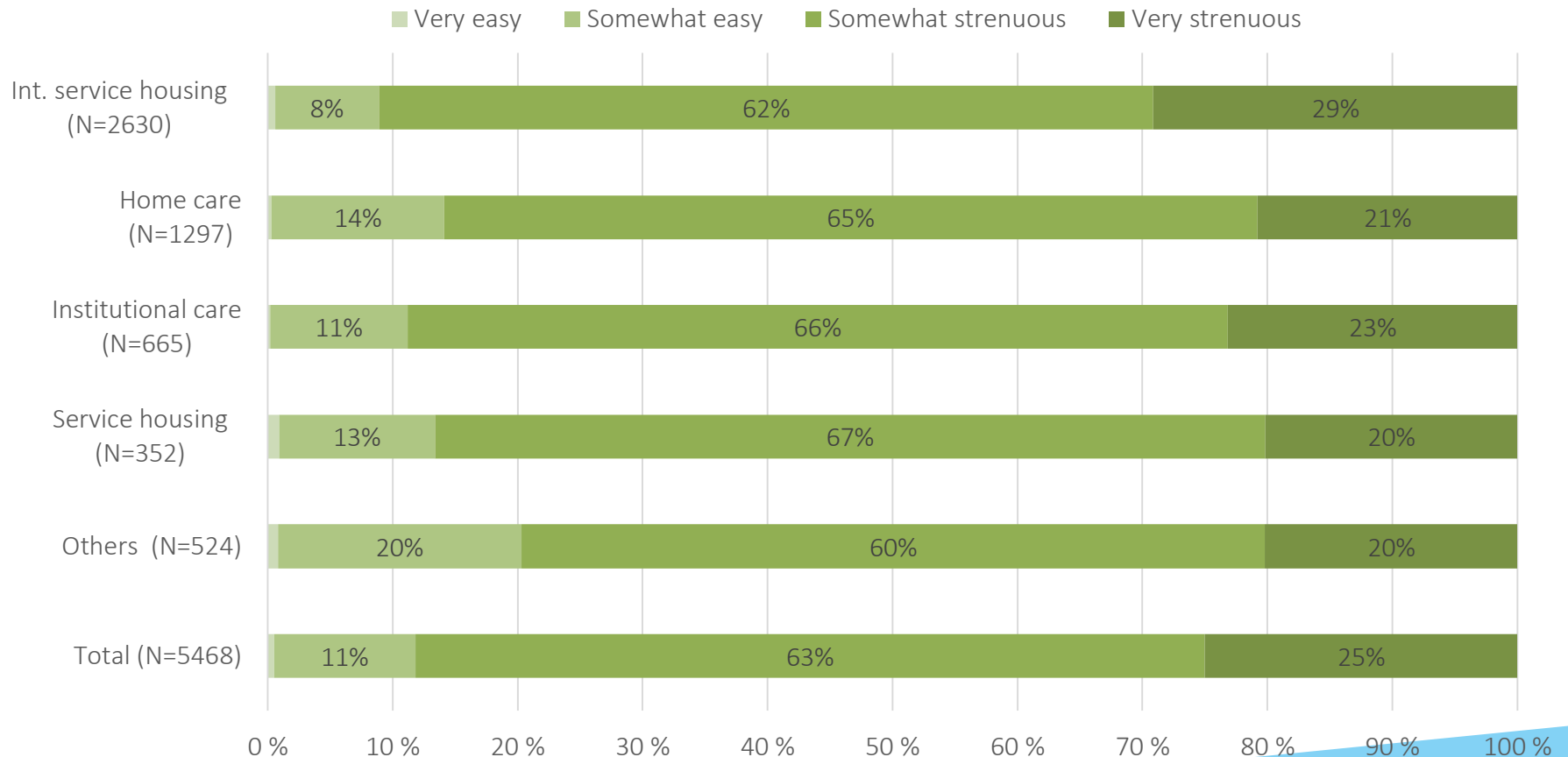
Physical strain of work

How easy or strenuous do you feel your current work is? Physically:



Mental strain of work

How easy or strenuous do you feel your current work is?
Mentally:



Occupational well-being and health

Do you feel that your occupational well-being / health is currently:
Scale: 1 = very poor – 10 = very good

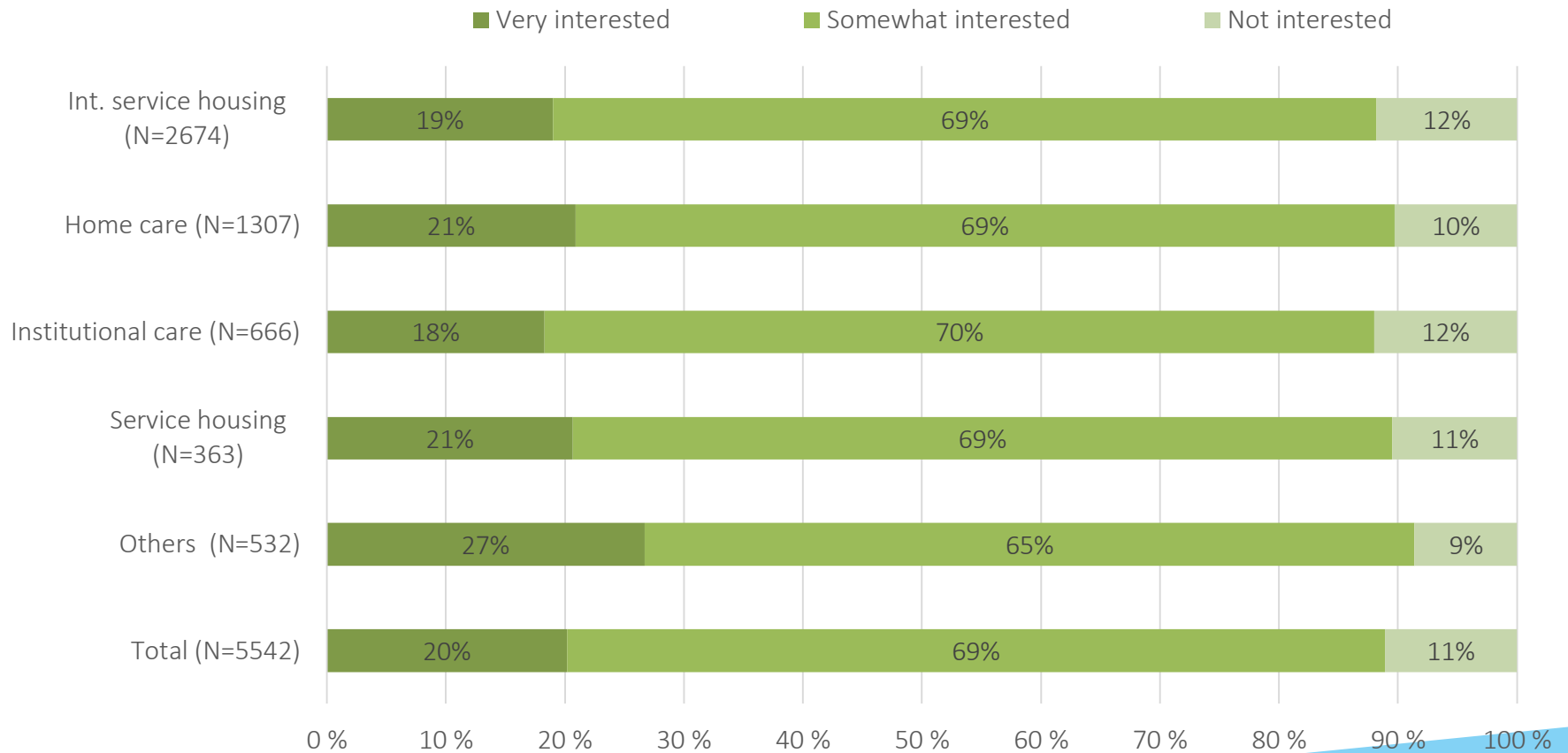
| Operational unit | <i>Occupational well-being</i> | | <i>State of health</i> | |
|-------------------------|--------------------------------|--------------|------------------------|--------------|
| | <i>mean</i> | <i>N</i> | <i>mean</i> | <i>N</i> |
| Int. service housing | 5.7 | 2,651 | 6.0 | 2,633 |
| Home care | 5.7 | 1,317 | 6.1 | 1,312 |
| Institutional care | 5.9 | 654 | 6.1 | 647 |
| Service housing | 5.8 | 358 | 6.1 | 357 |
| Others | 6.3 | 514 | 6.5 | 508 |
| Total | 5.8 | 5,494 | 6.1 | 5,457 |

Observations

- A large share of respondents at different places of business reported experiencing a sense of hurriedness meaning that they felt they could not do their job as well as they would like or are not able to take sufficient breaks (especially those working in home care).
- The operational unit groups that include more direct work with clients state that work is both physically and mentally more strenuous than with others.
- The perceived occupational well-being is an average of 5.8 (on a scale of 1=very poor...10=very good). Similarly, the perceived health is 6.1 on average.
- A significant share (45%) of respondents selected the value 5 when assessing their occupational well-being or health.

Use of technology

How interested are you in technology and its development?



Computers and phones at work

In your work, do you use a (selected from options):

| Operational unit | Desktop | Laptop | Tablet | Smartphone (with Internet) | Other mobile phone |
|-----------------------------------|--------------|--------------|-------------|----------------------------|--------------------|
| Int. service housing (N=2,765) | 78.8% | 39.9% | 8.9% | 52.2% | 38.0% |
| Home care (N=1,353) | 83.9% | 19.7% | 8.0% | 94.6% | 10.2% |
| Institutional care (N=691) | 93.8% | 41.5% | 12.9% | 38.8% | 46.7% |
| Service housing (N=377) | 81.7% | 33.2% | 10.6% | 52.0% | 39.5% |
| Others (N=533) | 79.5% | 49.0% | 14.6% | 68.3% | 31.1% |
| Total (N=5,719) | 82.1% | 35.7% | 9.8% | 62.1% | 31.9% |

*4.5% of respondents use a land-line phone in their work, highest rate in institutional care (12.6%).

Use of digital applications and technologies in work

Do you use the following digital applications or tools in your work (selected from options):

| Operational unit | <i>Email</i> | <i>Time & attendance system</i> | <i>Electronic patient/health recording system</i> | <i>Enterprise Resource Planning</i> | <i>Remote connections (e.g. Skype)</i> | <i>Instant messaging (e.g. WhatsApp)</i> |
|--------------------------------|--------------|-------------------------------------|---|-------------------------------------|--|--|
| Int. service housing (N=2,755) | 85.8% | 34.5% | 84.4% | 22.2% | 13.6% | 18.2% |
| Home care (N=1,349) | 94.4% | 36.2% | 93.8% | 50.4% | 25.0% | 23.9% |
| Institutional care (N=691) | 93.3% | 38.4% | 94.9% | 6.8% | 16.4% | 12.6% |
| Service housing (N=375) | 82.9% | 28.8% | 78.7% | 19.7% | 14.9% | 13.9% |
| Others (N=528) | 97.3% | 35.6% | 86.9% | 9.8% | 43.4% | 26.5% |
| Total (N=5,698) | 89.6% | 35.1% | 87.8% | 25.7% | 19.5% | 19.4% |

Use of digital applications and technologies in work

In your work, do you use the following technology solutions (selected from options):

| Operational unit | <i>Emergency phone system</i> | <i>Equipment allowing remote care</i> | <i>Health or emergency wristband</i> | <i>Motion sensors</i> | <i>Nurse alert system</i> | <i>Access control system for patients</i> |
|-----------------------------------|-------------------------------|---------------------------------------|--------------------------------------|-----------------------|---------------------------|---|
| Int. service housing (N=2,643) | 38.9% | 0.4% | 60.3% | 26.5% | 37.4% | 22.8% |
| Home care (N=1,249) | 86.3% | 15.1% | 66.5% | 18.7% | 7.1% | 26.1% |
| Institutional care (N=618) | 21.0% | 1.1% | 32.8% | 16.0% | 52.1% | 21.0% |
| Service housing (N=359) | 52.1% | 0.6% | 62.4% | 27.0% | 45.4% | 20.6% |
| Others (N=356) | 34.6% | 5.3% | 37.1% | 15.7% | 24.7% | 18.8% |
| Total (N=5,225) | 48.7% | 4.3% | 57.1% | 22.7% | 31.6% | 23.0% |

Use of digital applications and technologies in work

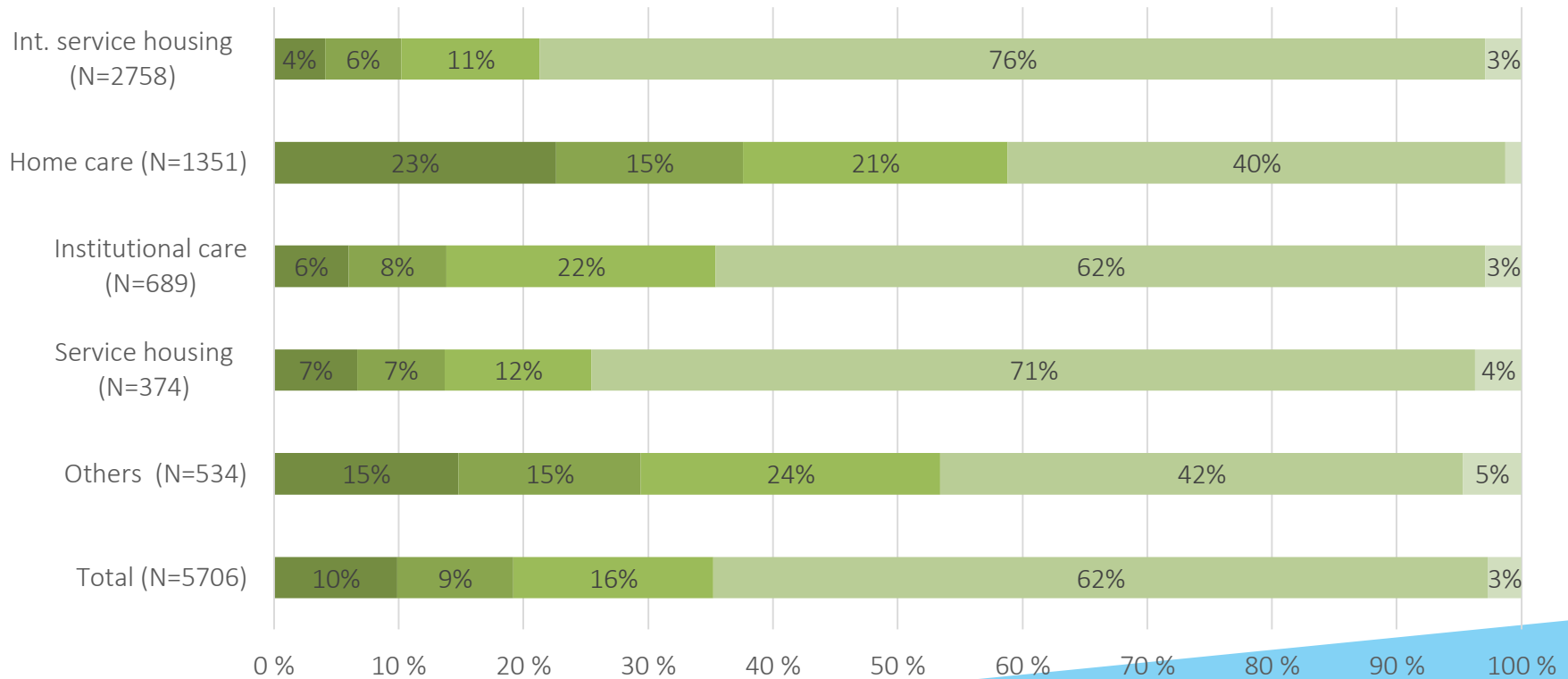
In your work, do you use the following technology solutions (selected from options):

| Operational unit | <i>Medicine dispenser with reminders</i> | <i>Automated meal unit</i> | <i>Electric patient lift</i> | <i>Rehabilitation technology</i> | <i>Social robot (e.g. Paro)</i> | <i>Entertainment devices (e.g. karaoke/video games)</i> |
|--------------------------------|--|----------------------------|------------------------------|----------------------------------|---------------------------------|---|
| Int. service housing (N=2,643) | 0.7% | 0.2% | 70.9% | 5.1% | 0.9% | 14.0% |
| Home care (N=1,249) | 22.1% | 17.5% | 44.4% | 5.5% | 0.5% | 1.5% |
| Institutional care (N=618) | 1.3% | 0.8% | 71.5% | 13.6% | 0.8% | 7.1% |
| Service housing (N=359) | 1.9% | 0.6% | 58.2% | 4.7% | 0.8% | 13.1% |
| Others (N=356) | 6.2% | 2.8% | 42.7% | 14.3% | 2.0% | 18.0% |
| Total (N=5,225) | 6.4% | 4.6% | 61.9% | 6.8% | 0.9% | 10.4% |

Use of technology

What share your working hours are you using digital applications or IT technology devices

■ All or nearly all of my working hours
 ■ Approx. $\frac{3}{4}$
■ Approx. half
 ■ Approx. $\frac{1}{4}$ or less
 ■ None



Observations

- Interest in technology is rather high among respondents. A fifth (20%) are overall very interested in technology.
- Different types of digital systems and technology tools are widely in use at different operational units. Ordinary email is a very common tool for a majority of the respondents. Systems for controlling working hours, electronic patient/health records, electronic resource planning and other similar systems are in use in varying degrees.
 - Electronic patient/health record systems are used the most, over 80% of respondents.
 - Enterprise resource planning systems are most commonly used in home care.
- For computers and phones, desktops are in general use (82%). Thirty six per cent of respondents use a laptop. A smartphone is used by 62% of respondents.
 - A majority (96%) of those working with home care state that they use their smartphone for work. The difference is significant when compared to other operational units. In contrast, laptops and other mobile phones are used less frequently in home care than in other operational units.

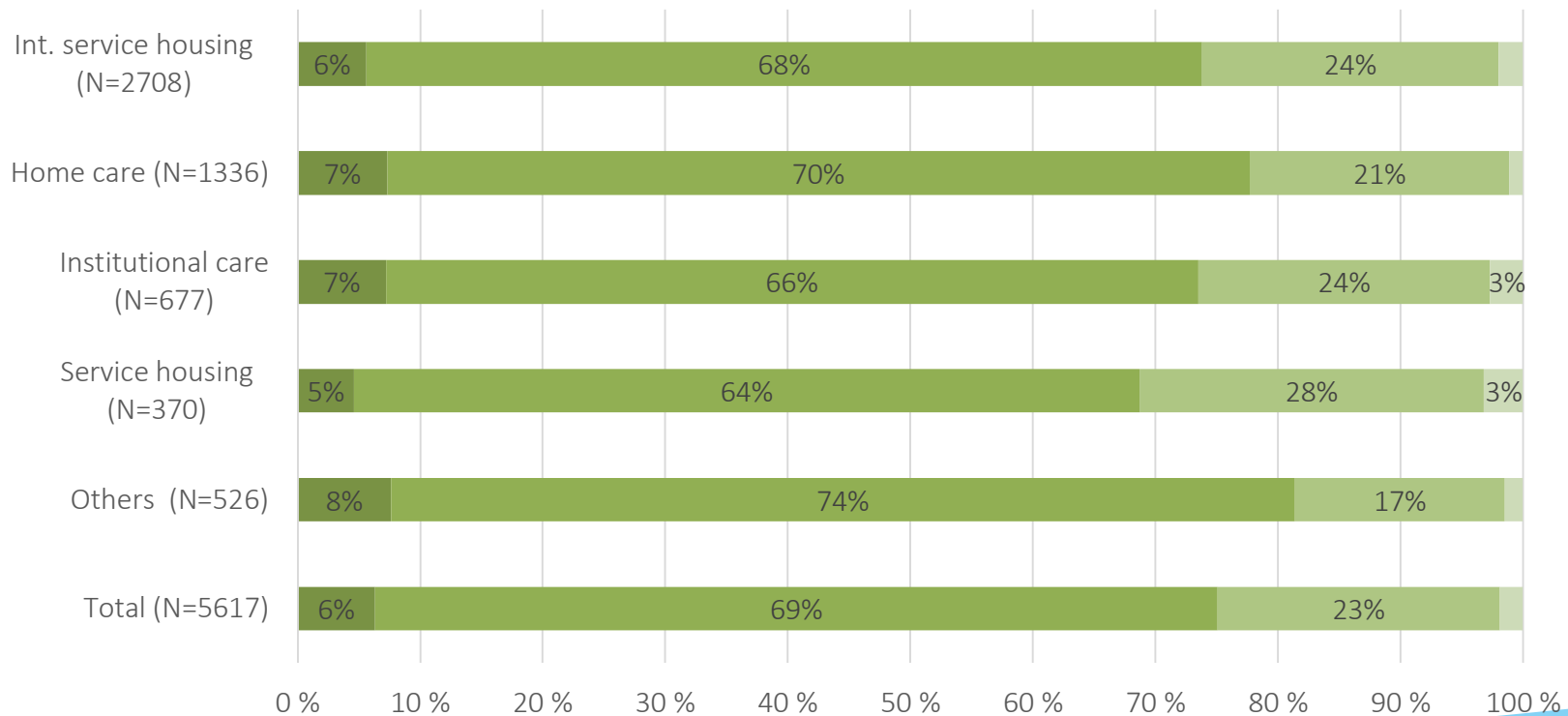
Observations

- A wide variety of traditional devices related to patient/client safety and monitoring (e.g. emergency phone or wristband) are in use.
- Approximately a fifth (19%) of respondents use instant messaging and remote connection technology in their work. Remote care technology is used in home care by 15% of respondents.
- A majority (62%) of respondents working in home care estimate that they use technology approximately a fourth of their working hours. Approximately a fourth (23%) of home care respondents state that they use technology the entire or almost the entire time they are working.
- In general, it seems that home care differs from other operational units in terms of the used technology. The use of technology appears to be more versatile than in other operational units.

Perceived personal digital expertise

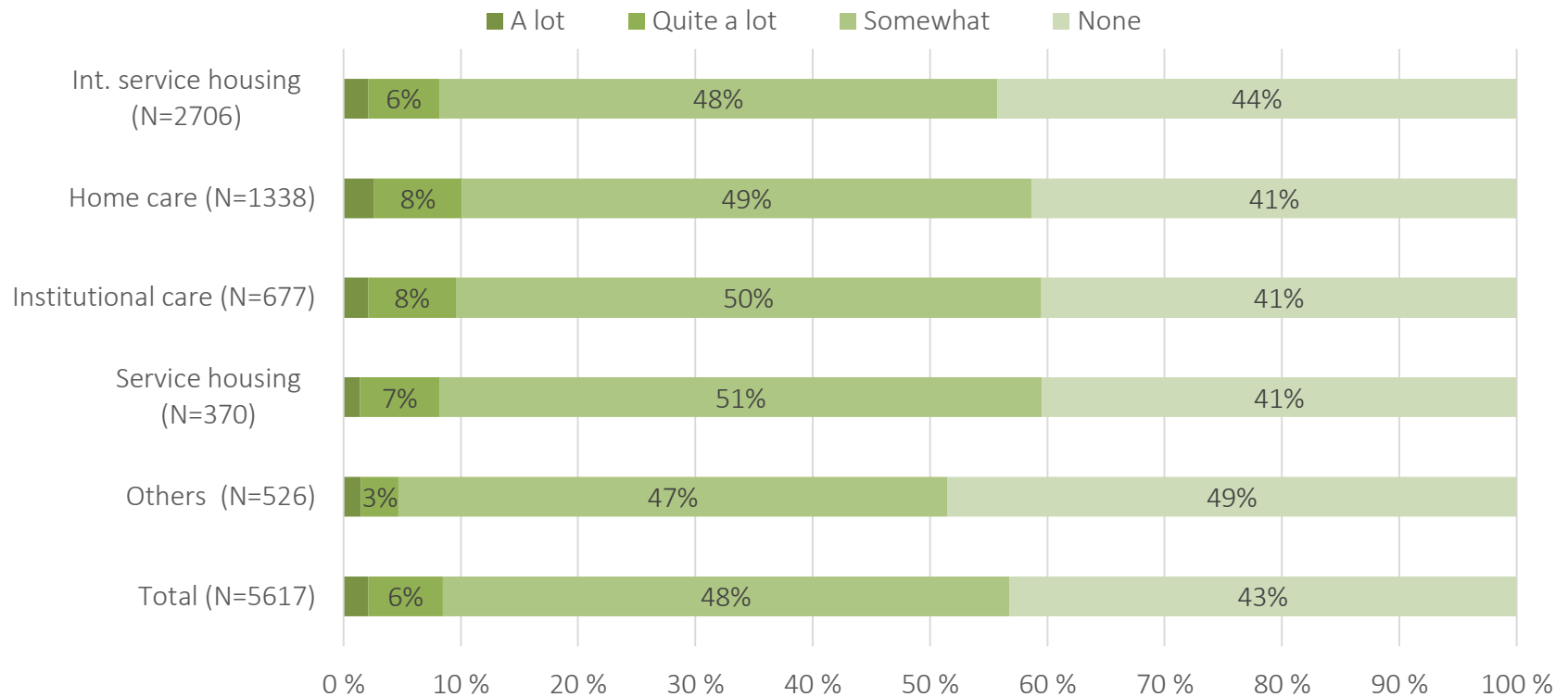
Which of the following descriptions you feel best describes your level of digital expertise in your work?

■ Digital expert
 ■ Basic
 ■ Coping
 ■ Drop-out



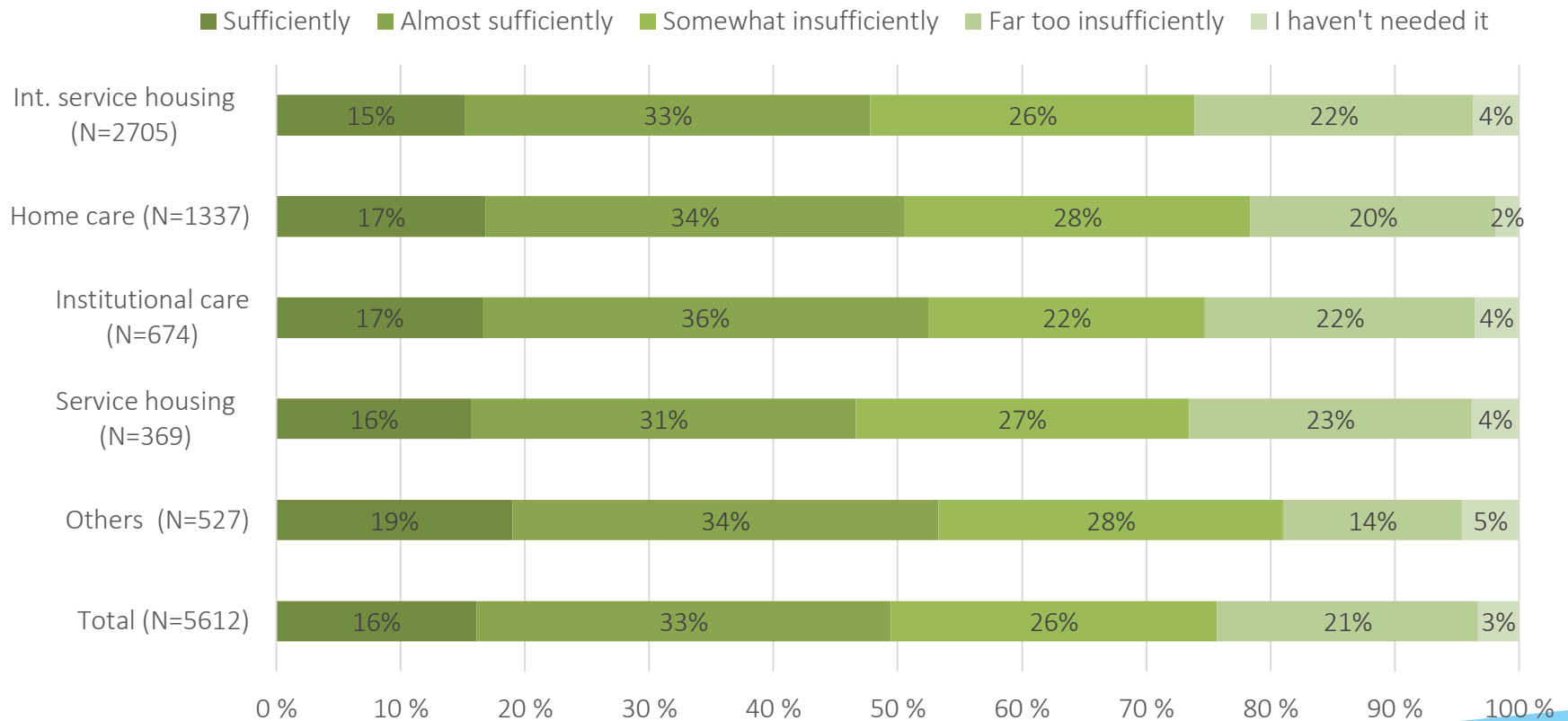
Perceived personal digital expertise

Does the insufficiency of your IT or digital expertise slow the performance of your duties (at work)?



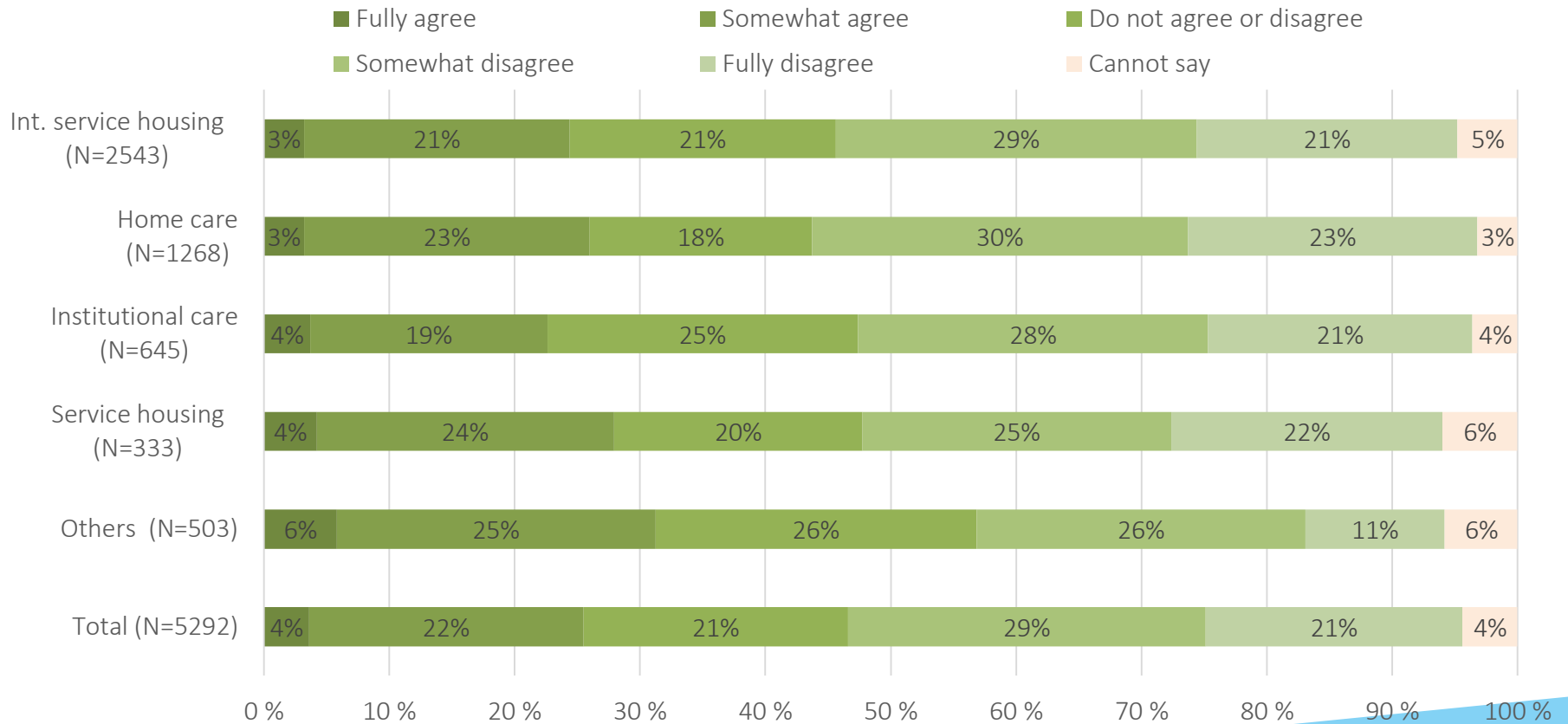
Support in the use of technology

Do you receive support in the use of IT, information systems, devices and applications pertaining to your work?



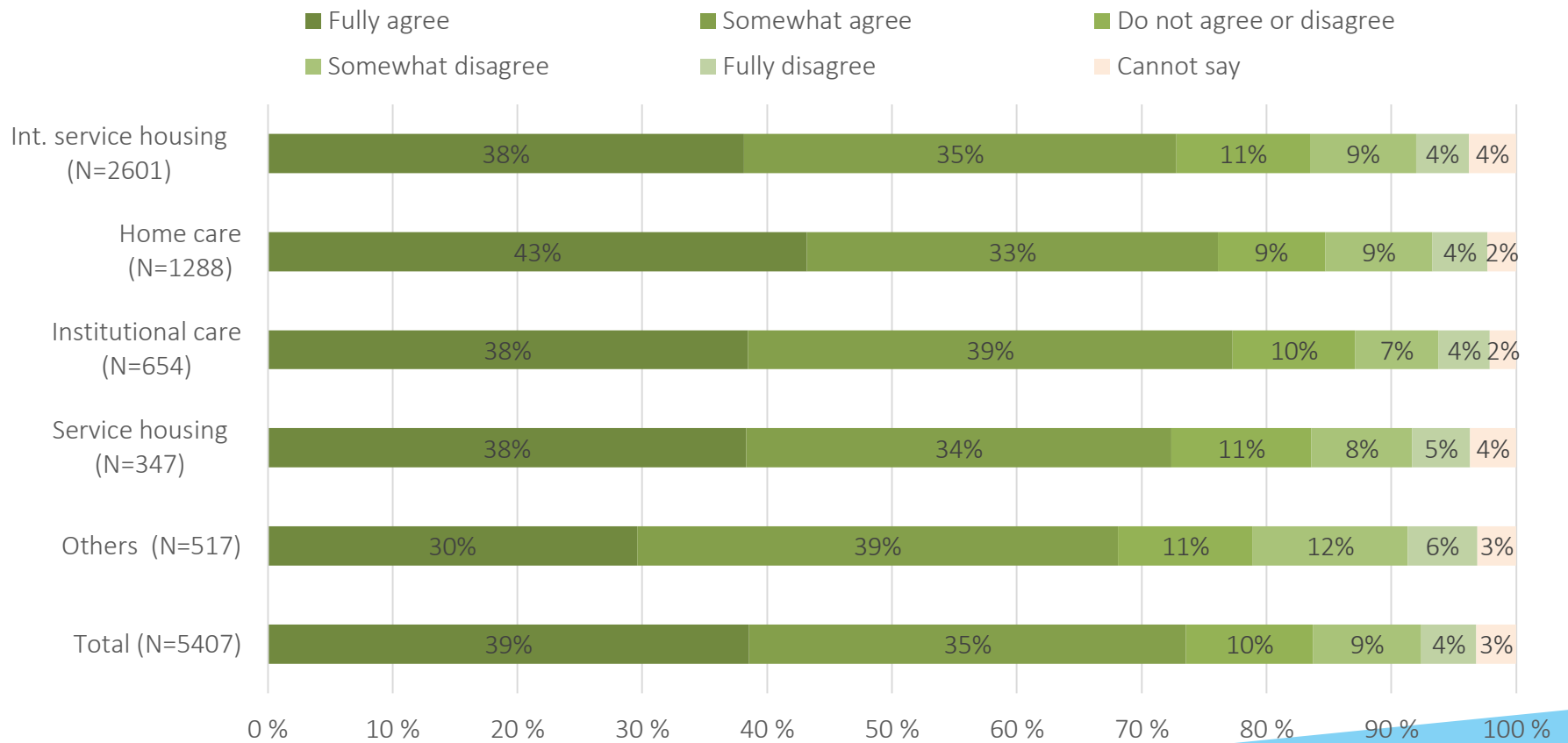
Technology's impact on work

Technologization of eldercare:
the ability to work has improved



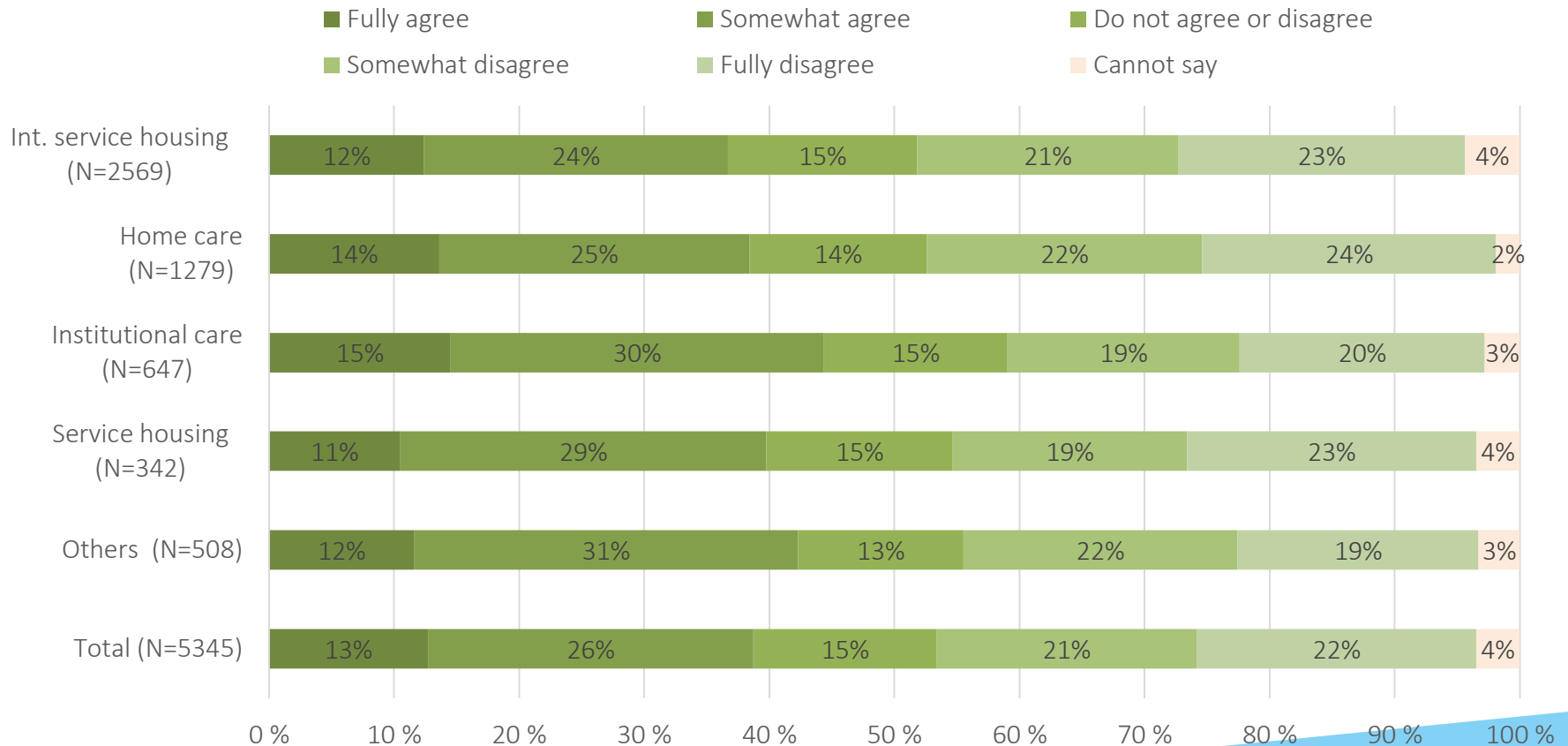
Technology's impact on work

Technologization of eldercare:
amount of work has increased



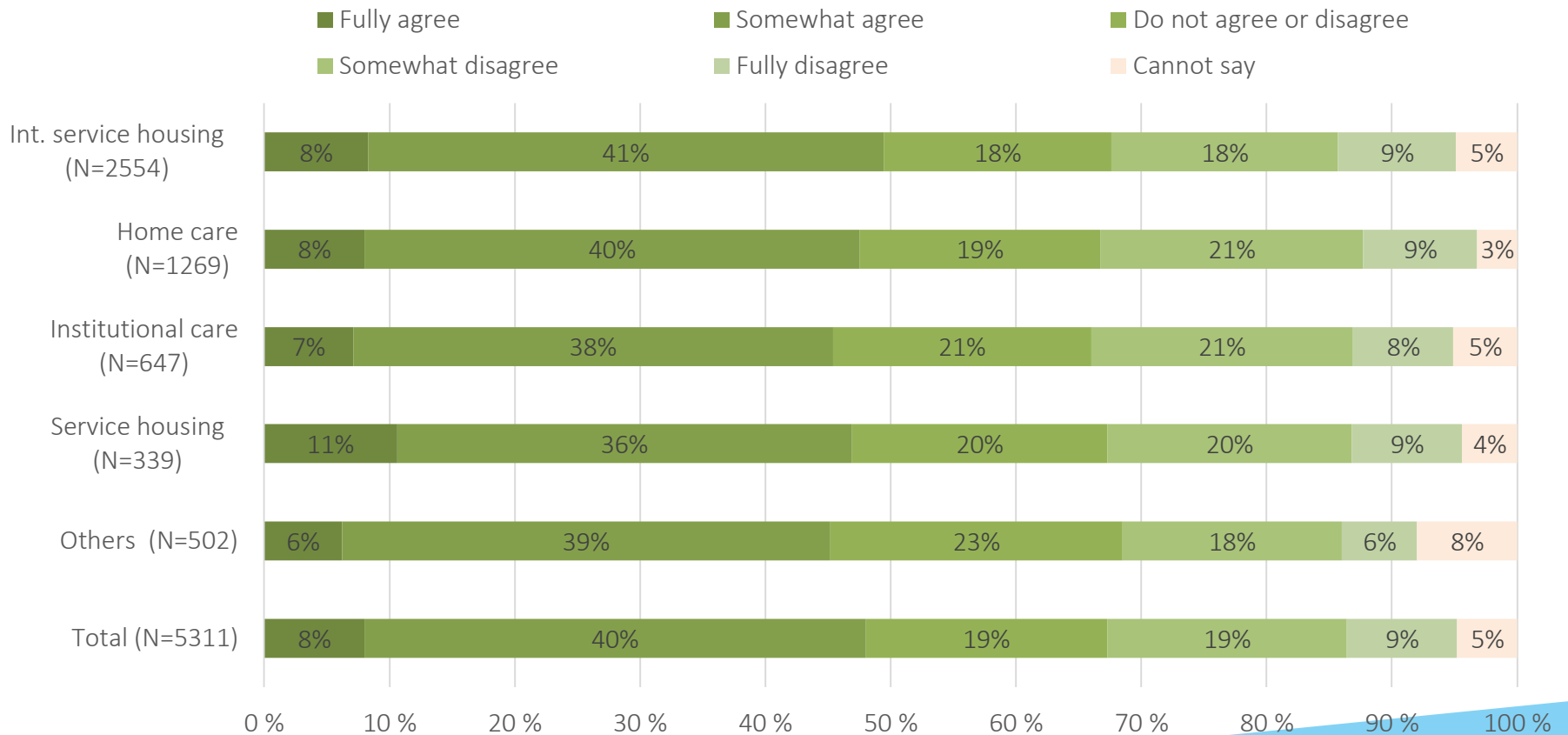
Technology's impact on work

Technologization of eldercare:
face-to-face contact with clients has reduced



Technology's impact on work

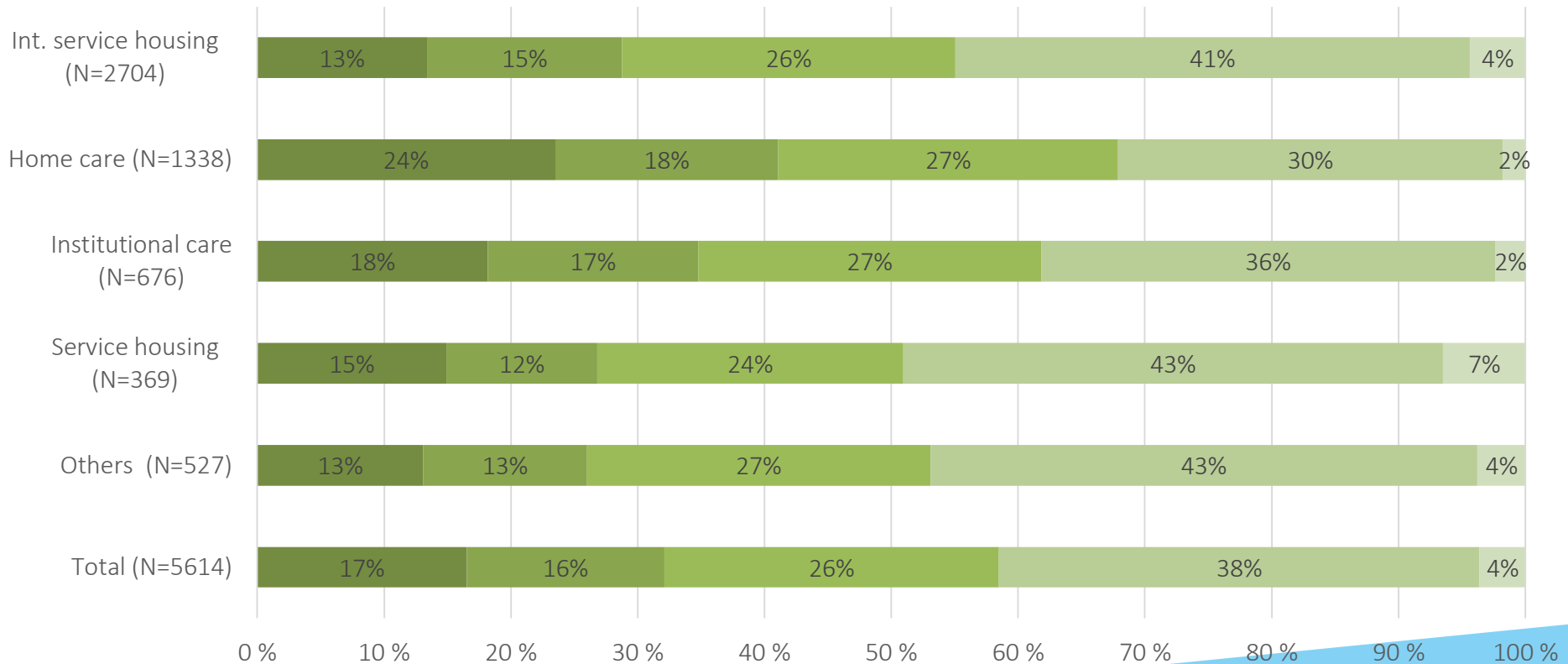
Technologization of eldercare:
work is safer for the clients



Technology service disruptions

Do you have to wait to start working or experience work disruptions due to service disruptions or slow systems or applications?

■ Several times a day
 ■ Approx. once a day
 ■ At least once a week
 ■ Rarely
 ■ Never



Observations

- A majority (69%) of respondents perceive their digital expertise at the basic level. Approximately a fourth (23%) perceive that they are coping with it. Approximately half (48%) perceived that their insufficient digital expertise slows them in their work to some degree and 43% do not perceive it to slow their work at all.
- The responses to the sufficiency of digital support were nearly equal between those who responded 'sufficiently' and those who responded 'not sufficient'. Slightly less than half (47%) perceived that they do not receive sufficient digital support.
- When asking for views on the technologisation of eldercare services:
 - Approximately half of the respondents disagree with the statement that technology improves their ability to do their job well. Approximately a fourth felt that their ability to do their job well had somewhat improved.
 - 73% of respondents felt that their workload had increased.
 - in reference to the reduction of face-to-face time with clients, views were divided more evenly between those who agreed and those who disagreed.
 - a majority of respondents feel that technology increases client safety.
- Over half (56%) report that they experience disruptions in their work or are unable to get to work quickly due to technology service disruptions at least once a week and nearly a third feel they experience it daily. With home care, disruptions are perceived to occur slightly more often than in other operational units.
- When examined by operational unit, there are no significant differences in the views on technologies.

CONCLUSIONS

- This report presented the survey data and some initial observations. Based on the reported distributions, no actual findings or strong conclusions of the survey data can be presented yet. This will require a more detailed analysis and that initial observations are further analysed by controlling the effects of other factors associated with respondents.
- However, based on the preliminary observations, it can be stated that technology is a significant part of eldercare and nursing work and that technology is evident in the work in different ways. The observed differences, similarities and their correlations with other surveyed factors will be subject to further analysis.
- The publications associated with this survey data will be published on the University of Jyväskylä website (<https://jyx.jyu.fi/>) and on the [Centre of Excellence in Research on Ageing and Care](#) website.

Contact information

Further information on the research survey:

Joonas Karhinen

joonas.p.karhinen@jyu.fi

Doctoral student

Member of research team

Sakari Taipale

sakari.taipale@jyu.fi

Associate Professor

Head of research team