

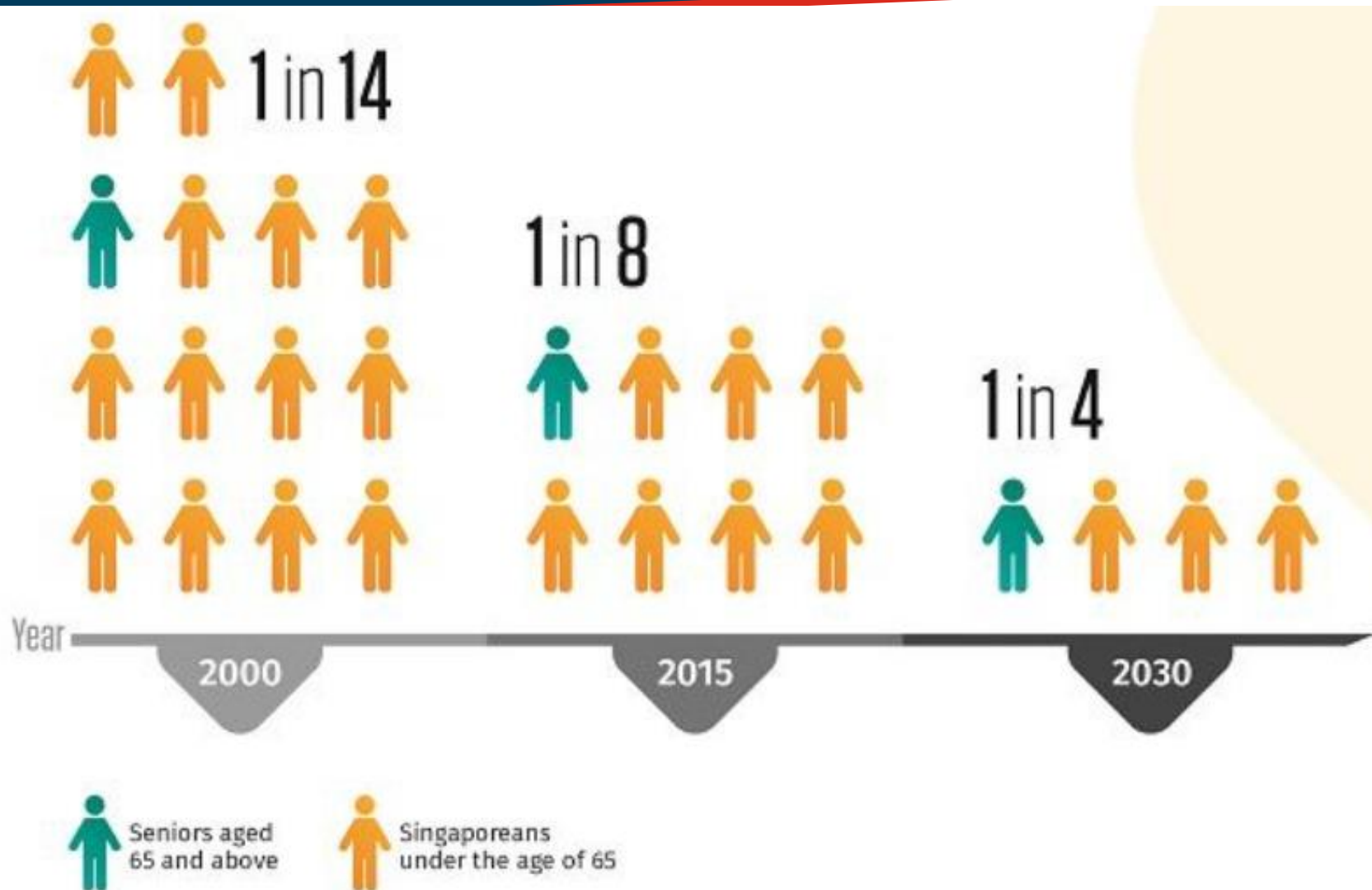
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Lifelong Learning and the Subjective Wellbeing of Older Adults in Singapore

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Singapore's population ageing rapidly



Source: <https://www.csc.gov.sg/articles/successful-ageing-progressive-governance-and-collaborative-communities>

Mental wellbeing of elderly in Singapore

Dementia and depression

A study conducted by Institute of Mental Health in 2013 found that one in 10 adults aged 60 and above had dementia, while one in 27 had depression in Singapore (Shafeeq, 2022)

Elderly Suicide

Elderly suicide cases (aged 60 and above) reported in 2020 reached the highest count since 30 years ago (Samaritans of Singapore, 2020)

Lifelong learning highlighted in APSA

- In 2015, the Singapore government launched the \$3 billion Action Plan for Successful Ageing (APSA)
 - More than 70 initiatives across 12 areas such as employability, senior volunteerism, and social engagement and inclusion
- One of the areas highlighted in the APSA is **lifelong learning**
 - Important for the elderly to adapt to the ever-changing world and transitions experienced during ageing (OECD, 2007)
 - Active learning is found to help the elderly keep their minds active and delay the onset of age-related health problems such as dementia, amnesia and depression in many countries (Jenkins and Mostafa, 2015).

Our study

Research questions

How lifelong learning behaviours of older adults in Singapore affects their subjective wellbeing and perceived value of life?

Research objectives

To build a system that identifies the elderly at risk of mental illness



OBJECTIVE

Literature Review

- **Mental health of elderly**

- Chronic diseases (Al-Butmeh and Al-Khataib, 2018), intergenerational support (Silverstein et al., 2006), living arrangement (Palloni, 2000; Teerawichitchainan et al., 2015), built environment (Evans et al., 2002)

- **Adult learning and wellbeing nexus among the elderly**

- Small-scale interviews: Dench and Regan (2000); Narushima (2008)
- Large-scale surveys:
 - Leung and Liu (2011): based on a sample of 1003 older adults in China, they find that lifelong learning may improve their quality of life, and what matters was not the number of courses taken, but the continuation of learning.
 - Jenkins and Mostafa (2015): based on four waves of the English Longitudinal Study of Ageing, they find informal learning was associated with higher psychological wellbeing.

- **Relevant studies in Singapore**

- Thang et al. (2012) on older adults' experiences and perception of lifelong learning

Methodology

- Construct the **Multidimensional Wellbeing Index (MWI)**, rather than using the summation of responses to the items in the wellbeing construct.

$$MWI_h^i = \frac{1}{2} \left(\sqrt{\frac{\sum_{j=1}^k d_{ijh}^2}{k_h}} + \left(1 - \sqrt{\frac{\sum_{j=1}^k (1 - d_{ijh}^2)}{k_h}} \right) \right)$$

- Employ **machine learning techniques** to study how lifelong learning is associated with mental wellbeing of the elderly.

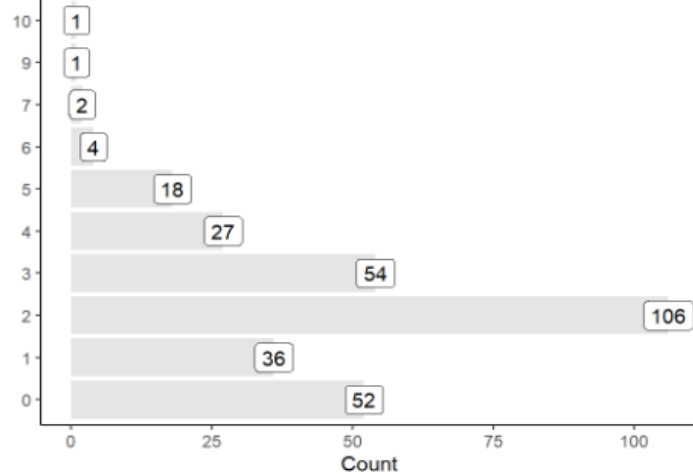
Specifically, there are two steps:

- **Multiple Correspondence Analysis:**
 - Explore the association between respondents' background, lifelong learning behaviours and subjective wellbeing
 - Construct the typology to develop an early warning system that identifies at-risk individuals
- **Decision Tree and Regression Analysis:**
 - Supervised learning for classification to identify the important factors affecting subjective wellbeing
 - Regression to estimate the significance and size of the effect

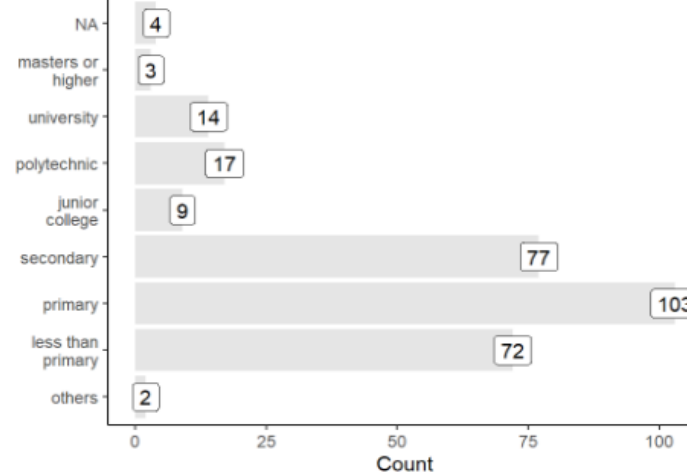
- **Primary data collection:** Surveyed 300 senior adults in Singapore using convenience sampling
- **Survey questions:**
 - **Lifelong learning:** Attitudes towards lifelong learning, lifelong learning behaviours and preference, concerns
 - **Wellbeing:**
 - **CASP 19:** Four domains (control (6), autonomy (5), pleasure (4) and self-realization (4)) to assess the quality of life of elderly people.
 - **Satisfaction with life scale:** A 5-item scale to measure global cognitive judgements of one's life satisfaction.
 - **WHO-Five Wellbeing Index:** The 5-item World Health Organization Well-Being Index (WHO-5) used to assess subjective psychological well-being.
 - **Basic:** demographic and socio-economic characteristics

Profiles of Survey Respondents

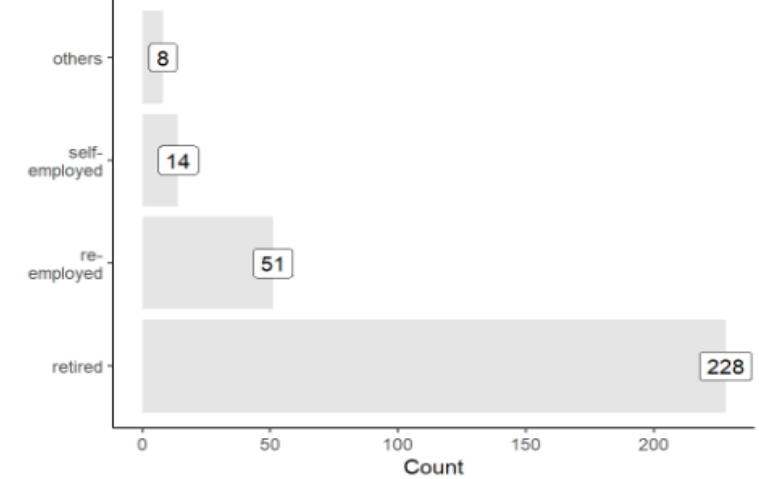
Number of Children



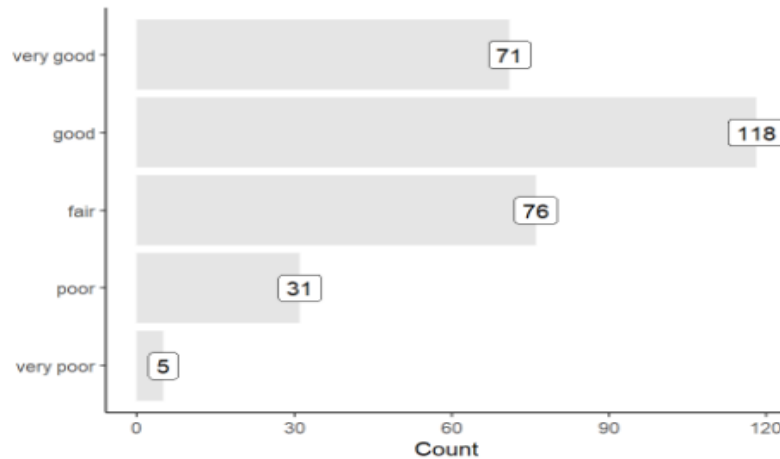
Education



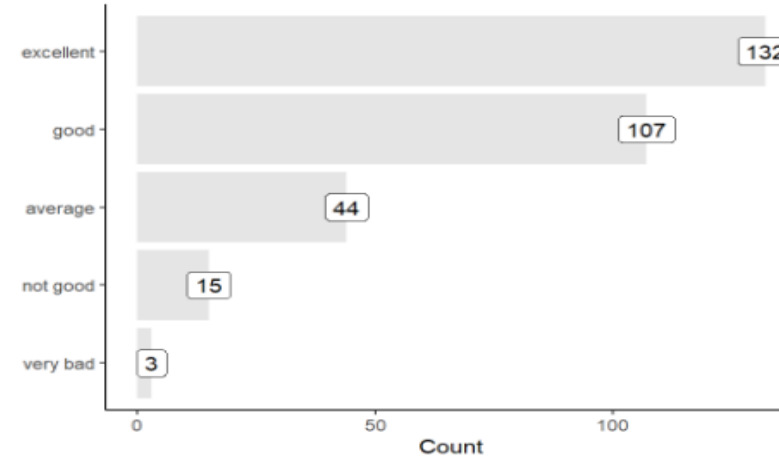
Work Status



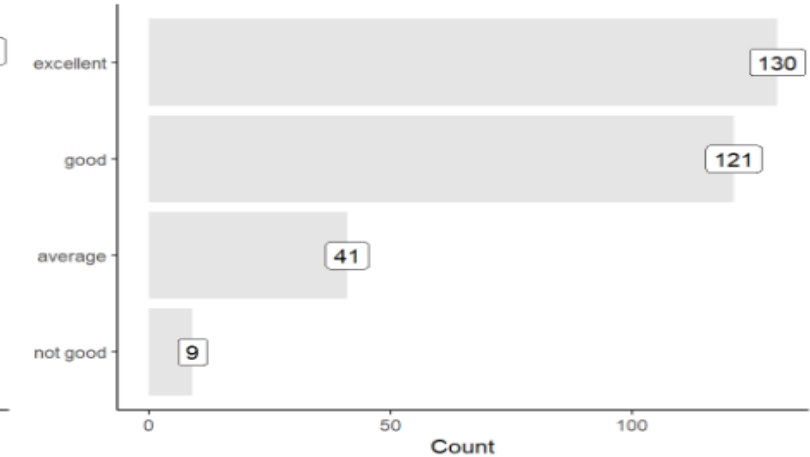
Health Status



Relationship with Family

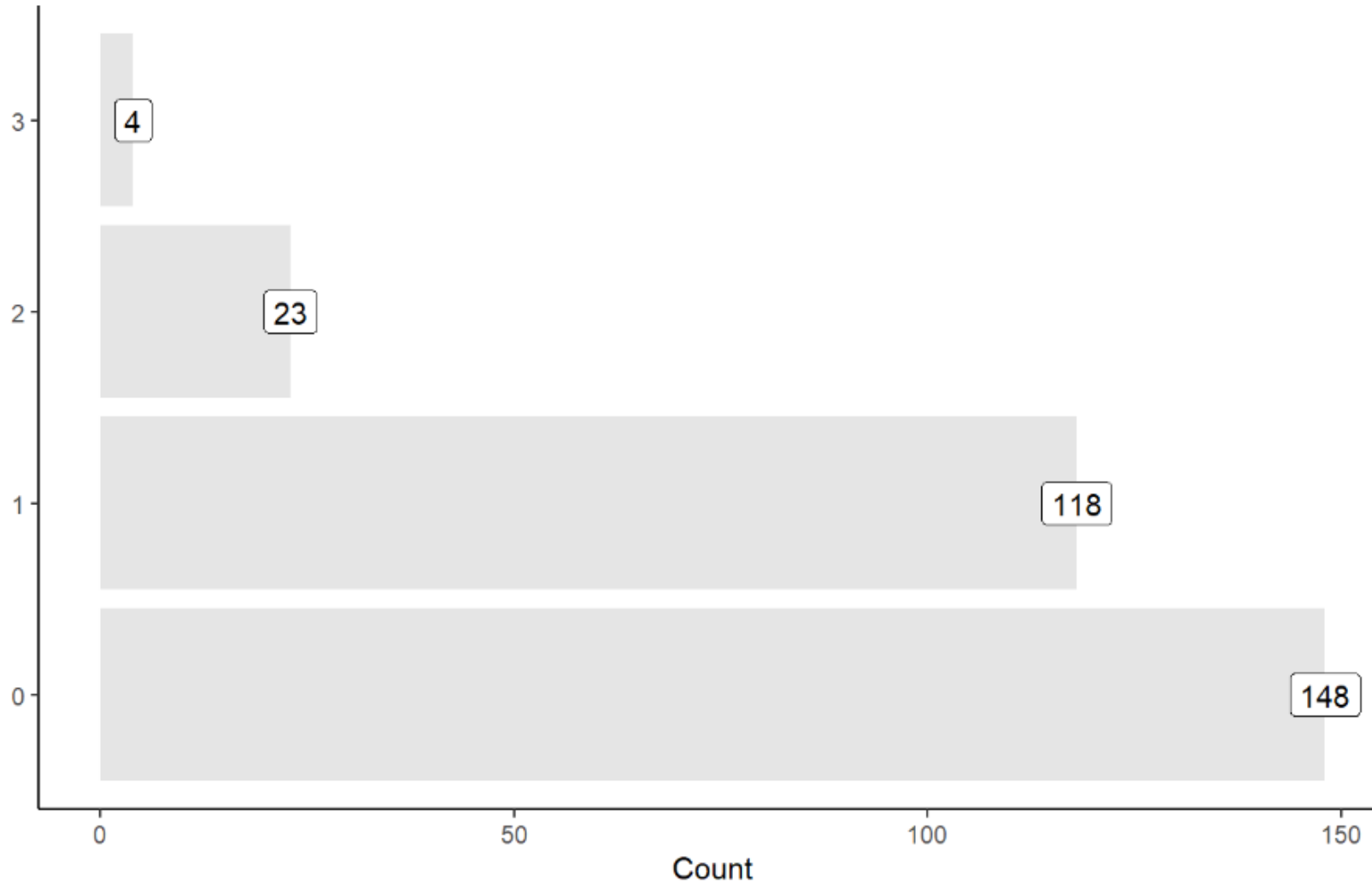


Relationship with Friends



Lifelong learning behaviours

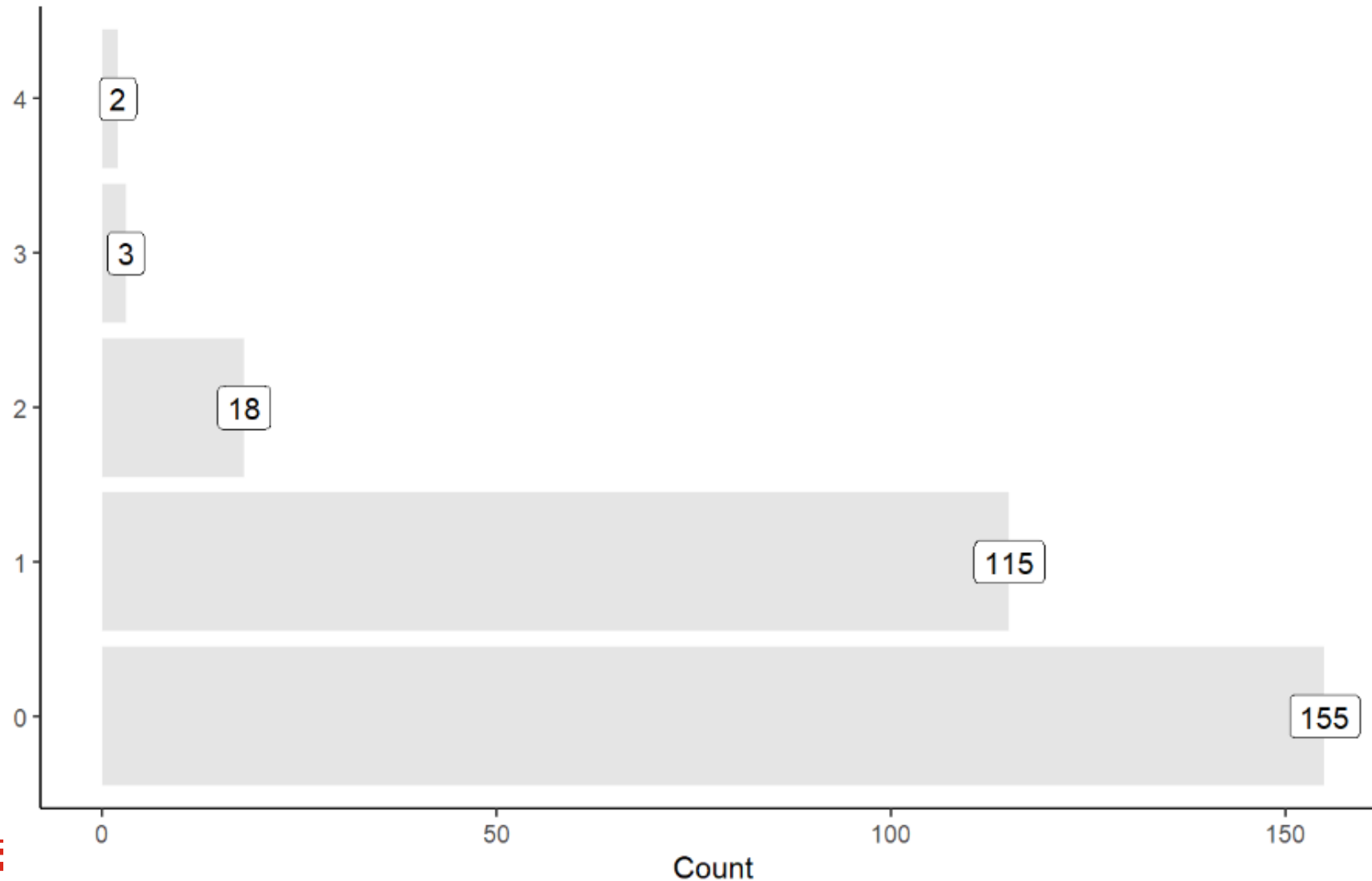
Total Number of Different Classes Participated in the Last 12 Months
The classes are singing, dancing, music group, exercise and others



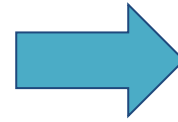
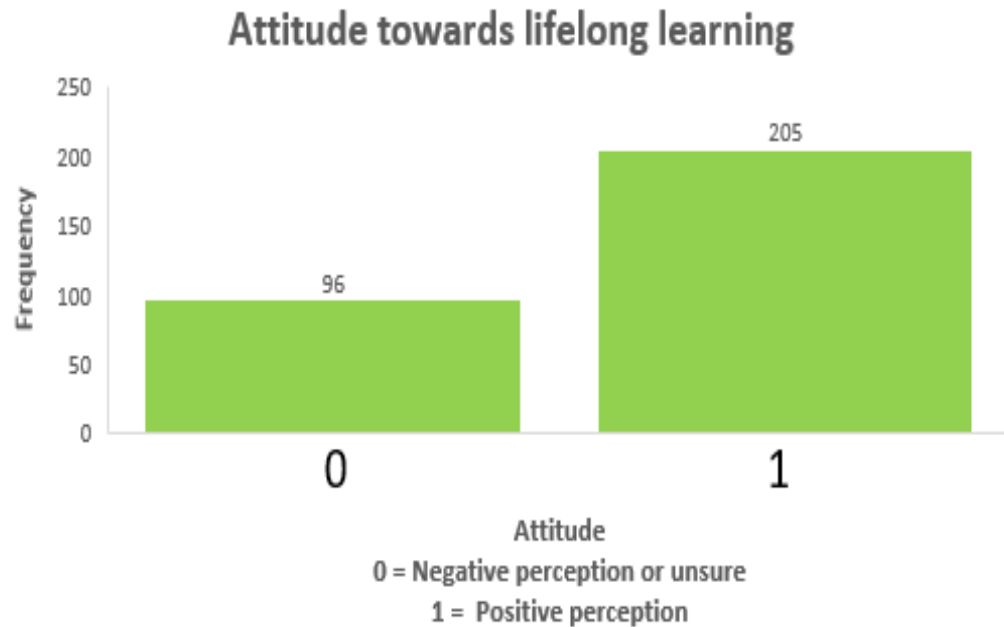
Lifelong learning behaviours

Total Number of Different Places Been to in the Last 12 Months

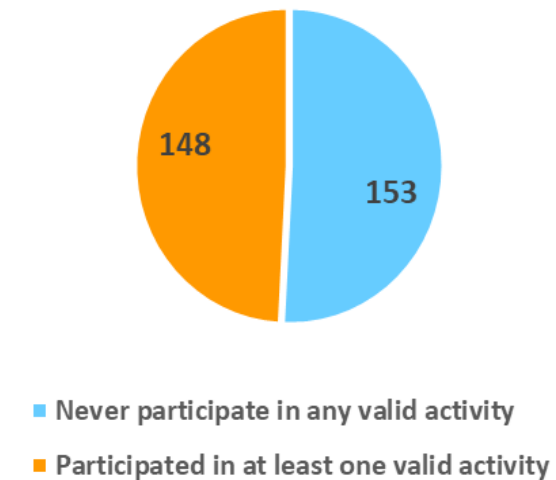
The places are gym, sports club, museum, library, learning institute, and others



Lifelong learning attitudes

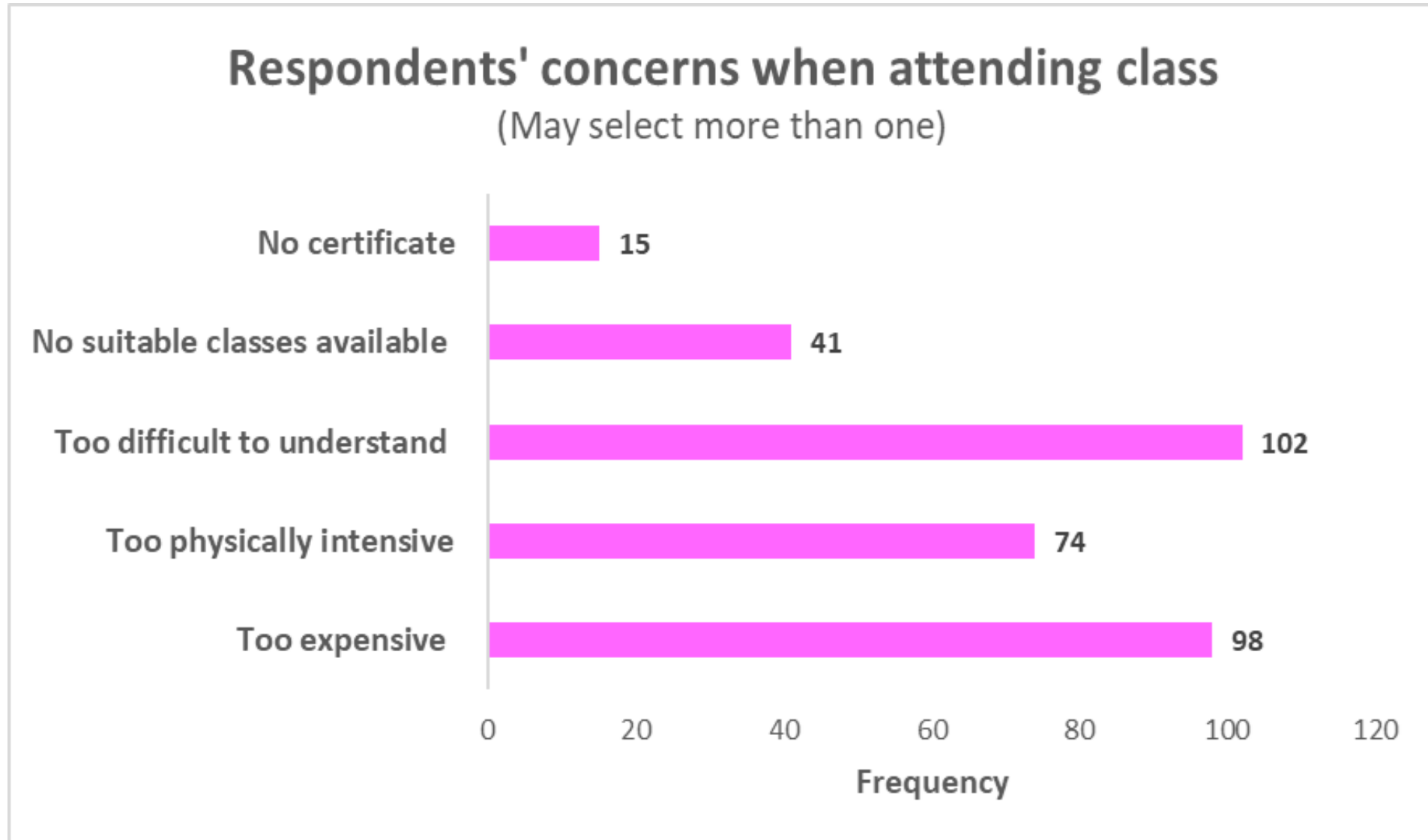


Respondents' participation in valid activities in the last 12 months

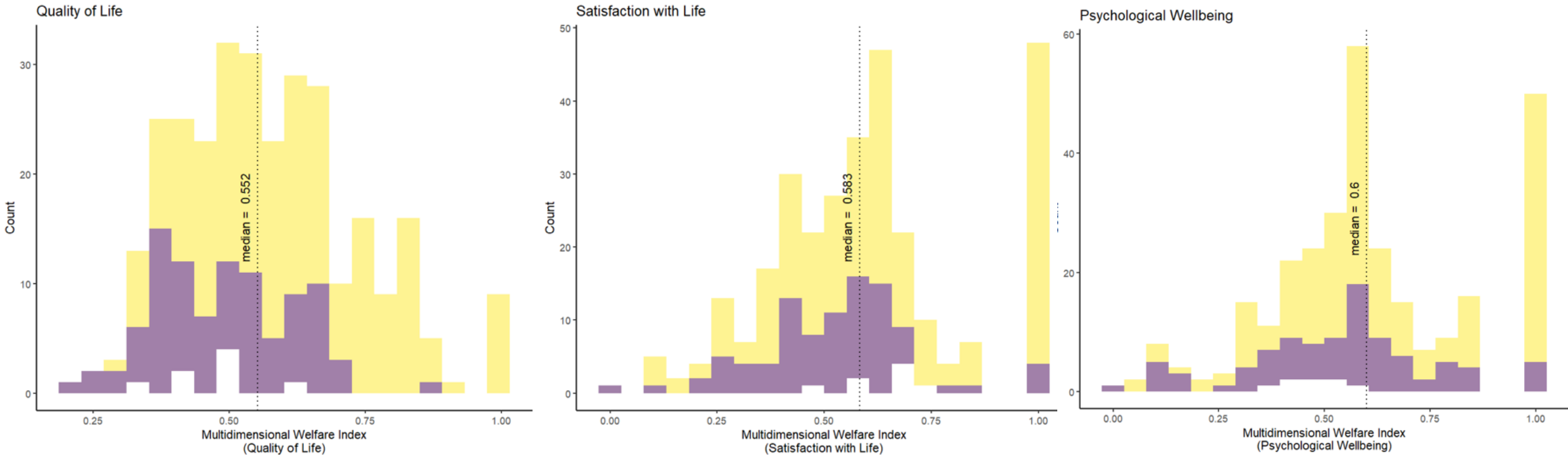


205 respondents (68.1%) perceive lifelong learning positively, however only 148 of them (49.2%) participated in at least one lifelong learning related activity in the past 12 months

Concerns towards lifelong learning



Association between MWI and Personal Attributes



Elderly people
should keep learning



yes



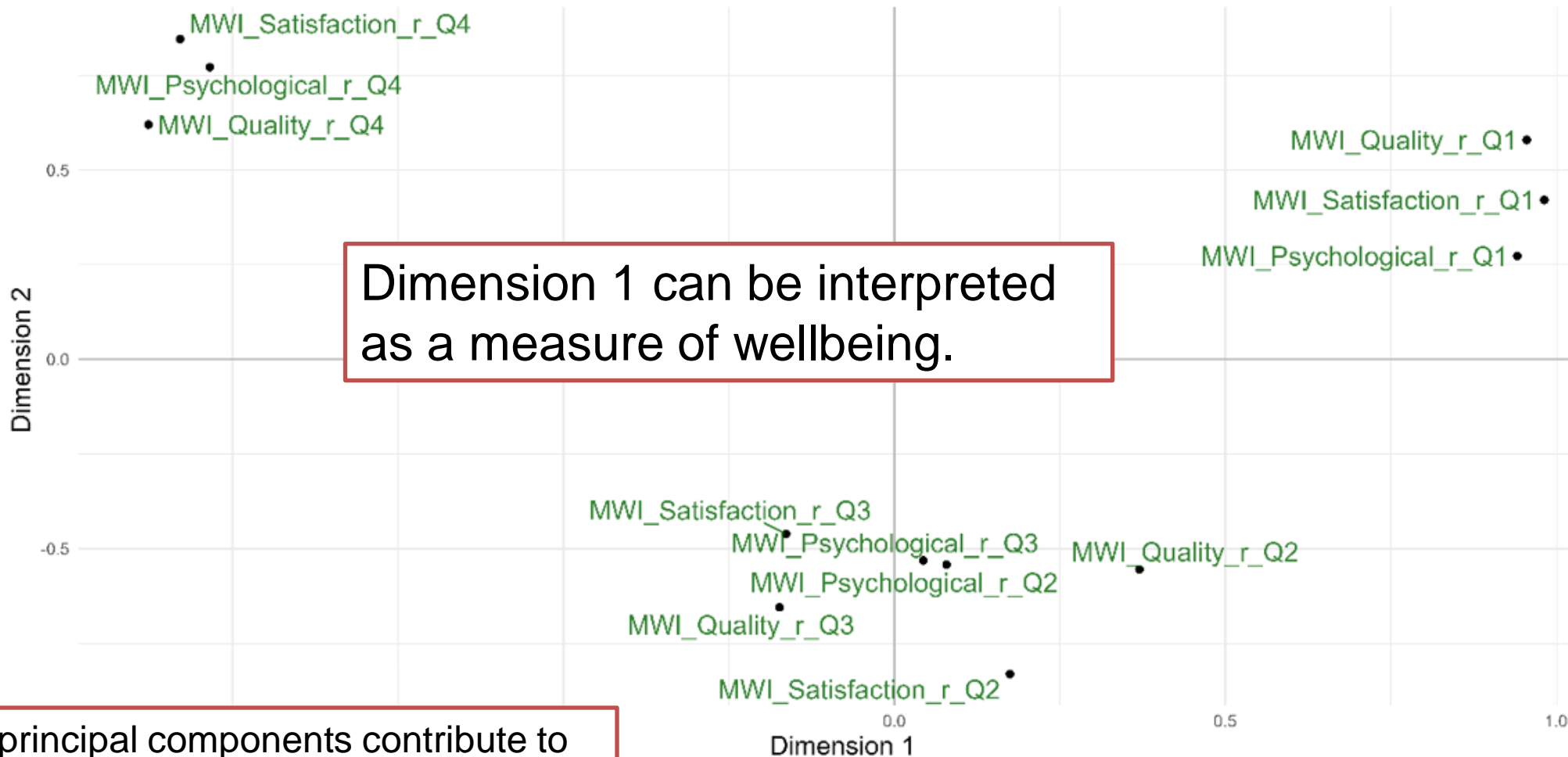
no

NA

Those who feel negative towards LLL tend to be skewed towards lower levels of wellbeing.

Results of multiple correspondence analysis

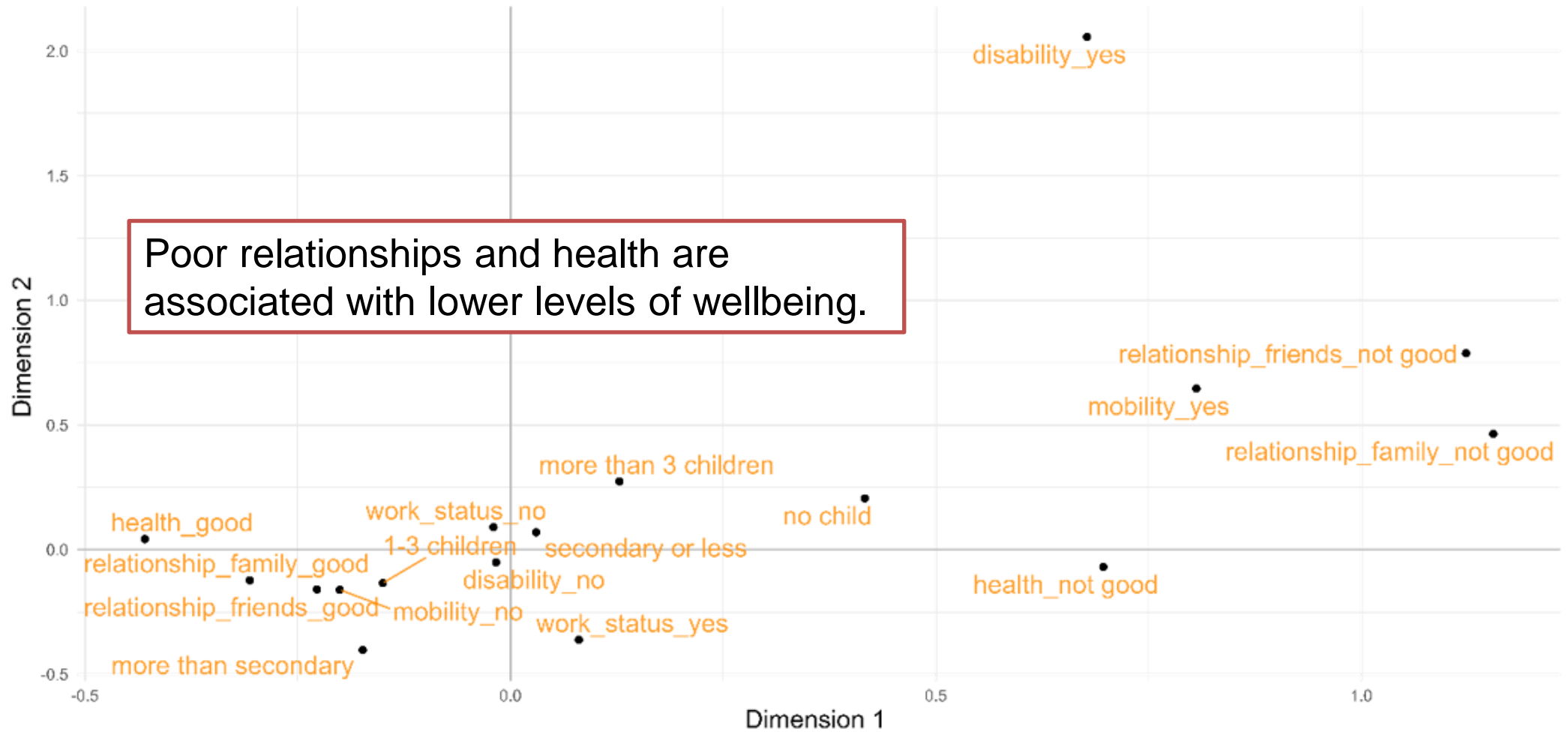
(A) Quality of Life, Life Satisfaction, and Psychological Wellbeing



Two principal components contribute to 22% of the total variation of the data.

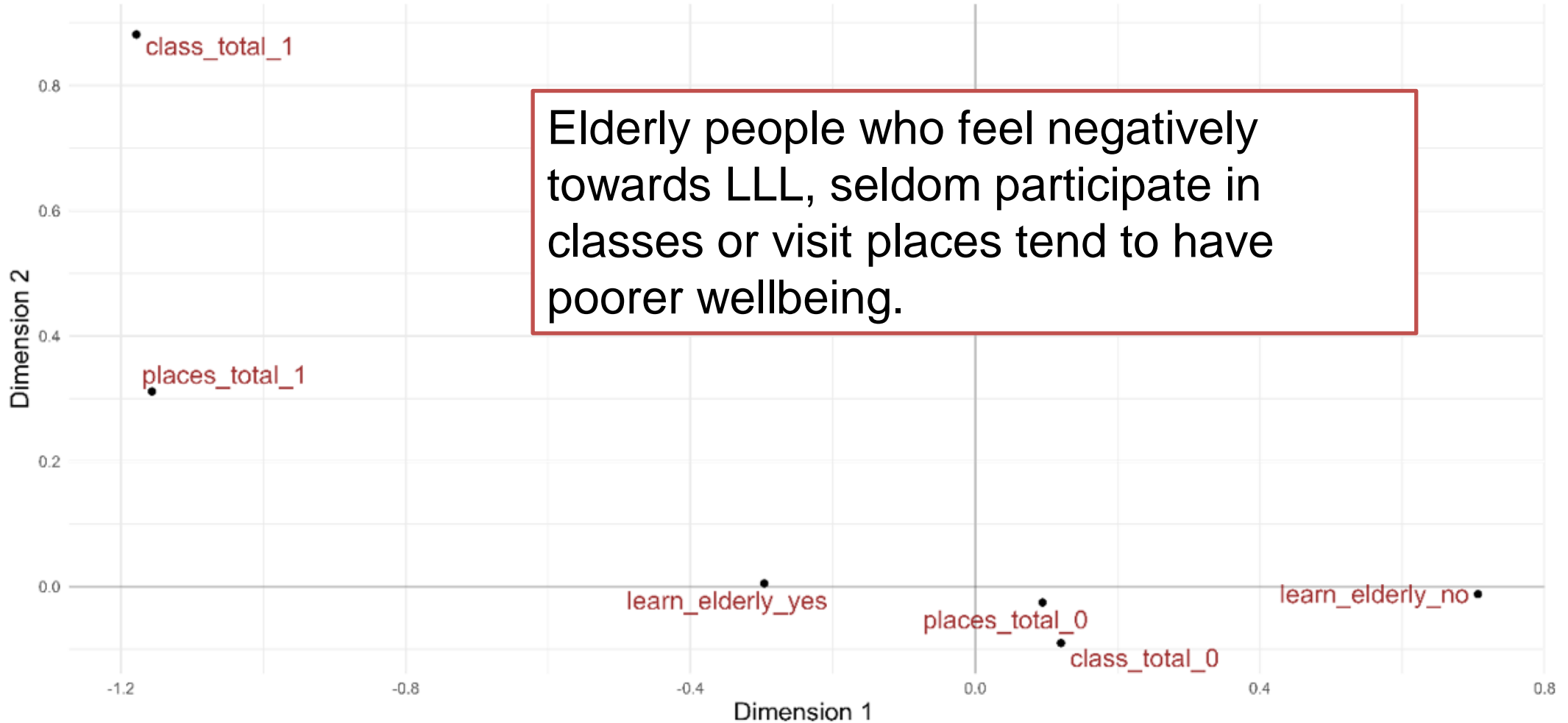
Results of multiple correspondence analysis

(B) Demographics



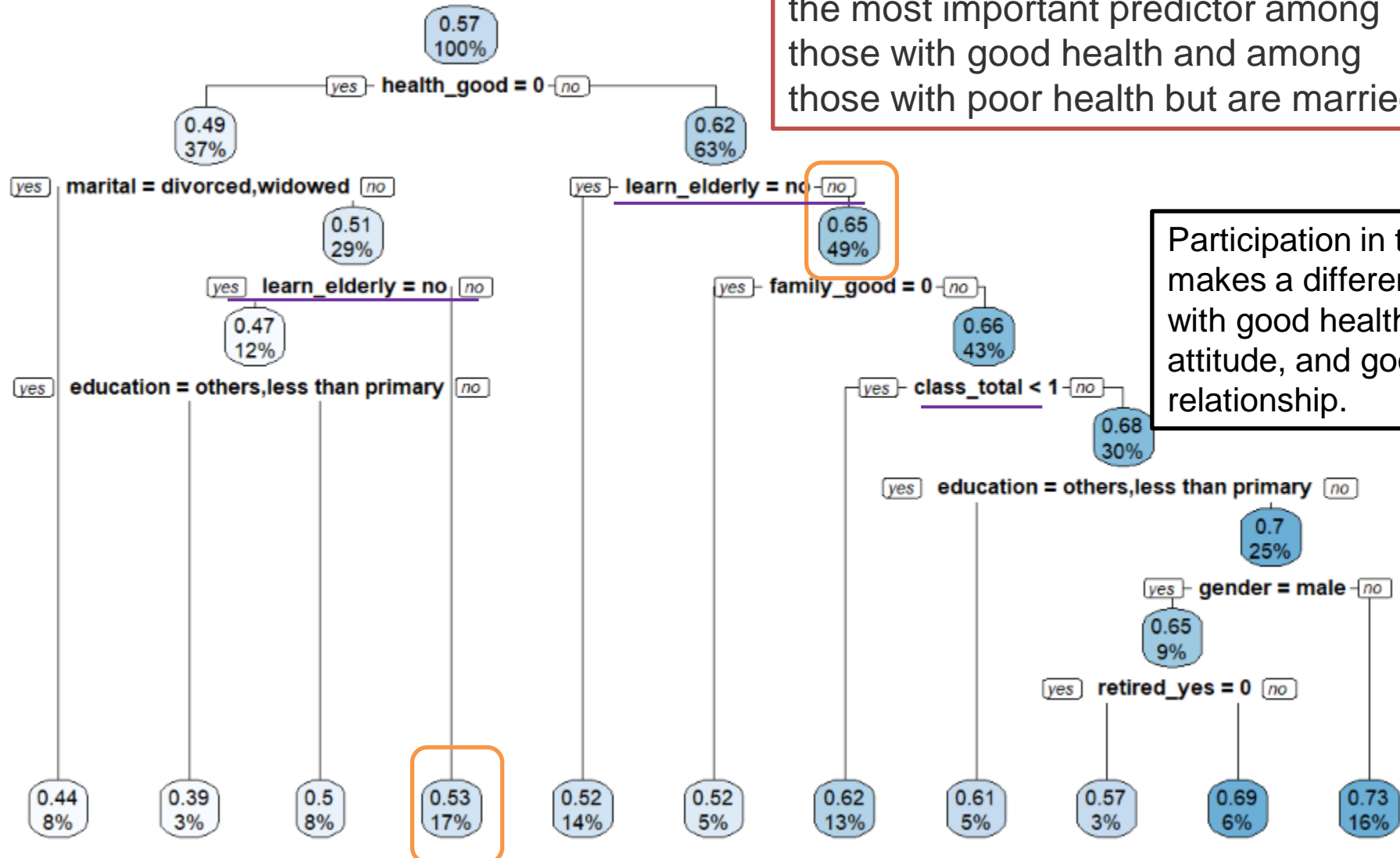
Results of multiple correspondence analysis

(C) Lifelong Learning



Results of decision tree analysis

Quality of Life

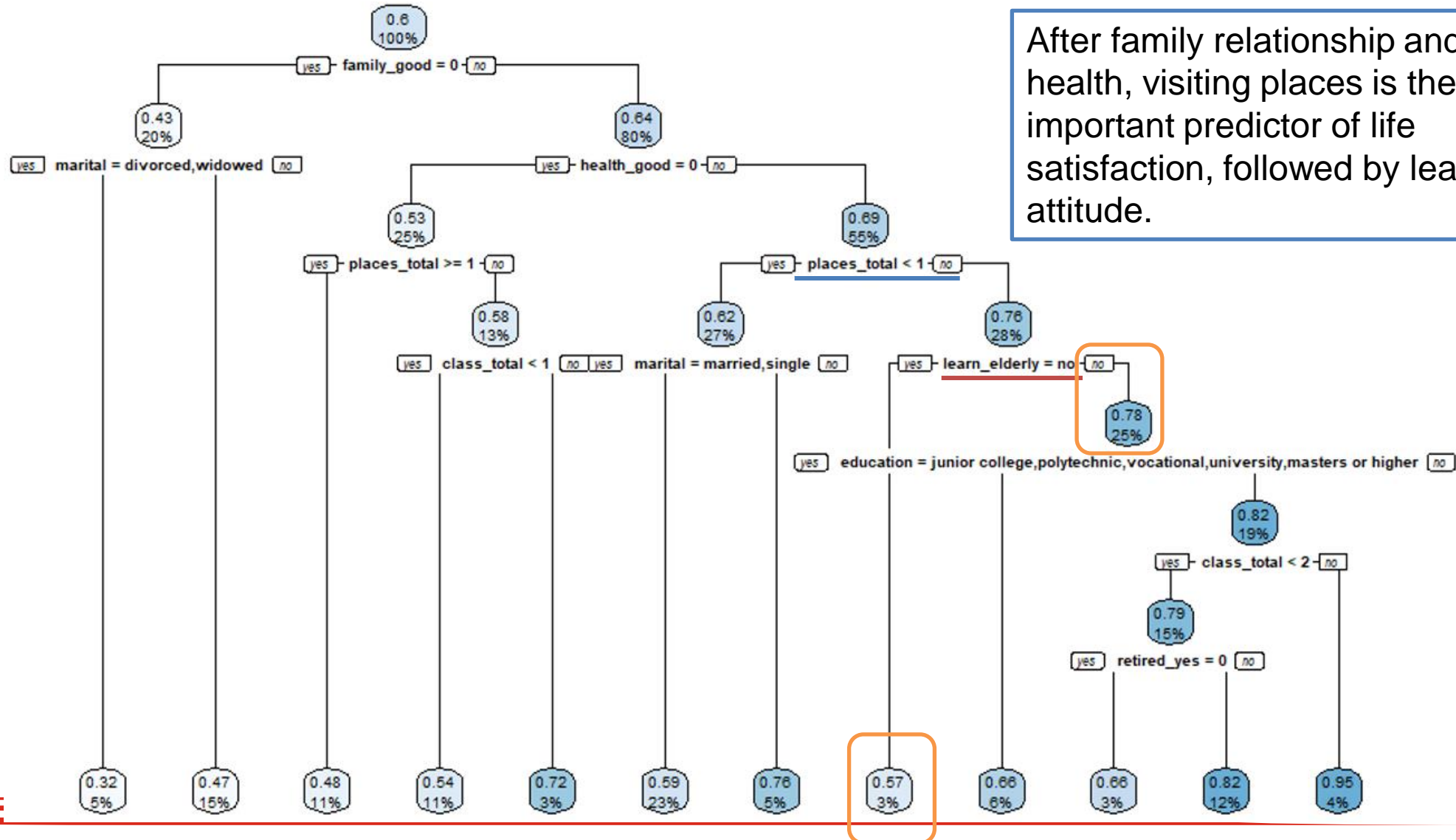


After health, attitude towards LLL is the most important predictor among those with good health and among those with poor health but are married.

Participation in the classes makes a difference for those with good health, good learning attitude, and good family relationship.

Results of decision tree analysis

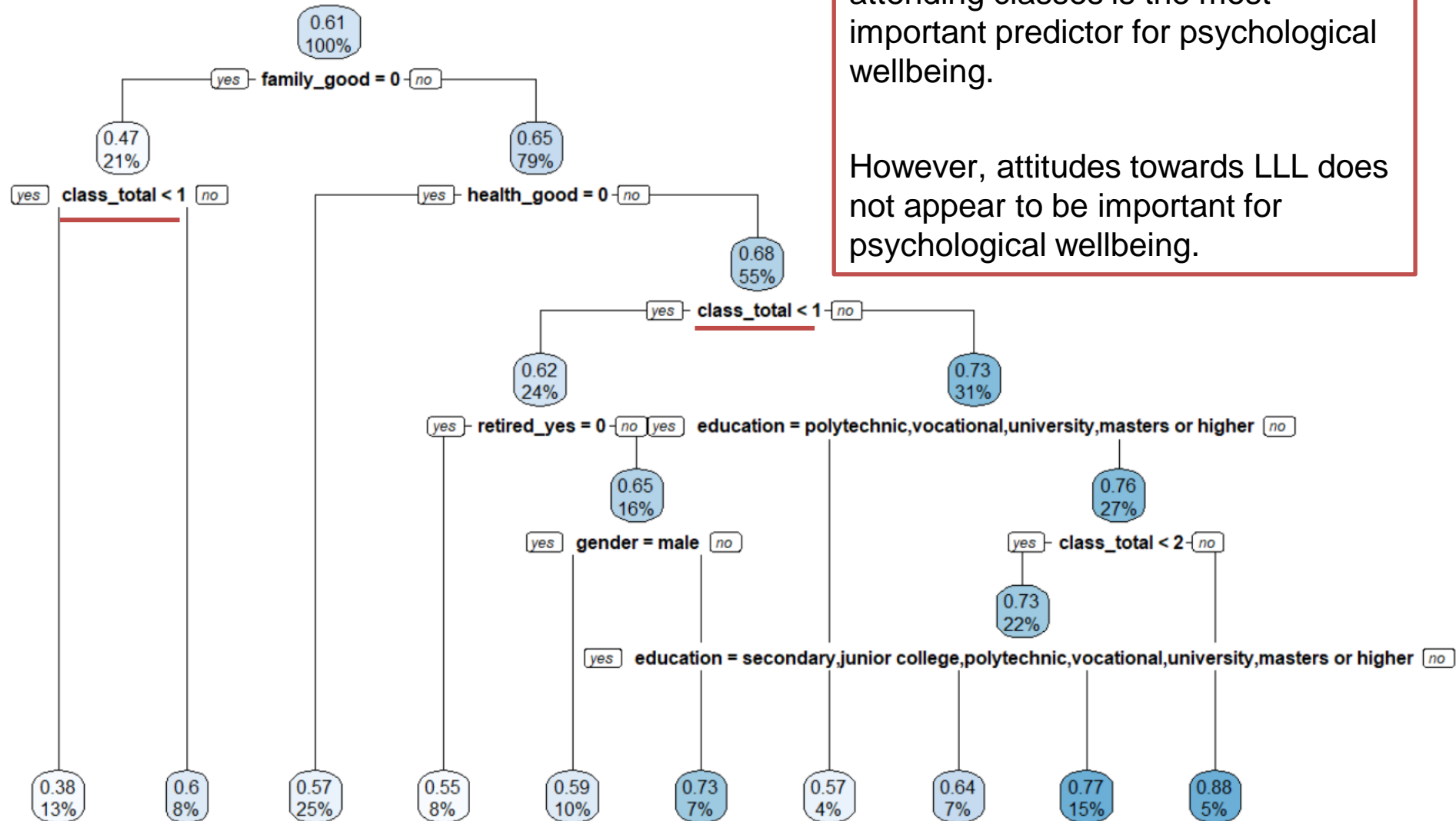
Satisfaction with Life



After family relationship and health, visiting places is the most important predictor of life satisfaction, followed by learning attitude.

Results of decision tree analysis

Psychological wellbeing



After family relationship and health, attending classes is the most important predictor for psychological wellbeing.

However, attitudes towards LLL does not appear to be important for psychological wellbeing.

Results of regression analysis

| | (1) Quality of Life | (2) Satisfaction with Life | (3) Psychological Wellbeing |
|-----------------------|------------------------|----------------------------------|-----------------------------------|
| <i>learn_elderly</i> | 0.0611*** (0.0186) | 0.0414 (0.0272) | 0.0289 (0.0314) |
| <i>class_total</i> | 0.0491*** (0.0132) | 0.0739*** (0.0199) | 0.0802*** (0.0231) |
| <i>places_total</i> | 0.00355 (0.0136) | -0.00305 (0.0196) | 0.000605 (0.0219) |
| <i>disability</i> | -0.00879 (0.0589) | 0.0989 (0.102) | 0.0137 (0.0655) |
| <i>mobility</i> | -0.0197 (0.0211) | -0.0601* (0.0350) | -0.0501 (0.0364) |
| <i>health_good</i> | 0.0957*** (0.0156) | 0.108*** (0.0250) | 0.0972*** (0.0270) |
| <i>family_good</i> | 0.0482** (0.0205) | 0.128*** (0.0302) | 0.111*** (0.0334) |
| <i>friends_good</i> | 0.0299 (0.0224) | 0.0281 (0.0351) | 0.0103 (0.0371) |
| <i>retired_yes</i> | 0.0160 (0.0200) | 0.0844*** (0.0280) | 0.0658** (0.0284) |
| <i>female</i> | -0.0259 (0.0172) | -0.00938 (0.0252) | 0.000197 (0.0272) |
| <i>married</i> | 0.0260 (0.0180) | 0.0202 (0.0271) | 0.0322 (0.0281) |
| <i>secondary_more</i> | 0.0173 (0.0188) | -0.0620** (0.0258) | -0.0485* (0.0286) |
| <i>no_children</i> | 0.00714 (0.00486) | 0.00244 (0.00712) | -0.000965 (0.00755) |
| <i>Constant</i> | 0.343*** (0.0294) | 0.293*** (0.0412) | 0.348*** (0.0492) |
| Observations | 292 | 292 | 292 |
| R-squared | 0.319 | 0.327 | 0.259 |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

- Attitudes towards LLL:
statistically significant for QoL
- Participation in classes:
statistically significant for all three measures
- Visits to places:
insignificant for all three measure

Key Findings

1

About **25%** of the elderlies who perceived lifelong learning positively had not participated in any lifelong learning-related activity in the past 12 months.

2

Health and **family relationship** are the most important determinants of subjective wellbeing of older adults in Singapore.

3

Attitudes towards LLL play an important role, particularly in quality of life measure. **Participation in class activities** is important for all three measures of wellbeing.

Policy Implications

1

Lifelong learning is crucial to improve subjective wellbeing of older adults in Singapore.

2

Policy makers should encourage lifelong learning behaviours among those with the right attitude.

3

Policy makers should promote the lifelong learning spirit among all older adults.

Acknowledgement

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Thank You!