Grau-Ruiz, R., Ulset, V. S., Dyrdal, G. M., & Løvoll, H. S. (2026). Supplementary information for: Pathways to wellbeing: Residential nature, physical activity, and place-belongingness. *International Journal of Wellbeing*, *16*(1), 4841s, 1-73. https://doi.org/10.5502/ijw.v16i1.4841s

SUPPLEMENT

Supplementary information for: Pathways to wellbeing: Residential nature, physical activity, and place-belongingness

Raul Grau-Ruiz · Vidar Sandsaunet Ulset · Gunvor Marie Dyrdal
Helga Synnevåg Løvoll

Analysis code
21.10.2025

Contents

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1. Data preparation

Program: SPSS and Microsoft Excell (only in step 1.1. when specified)
Performed with SPSS syntax unless otherwise specified

1.1. Detection of monotones

1.1.1. Dataset: Livskvalitet 2020_V3

*This analysis has been conducted following the instructions provided by: Roni, S. M., & Djajadikerta, H. G. (2021). Data analysis with SPSS for survey-based research. Singapore: Springer. (P. 20-22)
*This means:
a) The procedure was performed before running any other analysis
b) The respondent answered 'X' for all questions having a Y-point Likert scale, irrespective of the question clusters.
*Therefore I am using the datasets are in their original state. This is also before importing vekt variable in 2021.
*The following steps are meant to spot cases with monotonic responses, that is those participants who score the same score in all items with the same type of scale, no matter what the question was about.
*Step1: Identifying in the original databases what types of variables and scales are included. We have:
a) Register data/technical variables (Bakgrunnsvariabler and Intervjutekniske variabler). These get associated to respondent's ID throught the portal, but are not answered by the respondent. Therefore these can be removed from this analysis
b) Items answered by the participant. The following scales are identified:
1-1000 continuous scale (9998= dont want to answer, 9999= don't know)
1-100 continuous scale (998= dont want to answer, 999= don't know)
0-10 point-likert scales (98= dont want to answer, 99= don't know)
1-8 point-likert scales (98= dont want to answer, 99= don't know)
1-7 point likert scales (8= dont want to answer, 9= don't know)
1-6 point likert? scales (8= dont want to answer, 9= don't know)
1-5 point likert? scales (8= dont want to answer, 9= don't know)
1-4 point likert? scales (8= dont want to answer, 9= don't know)
1-3 point scales (8= dont want to answer, 9= don't know)
1-2 point scales (8= dont want to answer, 9= don't know)
*Moreover, there are variables that are answered as a scale (horizontal), some of them without tags on each value, some of them with tags, some variables are to choose from a display, and I think that some variables are to fill in a number
*I see that this analysis is going to get very complex, so we should take some practical decisions. Perhaps it is wise to start just with 1-10 horizontal scales. The logic for starting with these:
1- highly comparable scales, 2- Abundant in the dataset, 3- They concern my analyses, 4- if variation is spotted within these, then it can be expected variations through other scales.
*Process for 2020.

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\0. Datasets\Original databases\2020_V3.sav'.
```

*Full list of variables in 2020_V3:
alder kjoenn sivilstand botid foedselsaar aldgrupp utdnivaa utd kvart_int
soshjmottaker selvok innvbak innvbak_2del fylke sentralitet LandBgr fagfelt reg_famtyp reg_hushtyp
reg_antpers_fam reg_bygg reg_rom lnr what aar intdato Tilfreds Mening1 Optim Mening2 Swls1 Swls2
Swls3 Swls4 Swls5 Eng1 Eng2 Eng3 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 Hels1 FornHelsF FornHelsP
Hels2a1 Hels2b Hels3a Hels3a2 EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5 Tillit
Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c HSCL5d
HSCL_h HSCL5e Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08 Fol09 Mater1 Mater2 Mater3 Mater4
Mater5 paffekt naffekt baffekt Antpers Gift Sivstat Kjaereste barn AntBarn BarnU19b BarnU19a
Kjonnident Tiltrek Seksorient_1 FornPartn FornBarn KontFam Naere FornVenn KontVenn Sosrel1 Sosrel2
Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1

```
   Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
   Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
   Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
   Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2
   sysselsatt FornJobb Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk
   ArbPriv ArbReis VIRK_NACE1_SN07 ARB_STILLINGSPST ARB_YRKE_STYRK08 FornSkole SkoleUonsk SkolePriv
   SkolePsykisk FornOko Uutgift OkoRomslig Raad1 Raad2 Raad3 Raad4 formue_08 hush_formue_08
   aksjeutbytte hush_aksjeutbytte arbledtrygd hush_arbledtrygd ba_aap ba_afp hush_ba_afp
   ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp hush_ba_ny_afp barnetrygd hush_barnetrygd
   BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd hush_folketrygd grunn_hjelp hush_grunn_hjelp
   studielaan hush_studielaan lonn hush_lonn narinnt hush_narinnt overfor hush_overfor renteinnt
   hush_renteinnt rtv_syk hush_rtv_sykep saminnt hush_saminnt skpl_overf hush_skpl_overf sosialstonad
   hush_sos_stonad studiestipend hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt
   hush_kapinnt wskfrie_overf hush_wskfrie_overf yrkinnt hush_yrkinnt hush_ies_eu ant_forbr_hush_eu
   lavinntekt FornBol FornSted Eie Tilhor Rekr Rekr2 Tur Trygg Bovold1 Bovold2 Bolprob1 Bolprob2
   bruksareal p_areal Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 Disk01 Disk02 Disk03 Disk04 Disk05
   Disk06 Disk07 Disk08 Disk09 Disk10 engasjert FornTid Travel Friv1 Rel1 Rel2 Aktiv1 Aktiv2 Aktiv3
   Aktiv4 Media1 Media2 Friv2 Friv3 Vekt_kal
*Variables which fit with a horizontal 1-10 point-s likert scale (37 variables):
   Tilfreds Mening1 Optim Mening2 Eng1 Eng2 Eng3 FornHelsF FornHelsP  Tillit Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08
Fol09 paffekt naffekt FornPartn FornBarn
    FornVenn FornJobb FornSkole FornOko  FornBol FornSted Tilhor Trygg Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid

FREQUENCIES VARIABLES=Tilfreds Mening1 Optim Mening2 Eng1 Eng2 Eng3 FornHelsF FornHelsP
 Tillit Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08 Fol09
paffekt naffekt FornPartn FornBarn  FornVenn FornJobb FornSkole
FornOko  FornBol FornSted Tilhor Trygg Innflyt
TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid
  /ORDER=ANALYSIS.

DELETE VARIABLES      alder kjoenn sivilstand botid foedselsaar aldgrupp utdnivaa utd kvart_int
   soshjmottaker selvok innvbak innvbak_2del fylke sentralitet LandBgr fagfelt reg_famtyp reg_hushtyp
   reg_antpers_fam reg_bygg reg_rom lnr what aar intdato   Swls1 Swls2
   Swls3 Swls4 Swls5 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 Hels1
   Hels2a1 Hels2b Hels3a Hels3a2 EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5
   Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c
HSCL5d
   HSCL_h HSCL5e Mater1 Mater2 Mater3 Mater4
   Mater5 baffekt Antpers Gift Sivstat Kjaereste barn AntBarn BarnU19b BarnU19a
   Kjonnident Tiltrek Seksorient_1 KontFam Naere KontVenn Sosrel1 Sosrel2
   Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
   Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
   Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
   Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
   Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
   Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
   Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2
   sysselsatt Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk
   ArbPriv ArbReis VIRK_NACE1_SN07 ARB_STILLINGSPST ARB_YRKE_STYRK08 SkoleUonsk SkolePriv
   SkolePsykisk Uutgift OkoRomslig Raad1 Raad2 Raad3 Raad4 formue_08 hush_formue_08
   aksjeutbytte hush_aksjeutbytte arbledtrygd hush_arbledtrygd ba_aap ba_afp hush_ba_afp
   ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp hush_ba_ny_afp barnetrygd hush_barnetrygd
   BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd hush_folketrygd grunn_hjelp hush_grunn_hjelp
   studielaan hush_studielaan lonn hush_lonn narinnt hush_narinnt overfor hush_overfor renteinnt
   hush_renteinnt rtv_syk hush_rtv_sykep saminnt hush_saminnt skpl_overf hush_skpl_overf sosialstonad
   hush_sos_stonad studiestipend hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt
   hush_kapinnt wskfrie_overf hush_wskfrie_overf yrkinnt hush_yrkinnt hush_ies_eu ant_forbr_hush_eu
   lavinntekt Eie Rekr Rekr2 Tur Bovold1 Bovold2 Bolprob1 Bolprob2
   bruksareal p_areal Disk01 Disk02 Disk03 Disk04 Disk05
   Disk06 Disk07 Disk08 Disk09 Disk10 engasjert Travel Friv1 Rel1 Rel2 Aktiv1 Aktiv2 Aktiv3
   Aktiv4 Media1 Media2 Friv2 Friv3 Vekt_kal.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0.
Original datasets monotone detection\1. Monotone detection for 2020\2020_original_mono_1_to_10_scale.sav'
  /COMPRESSED.
```

```
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0.
Original datasets monotone detection\1. Monotone detection for 2020_V3\2020_V3_original_mono_1_to_10_scale.sav'
  /COMPRESSED.
2020_V3_original_mono_1_to_10_scale.sav
*With this syntax, I create Excell files, necesary for spotting monotones.
SAVE TRANSLATE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data
preparation\0. Original datasets monotone detection\1. Monotone detection for
2020_V3\2020_V3_original_mono_1_to_10_scale.xlsx'
  /TYPE=XLS
  /VERSION=12
  /MAP
  /FIELDNAMES VALUE=NAMES
  /CELLS=VALUES
  /REPLACE.
SAVE TRANSLATE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data
preparation\0. Original datasets monotone detection\1. Monotone detection for 2020\2020_original_mono_1_to_10_scale.xlsx'
  /TYPE=XLS
  /VERSION=12
  /MAP
  /FIELDNAMES VALUE=NAMES
  /CELLS=VALUES
  /REPLACE.
* Next steps have to happen in Excel, following the source mentioned earlier. The monotonic score is calculated with the formula =
VAR.S(A2:AK2), and then dragging the function down the same column.
* However, it is spotted that variables FornPartn FornBarn FornJobb FornSkole are not necessarily answered by every case, because
they are follow-up questions. Therefore they contain missing data, and if included they create a fail.
* Manually delete these in Excell *  New formula  = VAR.S(A2:AG2) * Drag down
*Thus for the formula to work I  must manually exclude them. When excluded, it is possible to calculate the monotonic score out of
the remaining 33  variables with 10-points horizontal likert-scale. This variable is named as "MONO_10POINT_33VAR"



GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0. Original datasets
monotone detection\1. Monotone '+
    'detection for 2020\2020_original_mono_1_to_10_scale.xlsx'
  /SHEET=name '2020_original_mono_1_to_10_scal'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.
GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0. Original datasets
monotone detection\1. Monotone '+
    'detection for 2020_V3\2020_V3_original_mono_1_to_10_scale.xlsx'
  /SHEET=name '2020_V3_original_mono_1_to_10_s'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.
DELETE VARIABLES Tilfreds Mening1 Optim Mening2 Eng1 Eng2 Eng3 FornHelsF FornHelsP Tillit
    Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08 Fol09 paffekt naffekt FornVenn FornOko FornBol
    FornSted Tilhor Trygg Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0.
Original datasets monotone detection\1. Monotone detection for 2020_V3\2020_V3_mono_10point_33var.sav'
  /COMPRESSED.
*Now I have a SPSS datafile (NAME: 2020_V3_mono_10point_33var) in this same folder, containing only this one monotonic score
(33 variables, 1-10 likert scale, based on:
```

```
  Tilfreds Mening1 Optim Mening2 Eng1 Eng2 Eng3 FornHelsF FornHelsP Tillit    Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08
Fol09 paffekt naffekt FornVenn FornOko FornBol    FornSted Tilhor Trygg Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid)


*Now I will add the monotone variable in 2020_V3.
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\0. Datasets\Original
databases\2020_V3.sav'.
MATCH FILES /FILE=*
  /FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0. Original datasets
monotone detection\1. Monotone '+
    'detection for 2020_V3\2020_V3_mono_10point_33var.sav'.
EXECUTE.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0.
Original datasets monotone detection\1. Monotone detection for 2020_V3\2020_V3_with_mono_10point_33var.sav'
  /COMPRESSED.



GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0. Original datasets
monotone detection\1. Monotone '+
    'detection for 2020_V3\2020_V3_with_mono_10point_33var.sav'.



DELETE VARIABLES  alder kjoenn sivilstand botid foedselsaar aldgrupp utdnivaa utd kvart_int
    soshjmottaker selvok innvbak innvbak_2del fylke sentralitet LandBgr fagfelt reg_famtyp reg_hushtyp
    reg_antpers_fam reg_bygg reg_rom lnr what aar intdato   Swls1 Swls2
    Swls3 Swls4 Swls5 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 Hels1
    Hels2a1 Hels2b Hels3a Hels3a2 EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5
    Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c
HSCL5d
    HSCL_h HSCL5e Mater1 Mater2 Mater3 Mater4
    Mater5 baffekt Antpers Gift Sivstat Kjaereste barn AntBarn BarnU19b BarnU19a
    Kjonnident Tiltrek Seksorient_1 KontFam Naere KontVenn Sosrel1 Sosrel2
    Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
    Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
    Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
    Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
    Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
    Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
    Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2
    sysselsatt Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk
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    SkolePsykisk Uutgift OkoRomslig Raad1 Raad2 Raad3 Raad4 formue_08 hush_formue_08
    aksjeutbytte hush_aksjeutbytte arbledtrygd hush_arbledtrygd ba_aap ba_afp hush_ba_afp
    ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp hush_ba_ny_afp barnetrygd hush_barnetrygd
    BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd hush_folketrygd grunn_hjelp hush_grunn_hjelp
    studielaan hush_studielaan lonn hush_lonn narinnt hush_narinnt overfor hush_overfor renteinnt
    hush_renteinnt rtv_syk hush_rtv_sykep saminnt hush_saminnt skpl_overf hush_skpl_overf sosialstonad
    hush_sos_stonad studiestipend hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt
    hush_kapinnt wskfrie_overf hush_wskfrie_overf yrkinnt hush_yrkinnt hush_ies_eu ant_forbr_hush_eu
    lavinntekt Eie Rekr Rekr2 Tur Bovold1 Bovold2 Bolprob1 Bolprob2
    bruksareal p_areal Disk01 Disk02 Disk03 Disk04 Disk05
    Disk06 Disk07 Disk08 Disk09 Disk10 engasjert Travel Friv1 Rel1 Rel2 Aktiv1 Aktiv2 Aktiv3
    Aktiv4 Media1 Media2 Friv2 Friv3 Vekt_kal  FornPartn FornBarn FornJobb FornSkole.
COMPUTE ID=$CASENUM.
EXECUTE.
SORT CASES BY MONO_10POINT_33VAR(A).
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0.
Original datasets monotone detection\1. Monotone detection for 2020_V3\2020_V3_with_mono_10point_33var.sav'
  /COMPRESSED.
```

*By doing this, I spot 4 potential monotones. I can see that they corrected H59 (tillit). But I have to redo analysis without paffekt and naffekt. However I can include now Sosrel1 Sosrel2

```
FREQUENCIES VARIABLES= tillit
  /ORDER=ANALYSIS.
* Redo process.
```

*This syntax is a copy of the start for this analysis, so that I can remove variable H59 from analysis too because it is faulty.
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*I see that this analysis is going to get very complex, so we should take some practical decisions. Perhaps it is wise to start just with 1-10 horizontal scales. The logic for starting with these:
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```
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```

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alder kjoenn sivilstand botid foedselsaar aldgrupp utdnivaa utd kvart_int
soshjmottaker selvok innvbak innvbak_2del fylke sentralitet LandBgr fagfelt reg_famtyp reg_hushtyp
reg_antpers_fam reg_bygg reg_rom lnr what aar intdato Tilfreds Mening1 Optim Mening2 Swls1 Swls2
Swls3 Swls4 Swls5 Eng1 Eng2 Eng3 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 Hels1 FornHelsF FornHelsP
Hels2a1 Hels2b Hels3a Hels3a2 EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5 Tillit
Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c
HSCL5d
HSCL_h HSCL5e Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08 Fol09 Mater1 Mater2 Mater3 Mater4
Mater5 paffekt naffekt baffekt Antpers Gift Sivstat Kjaereste barn AntBarn BarnU19b BarnU19a
Kjonnident Tiltrek Seksorient_1 FornPartn FornBarn KontFam Naere FornVenn KontVenn Sosrel1 Sosrel2
Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2
sysselsatt FornJobb Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk
ArbPriv ArbReis VIRK_NACE1_SN07 ARB_STILLINGSPST ARB_YRKE_STYRK08 FornSkole SkoleUonsk SkolePriv
SkolePsykisk FornOko Uutgift OkoRomslig Raad1 Raad2 Raad3 Raad4 formue_08 hush_formue_08
aksjeutbytte hush_aksjeutbytte arbledtrygd hush_arbledtrygd ba_aap ba_afp hush_ba_afp
ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp hush_ba_ny_afp barnetrygd hush_barnetrygd

BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd hush_folketrygd grunn_hjelp hush_grunn_hjelp
studielaan hush_studielaan lonn hush_lonn narinnt hush_narinnt overfor hush_overfor renteinnt
hush_renteinnt rtv_syk hush_rtv_sykep saminnt hush_saminnt skpl_overf hush_skpl_overf sosialstonad
hush_sos_stonad studiestipend hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt
hush_kapinnt wskfrie_overf hush_wskfrie_overf yrkinnt hush_yrkinnt hush_ies_eu ant_forbr_hush_eu
lavinntekt FornBol FornSted Eie Tilhor Rekr Rekr2 Tur Trygg Bovold1 Bovold2 Bolprob1 Bolprob2
bruksareal p_areal Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 Disk01 Disk02 Disk03 Disk04 Disk05
Disk06 Disk07 Disk08 Disk09 Disk10 engasjert FornTid Travel Friv1 Rel1 Rel2 Aktiv1 Aktiv2 Aktiv3
Aktiv4 Media1 Media2 Friv2 Friv3 Vekt_kal
*Variables which fit with a horizontal 1-10 point-s likert scale (37 variables. But with the canges made):
Tilfreds Mening1 Optim Mening2 Eng1 Eng2 Eng3 FornHelsF FornHelsP Tillit Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08 Fol09 FornPartn FornBarn
FornVenn FornJobb FornSkole FornOko FornBol FornSted Tilhor Trygg Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid Sosrel1 Sosrel2
*Note here! I will also delete those 10point likert scale variables which proved to be useless in previous monotone analysis.
DELETE VARIABLES alder kjoenn sivilstand botid foedselsaar aldgrupp utdnivaa utd kvart_int
soshjmottaker selvok innvbak innvbak_2del fylke sentralitet LandBgr fagfelt reg_famtyp reg_hushtyp
reg_antpers_fam reg_bygg reg_rom lnr what aar intdato Swls1 Swls2
Swls3 Swls4 Swls5 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 Hels1
Hels2a1 Hels2b Hels3a Hels3a2 EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5
Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c HSCL5d
HSCL_h HSCL5e Mater1 Mater2 Mater3 Mater4
Mater5 paffekt naffekt baffekt Antpers Gift Sivstat Kjaereste barn AntBarn BarnU19b BarnU19a
Kjonnident Tiltrek Seksorient_1 KontFam Naere KontVenn
Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2
sysselsatt Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk
ArbPriv ArbReis VIRK_NACE1_SN07 ARB_STILLINGSPST ARB_YRKE_STYRK08 SkoleUonsk SkolePriv
SkolePsykisk Uutgift OkoRomslig Raad1 Raad2 Raad3 Raad4 formue_08 hush_formue_08
aksjeutbytte hush_aksjeutbytte arbledtrygd hush_arbledtrygd ba_aap ba_afp hush_ba_afp
ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp hush_ba_ny_afp barnetrygd hush_barnetrygd
BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd hush_folketrygd grunn_hjelp hush_grunn_hjelp
studielaan hush_studielaan lonn hush_lonn narinnt hush_narinnt overfor hush_overfor renteinnt
hush_renteinnt rtv_syk hush_rtv_sykep saminnt hush_saminnt skpl_overf hush_skpl_overf sosialstonad
hush_sos_stonad studiestipend hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt
hush_kapinnt wskfrie_overf hush_wskfrie_overf yrkinnt hush_yrkinnt hush_ies_eu ant_forbr_hush_eu
lavinntekt Eie Rekr Rekr2 Tur Bovold1 Bovold2 Bolprob1 Bolprob2
bruksareal p_areal Disk01 Disk02 Disk03 Disk04 Disk05
Disk06 Disk07 Disk08 Disk09 Disk10 engasjert Travel Friv1 Rel1 Rel2 Aktiv1 Aktiv2 Aktiv3
Aktiv4 Media1 Media2 Friv2 Friv3 Vekt_kal FornPartn FornBarn FornJobb FornSkole.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0. Original datasets monotone detection\1. Monotone detection for 2020_V3\2020_V3_original_mono_1_to_10_scale_2.sav'
/COMPRESSED.
*With this syntax, I create Excell files, necesary for spotting monotones. This may be long, so the same process needs to be performed manually.
SAVE TRANSLATE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0. Original datasets monotone detection\1. Monotone detection for 2020_V3\2020_V3_original_mono_2.xlsx'
/TYPE=XLS
/VERSION=12
/MAP
/FIELDNAMES VALUE=NAMES
/CELLS=VALUES
/REPLACE.
* Next steps have to happen in Excel, following the source mentioned earlier. The monotonic score is calculated with the formula = VAR.S(A2:AG2), and then dragging the function down the same column.
*Like this it was created variable named as "MONO_10POINT_33VAR"

```
*After calculating the monotonic score in excel. Import this file to SPSS.
*2020_V3.
GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0. Original datasets
monotone detection\1. Monotone '+
    'detection for 2020_V3\2020_V3_original_mono_2.xlsx'
  /SHEET=name '2020_V3_original_mono_2'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DELETE VARIABLES Tilfreds Mening1 Optim Mening2 Eng1 Eng2 Eng3 FornHelsF FornHelsP Tillit
    Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08 Fol09 FornVenn Sosrel1 Sosrel2 FornOko FornBol
    FornSted Tilhor Trygg Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0.
Original datasets monotone detection\1. Monotone detection for 2020_V3\2020_V3_mono_10point_33var.sav'
  /COMPRESSED.
*Now I have a SPSS datafile (NAME: 2020_mono_10point_33var) in this same folder, containing only this one monotonic score (33
variables, 1-10 likert scale, based on:
    Tilfreds Mening1 Optim Mening2 Eng1 Eng2 Eng3 FornHelsF FornHelsP Tillit     Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08
Fol09 FornVenn Sosrel1 Sosrel2 FornOko FornBol     FornSted Tilhor Trygg Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid.



*Now I will add the monotone variable in 2020_V3.
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\0. Datasets\Original
databases\2020_V3.sav'.
MATCH FILES /FILE=*
  /FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0. Original datasets
monotone detection\1. Monotone '+
    'detection for 2020_V3\2020_V3_mono_10point_33var.sav'.
EXECUTE.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0.
Original datasets monotone detection\1. Monotone detection for 2020_V3\2020_V3_with_mono_10point_33var.sav'
  /COMPRESSED.



GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0. Original datasets
monotone detection\1. Monotone '+
    'detection for 2020_V3\2020_V3_with_mono_10point_33var.sav'.
DELETE VARIABLES  alder kjoenn sivilstand botid foedselsaar aldgrupp utdnivaa utd kvart_int
    soshjmottaker selvok innvbak innvbak_2del fylke sentralitet LandBgr fagfelt reg_famtyp reg_hushtyp
    reg_antpers_fam reg_bygg reg_rom lnr what aar intdato Swls1 Swls2
    Swls3 Swls4 Swls5 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 Hels1
    Hels2a1 Hels2b Hels3a Hels3a2 EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5
    Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c
HSCL5d
    HSCL_h HSCL5e Mater1 Mater2 Mater3 Mater4
    Mater5 paffekt naffekt baffekt Antpers Gift Sivstat Kjaereste barn AntBarn BarnU19b BarnU19a
    Kjonnident Tiltrek Seksorient_1 KontFam Naere KontVenn
    Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
    Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
    Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
    Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
    Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
    Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
    Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2
    sysselsatt Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk
    ArbPriv ArbReis VIRK_NACE1_SN07 ARB_STILLINGSPST ARB_YRKE_STYRK08 SkoleUonsk SkolePriv
```

SkolePsykisk Uutgift OkoRomslig Raad1 Raad2 Raad3 Raad4 formue_08 hush_formue_08
aksjeutbytte hush_aksjeutbytte arbledtrygd hush_arbledtrygd ba_aap ba_afp hush_ba_afp
ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp hush_ba_ny_afp barnetrygd hush_barnetrygd
BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd hush_folketrygd grunn_hjelp hush_grunn_hjelp
studielaan hush_studielaan lonn hush_lonn narinnt hush_narinnt overfor hush_overfor renteinnt
hush_renteinnt rtv_syk hush_rtv_sykep saminnt hush_saminnt skpl_overf hush_skpl_overf sosialstonad
hush_sos_stonad studiestipend hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt
hush_kapinnt wskfrie_overf hush_wskfrie_overf yrkinnt hush_yrkinnt hush_ies_eu ant_forbr_hush_eu
lavinntekt Eie Rekr Rekr2 Tur Bovold1 Bovold2 Bolprob1 Bolprob2
bruksareal p_areal Disk01 Disk02 Disk03 Disk04 Disk05
Disk06 Disk07 Disk08 Disk09 Disk10 engasjert Travel Friv1 Rel1 Rel2 Aktiv1 Aktiv2 Aktiv3
Aktiv4 Media1 Media2 Friv2 Friv3 Vekt_kal FornPartn FornBarn FornJobb FornSkole.
COMPUTE ID=$CASENUM.
EXECUTE.

SORT CASES BY MONO_10POINT_33VAR(A).
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\Analyse\1. Data preparation\0. Original datasets monotone detection\1. Monotone detection for 2020_V3\2020_V3_with_mono_10point_33var.sav'
/COMPRESSED.
*By doing this, I spot 4 potential monotones. In the dataset 2020_V3. These are case number:
Monotonic score of 0= 2339, 2410, 11601
Monotonic score of .03= 9842.

1.1.2. Dataset: Livskvalitet 2021_V2

GET
FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
'Datasets\Original databases\2021_V2.sav'.
*Full list of variables in 2021_V2:
* alder Antpers Gift Kjaereste barn AntBarn BarnU19b BarnU19a Kjonnident
Tiltrek Seksorient_1 sysselsatt Rel2 kjoenn sivilstand botid VIRK_NACE1_SN07 ARB_STILLINGSPST
ARB_YRKE_STYRK08 foedselsaar innvbak innvbak_2del fylke sentralitet LandBgr fagfelt reg_famtyp
reg_hushtyp reg_antpers_fam reg_bygg reg_rom aldgrupp utdnivaa utd Tilfreds Mening1 Optim Mening2
Swls1 Swls2 Swls3 Swls4 Swls5 Eng1 Eng2 Eng3 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 KoronaPsyk Disk01
Disk02 Disk03 Disk04 Disk05 Disk06 Disk07 Disk08 Disk09 Disk10 Hels1 FornHelsF FornHelsP Hels2a
Hels2b Hels3a1 Hels3a2 Hels3b EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5 Tillit
Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c HSCL5d
HSCL_h HSCL5e Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08 Fol09 Mater1 Mater2 Mater3 Mater4
Mater5 engasjert paffekt naffekt baffekt FornPartn FornBarn KontFam Naere FornVenn KontVenn Sosrel1
Sosrel2 Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2 Arb3
Arb3b FornJobb Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk ArbPriv
ArbHjem ArbReis skole FornSkole SkoleUonsk SkolePriv SkolePsykisk FornOko Uutgift OkoRomslig Raad1
Raad2 Raad3 Raad4 formue_08 hush_formue_08 aksjeutbytte hush_aksjeutbytte arbledtrygd
hush_arbledtrygd ba_aap ba_afp hush_ba_afp ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp
hush_ba_ny_afp barnetrygd hush_barnetrygd BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd
hush_folketrygd grunn_hjelp hush_grunn_hjelp studielaan hush_studielaan lonn hush_lonn narinnt
hush_narinnt overfor hush_overfor renteinnt hush_renteinnt rtv_syk hush_rtv_sykep saminnt
hush_saminnt skpl_overf hush_skpl_overf sosialstonad hush_sos_stonad studiestipend
hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt hush_kapinnt wskfrie_overf
hush_wskfrie_overf yrkinnt hush_yrkinnt hush_ies_eu ant_forbr_hush_eu lavinntekt kvart_int
soshjmottaker selvok FornBol FornSted Eie Tilhor Rekr Rekr2 Tur Trygg Bovold1 Bovold2 Bolprob1
Bolprob2 bruksareal p_areal Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid Travel Friv1 Rel1
Aktiv1 Aktiv2 Aktiv3 Aktiv4 Media1 Media2 Friv2 Friv3 lnr what Vekt_kal aar intdato
*Variables which fit with a horizontal 1-10 point-s likert scale (37 variables. But with the changes made):
Tilfreds Mening1 Optim Mening2 Eng1 Eng2 Eng3 FornHelsF FornHelsP Tillit Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08 Fol09 FornPartn FornBarn

FornVenn FornJobb FornSkole FornOko FornBol FornSted Tilhor Trygg Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid Sosrel1 Sosrel2
*Note here! I will also delete those 10point likert scale variables which proved to be useless in previous monotone analysis. <- THIS WAS PREVIOUSLY, I HAVE NOT DONE THIS

*Previously:DELETE VARIABLES alder kjoenn sivilstand botid foedselsaar aldgrupp utdnivaa utd kvart_int
soshjmottaker selvok innvbak innvbak_2del fylke sentralitet LandBgr fagfelt reg_famtyp reg_hushtyp
reg_antpers_fam reg_bygg reg_rom lnr what aar intdato Swls1 Swls2
Swls3 Swls4 Swls5 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 Hels1
Hels2a1 Hels2b Hels3a Hels3a2 EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5
Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c HSCL5d
HSCL_h HSCL5e Mater1 Mater2 Mater3 Mater4
Mater5 paffekt naffekt baffekt Antpers Gift Sivstat Kjaereste barn AntBarn BarnU19b BarnU19a
Kjonnident Tiltrek Seksorient_1 KontFam Naere KontVenn
Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2
sysselsatt Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk
ArbPriv ArbReis VIRK_NACE1_SN07 ARB_STILLINGSPST ARB_YRKE_STYRK08 SkoleUonsk SkolePriv
SkolePsykisk Uutgift OkoRomslig Raad1 Raad2 Raad3 Raad4 formue_08 hush_formue_08
aksjeutbytte hush_aksjeutbytte arbledtrygd hush_arbledtrygd ba_aap ba_afp hush_ba_afp
ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp hush_ba_ny_afp barnetrygd hush_barnetrygd
BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd hush_folketrygd grunn_hjelp hush_grunn_hjelp
studielaan hush_studielaan lonn hush_lonn narinnt hush_narinnt overfor hush_overfor renteinnt
hush_renteinnt rtv_syk hush_rtv_sykep saminnt hush_saminnt skpl_overf hush_skpl_overf sosialstonad
hush_sos_stonad studiestipend hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt
hush_kapinnt wskfrie_overf hush_wskfrie_overf yrkinnt hush_yrkinnt hush_ies_eu ant_forbr_hush_eu
lavinntekt Eie Rekr Rekr2 Tur Bovold1 Bovold2 Bolprob1 Bolprob2
bruksareal p_areal Disk01 Disk02 Disk03 Disk04 Disk05
Disk06 Disk07 Disk08 Disk09 Disk10 engasjert Travel Friv1 Rel1 Rel2 Aktiv1 Aktiv2 Aktiv3
Aktiv4 Media1 Media2 Friv2 Friv3 Vekt_kal FornPartn FornBarn FornJobb FornSkole.
DELETE VARIABLES alder Antpers Gift Kjaereste barn AntBarn BarnU19b BarnU19a Kjonnident
Tiltrek Seksorient_1 sysselsatt Rel2 kjoenn sivilstand botid VIRK_NACE1_SN07 ARB_STILLINGSPST
ARB_YRKE_STYRK08 foedselsaar innvbak innvbak_2del fylke sentralitet LandBgr fagfelt reg_famtyp
reg_hushtyp reg_antpers_fam reg_bygg reg_rom aldgrupp utdnivaa utd
Swls1 Swls2 Swls3 Swls4 Swls5 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 KoronaPsyk Disk01
Disk02 Disk03 Disk04 Disk05 Disk06 Disk07 Disk08 Disk09 Disk10 Hels1 Hels2a
Hels2b Hels3a1 Hels3a2 Hels3b EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5
Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c HSCL5d
HSCL_h HSCL5e Mater1 Mater2 Mater3 Mater4
Mater5 engasjert paffekt naffekt baffekt KontFam Naere KontVenn
Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2 Arb3
Arb3b Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk ArbPriv
ArbHjem ArbReis skole SkoleUonsk SkolePriv SkolePsykisk Uutgift OkoRomslig Raad1
Raad2 Raad3 Raad4 formue_08 hush_formue_08 aksjeutbytte hush_aksjeutbytte arbledtrygd
hush_arbledtrygd ba_aap ba_afp hush_ba_afp ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp
hush_ba_ny_afp barnetrygd hush_barnetrygd BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd
hush_folketrygd grunn_hjelp hush_grunn_hjelp studielaan hush_studielaan lonn hush_lonn narinnt
hush_narinnt overfor hush_overfor renteinnt hush_renteinnt rtv_syk hush_rtv_sykep saminnt
hush_saminnt skpl_overf hush_skpl_overf sosialstonad hush_sos_stonad studiestipend
hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt hush_kapinnt wskfrie_overf
hush_wskfrie_overf yrkinnt hush_yrkinnt hush_ies_eu ant_forbr_hush_eu lavinntekt kvart_int
soshjmottaker selvok Eie Rekr Rekr2 Tur Bovold1 Bovold2 Bolprob1

```
   Bolprob2 bruksareal p_areal  Travel Friv1 Rel1
   Aktiv1 Aktiv2 Aktiv3 Aktiv4 Media1 Media2 Friv2 Friv3 lnr what Vekt_kal aar intdato FornPartn FornBarn FornJobb FornSkole.
COMPUTE ID=$CASENUM.
EXECUTE.
*I left only 34 variables
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\1. Data preparation\0. Original datasets
monotone detection\2. Monotone detection for 2021_V2\2021_V2_only_1_to_10_scale_variables_34.sav'
  /COMPRESSED.
*With this syntax, I create Excell files, necesary for spotting monotones.
SAVE TRANSLATE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\1. Data preparation\0.
Original datasets monotone detection\2. Monotone detection for 2021_V2\2021_V2_only_1_to_10_scale_variables_34.xls'
  /TYPE=XLS
  /VERSION=2
  /MAP
  /REPLACE
  /FIELDNAMES.

SELECT IF (ID >= 16384).
EXECUTE.

SAVE TRANSLATE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\1. Data preparation\0.
Original datasets monotone detection\2. Monotone detection for 2021_V2\2021_V2_only_1_to_10_scale_variables_34(2).xls'
  /TYPE=XLS
  /VERSION=2
  /MAP
  /REPLACE
  /FIELDNAMES.
* Next steps have to happen in Excel, following the source mentioned earlier. There are two excel files which have to be manually
combined.
*The monotonic score is calculated with the formula = VAR.S(A2:AG2), and then dragging the function down the same column.
*Like this it was created variable named as "MONO_10POINT_33VAR"




GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\1. '+
    'Data preparation\0. Original datasets monotone detection\2. Monotone detection for '+
    '2021_V2\2021_V2_only_1_to_10_scale_variables_34(COMBINED).xls.xlsx'
  /SHEET=name '2021_V2_only_1_to_10_scale_vari'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
SORT CASES BY MONO_10POINT_33VAR(A).
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\1. Data preparation\0. Original datasets
monotone detection\2. Monotone detection for 2021_V2\2021_V2_imported_XLSX_and_exploration_of_monotones.sav'
  /COMPRESSED.
*Like this I can identify that case numbers 475, 1661, 4692, 4880, 4930, 7662, 9248, 10547, 10781, 12191, 16949, 4594 are the 12
monotones from the 2021 database.
```

1.1.3. Dataset: Livskvalitet 2019_V2

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Original databases\20240313.Article3.Life quality in Hallingdal 2019.sav'.
*Full list of variables in 2019_V2:
a1a c1 c2 a2 a3 a4 a5 a6 c4 c5 c6 c21 c22 c23 c24 c25 h13 skh8 skh9 h14 h15
   h16 h17 h20 h48 h49 h21 h22 h18 h19 h59 b1b14periode c7 c8 c9 c12 c13 c15 c17 h23 h24 h25 h26 h27
   h28 h29 h30 h31 h32 h33 h34 h35 b1 b2 b3 b4 b5 b6 b7 b8 b9 b10 b11 b12 b13 b14 h96 h97 h98 h99 h100
   antpers h87 sivstat h87b h92a h92 h93 skh12 skh10 h56b h55 skh11 h56 m11 m12 h1_elm_1 h1_elm_2
   h1_elm_3 h2_elm_1 h2_elm_2 h2_elm_3 h3_elm_1 h3_elm_2 h3_elm_3 h4_elm_1 h4_elm_2 h4_elm_3 h5_elm_1
```

```
  h5_elm_2 h5_elm_3 h11_elm_1 h11_elm_2 h11_elm_3 h12_elm_1 h12_elm_2 h12_elm_3 h88 h89 sysselsatt
  skh13 h90 h91 h60 h61 h62 h64 h63 h65 h66 h67 h68 skh17 h69 h70 h71 skh7 h37 h38 h39 h40 h41 h42
  skh15 skh14 h44 h85 h82 h83 h84 h86 h45 h46 hd1 hd2_elm_1 hd2_elm_2 hd2_elm_3 hd2_elm_4 hd2_elm_5
  hd2_elm_6 hd2_elm_7 hd3 h80 h81 h47 h51 h52 h53 h54 h50a h50b h50c h50d h50e h50f h50g h50h h50i
  h50j skh16 h72 h57 h94 a1b h73 h74 h75 h76 h78 h79 h592 h58 kjoenn lavinntekt aldgrupp fvekt dvekt
  vekt ant_barn innvbak reg_antpers_fam reg_famtyp reg_hushtyp bu_nus2000_niva reg_virk reg_yrke
  reg_bygg reg_rom gjeld_p gjeld_h yrkinnt_p yrkinnt_h saminnt_p saminnt_h wies_p wies_h formue_p
  formue_h ies_p h67_elm_1 h67_elm_2 h67_elm_3 h891_elm_1 h891_elm_2 h891_elm_3

*Variables which fit with a horizontal 1-10 point-s likert scale and always answered (not follow up) (36 variables):
  a1a c1 c2 c4 c5 c6 skh8 skh9 h59 b1 b2 b3 b4 b5 b6 b7 b8 b9 b10 b11 b12 b13 b14   skh11 m11 m12  skh7 skh15 skh14 h85 h86 h47
h51 h52   skh16 a1b

FREQUENCIES VARIABLES=  a1a c1 c2 c4 c5 c6 skh8 skh9 h59 b1 b2 b3 b4 b5 b6 b7 b8 b9 b10 b11 b12 b13 b14
      skh12 skh10 skh11 m11 m12 skh13  skh7 skh15 skh14 h85 h86 h47 h51 h52 h53 h54 skh16 a1b
    /ORDER=ANALYSIS.

DELETE VARIABLES
  a2 a3 a4 a5 a6   c21 c22 c23 c24 c25 h13   h14 h15
  h16 h17 h20 h48 h49 h21 h22 h18 h19   b1b14periode c7 c8 c9 c12 c13 c15 c17 h23 h24 h25 h26 h27
  h28 h29 h30 h31 h32 h33 h34 h35   h96 h97 h98 h99 h100
  antpers h87 sivstat h87b h92a h92 h93     h56b h55   h56   h1_elm_1 h1_elm_2
  h1_elm_3 h2_elm_1 h2_elm_2 h2_elm_3 h3_elm_1 h3_elm_2 h3_elm_3 h4_elm_1 h4_elm_2 h4_elm_3 h5_elm_1
  h5_elm_2 h5_elm_3 h11_elm_1 h11_elm_2 h11_elm_3 h12_elm_1 h12_elm_2 h12_elm_3 h88 h89 sysselsatt
    h90 h91 h60 h61 h62 h64 h63 h65 h66 h67 h68 skh17 h69 h70 h71   h37 h38 h39 h40 h41 h42
    h44   h82 h83 h84   h45 h46 hd1 hd2_elm_1 hd2_elm_2 hd2_elm_3 hd2_elm_4 hd2_elm_5
  hd2_elm_6 hd2_elm_7 hd3 h80 h81     h50a h50b h50c h50d h50e h50f h50g h50h h50i
  h50j   h72 h57 h94   h73 h74 h75 h76 h78 h79 h592 h58 kjoenn lavinntekt aldgrupp fvekt dvekt
  vekt ant_barn innvbak reg_antpers_fam reg_famtyp reg_hushtyp bu_nus2000_niva reg_virk reg_yrke
  reg_bygg reg_rom gjeld_p gjeld_h yrkinnt_p yrkinnt_h saminnt_p saminnt_h wies_p wies_h formue_p
  formue_h ies_p h67_elm_1 h67_elm_2 h67_elm_3 h891_elm_1 h891_elm_2 h891_elm_3 skh12 skh10  skh13 h53 h54.

SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\1. Data preparation\0. Original datasets
monotone detection\3. Monotone detection for 2019_V2\2019_V2_original_mono_1_to_10_scale.sav'
  /COMPRESSED.
*With this syntax, I create Excell files, necesary for spotting monotones.
SAVE TRANSLATE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\1. Data preparation\0.
Original datasets monotone detection\3. Monotone detection for 2019_V2\2019_V2_original_mono_1_to_10_scale.xlsx'
  /TYPE=XLS
  /VERSION=12
  /MAP
  /FIELDNAMES VALUE=NAMES
  /CELLS=VALUES
  /REPLACE.
* Next steps have to happen in Excel, following the source mentioned earlier. The monotonic score is calculated with the formula =
VAR.S(A1:AJ1), and then dragging the function down the same column.
*This variable is named as "MONO_10POINT_36VAR"



*After calculating the monotonic score in excel. Import this file to SPSS.
*2019_V2.
GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\1. '+
    'Data preparation\0. Original datasets monotone detection\3. Monotone detection for '+
    '2019_V2\2019_V2_original_mono_1_to_10_scale.xlsx'
  /SHEET=name '2019_V2_original_mono_1_to_10_s'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
 DELETE VARIABLES a1a c1 c2 c4 c5 c6 skh8 skh9 h59 b1 b2 b3 b4 b5 b6 b7 b8 b9 b10 b11 b12 b13 b14   skh11 m11 m12  skh7 skh15
skh14 h85 h86 h47 h51 h52   skh16 a1b.
```

```
COMPUTE ID=$CASENUM.
EXECUTE.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\1. Data preparation\0. Original datasets monotone detection\3. Monotone detection for 2019_V2\2019_V2_Monotone_identification.sav'
  /COMPRESSED.
*Case number  429 has a monotonic pattern of .000 and hence can be deleted
```

1.1.4. Monotone analysis summary

In dataset Livskvalitet 2020_V3:
After conducting this analysis on dataset 2020_V3, which involved looking at all 1-10 likert scale variables, except for those that came as a follow up questions (FornPartn FornBarn FornJobb FornSkole), I find 4 cases which may be considered as monotonic
In the new 2020_V3, these are case number:
Monotonic score of 0= 2339, 2410, 11601
Monotonic score of .03= 9842.
In dataset Livskvalitet 2021_2:
After conducting this analysis on dataset 2021_V2, which involved looking at all 1-10 likert scale variables, except for those that came as a follow up questions (FornPartn FornBarn FornJobb FornSkole), I find 12 cases which may be considered as monotonic
These are case numbers:
Score 0= 1661, 4692, 12191 (475, 4880, 4930, 7662, 9248, 10547, 10781, 16949) Last ones in parenthesis in fact chose don't know or don't want to answer in all questions, so we miss nothing.
Score .03= 4594
In dataset Livskvalitet 2019_V2:
With this dataset I have only considered variables with a 1-10 scale which were not follow up questions. In total 36 variables. One case was spoted with a monotonic pattern of response (answered 6 to everything):
Score 0= 429
According to Roni, S. M., & Djajadikerta, H. G. (2021). Data analysis with SPSS for survey-based research. Singapore: Springer. (P. 20-22), these cases can qualify for deleting.

1.2. Identifying potentially duplicated cases

1.2.1. Dataset: Livskvalitet 2020_V3

```
*Checking that no duplicates exist in datasets.
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Clean\Analyse\0. Datasets\Original databases\2020_V3.sav'.
* Identify Duplicate Cases.
SORT CASES BY lnr(A).
MATCH FILES
  /FILE=*
  /BY lnr
  /FIRST=PrimaryFirst
  /LAST=PrimaryLast.
DO IF (PrimaryFirst).
COMPUTE  MatchSequence=1-PrimaryLast.
ELSE.
COMPUTE  MatchSequence=MatchSequence+1.
END IF.
LEAVE  MatchSequence.
FORMATS  MatchSequence (f7).
COMPUTE  InDupGrp=MatchSequence>0.
SORT CASES InDupGrp(D).
MATCH FILES
  /FILE=*
  /DROP=PrimaryFirst InDupGrp MatchSequence.
VARIABLE LABELS  PrimaryLast 'Indicator of each last matching case as Primary'.
VALUE LABELS  PrimaryLast 0 'Duplicate Case' 1 'Primary Case'.
VARIABLE LEVEL  PrimaryLast (ORDINAL).
FREQUENCIES VARIABLES=PrimaryLast.
EXECUTE.
```

1.2.2. Dataset: Livskvalitet 2021_V2

```
*Checking that no duplicates exist in datasets.
```

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Original databases\2021_V2.sav'.
* Identify Duplicate Cases.
SORT CASES BY lnr(A).
MATCH FILES
  /FILE=*
  /BY lnr
  /FIRST=PrimaryFirst
  /LAST=PrimaryLast.
DO IF (PrimaryFirst).
COMPUTE  MatchSequence=1-PrimaryLast.
ELSE.
COMPUTE  MatchSequence=MatchSequence+1.
END IF.
LEAVE  MatchSequence.
FORMATS  MatchSequence (f7).
COMPUTE  InDupGrp=MatchSequence>0.
SORT CASES InDupGrp(D).
MATCH FILES
  /FILE=*
  /DROP=PrimaryFirst InDupGrp MatchSequence.
VARIABLE LABELS  PrimaryLast 'Indicator of each last matching case as Primary'.
VALUE LABELS  PrimaryLast 0 'Duplicate Case' 1 'Primary Case'.
VARIABLE LEVEL  PrimaryLast (ORDINAL).
FREQUENCIES VARIABLES=PrimaryLast.
EXECUTE.
```

1.2.3. Dataset: Livskvalitet 2019_V2

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Original databases\20240313.Article3.Life quality in Hallingdal 2019.sav'.
COMPUTE ID=$CASENUM.
EXECUTE.
* Identify Duplicate Cases.
SORT CASES BY  ID(A).
MATCH FILES
  /FILE=*
  /BY ID
  /FIRST=PrimaryFirst
  /LAST=PrimaryLast.
DO IF (PrimaryFirst).
COMPUTE  MatchSequence=1-PrimaryLast.
ELSE.
COMPUTE  MatchSequence=MatchSequence+1.
END IF.
LEAVE  MatchSequence.
FORMATS  MatchSequence (f7).
COMPUTE  InDupGrp=MatchSequence>0.
SORT CASES InDupGrp(D).
MATCH FILES
  /FILE=*
  /DROP=PrimaryFirst InDupGrp MatchSequence.
VARIABLE LABELS  PrimaryLast 'Indicator of each last matching case as Primary'.
VALUE LABELS  PrimaryLast 0 'Duplicate Case' 1 'Primary Case'.
VARIABLE LEVEL  PrimaryLast (ORDINAL).
FREQUENCIES VARIABLES=PrimaryLast.
EXECUTE.
```

1.3. Creating ID number variable

1.3.1. Dataset: Livskvalitet 2020_V3

```
*Creating ID numbers for every case.
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Original databases\2020_V3.sav'.

COMPUTE ID=$CASENUM.
EXECUTE.
VARIABLE LABELS ID ' Order of respondents in the original dataset files'.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2020_V3_id.sav'
  /COMPRESSED.
```

1.3.2. Dataset: Livskvalitet 2021_V2

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Original databases\2021_V2.sav'.
COMPUTE ID=$CASENUM.
EXECUTE.
VARIABLE LABELS ID ' Order of respondents in the original dataset files'.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2021_V2_id.sav'
  /COMPRESSED.
```

1.3.3. Dataset: Livskvalitet 2019_V2

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Original databases\20240313.Article3.Life quality in Hallingdal 2019.sav'.
COMPUTE ID=$CASENUM.
EXECUTE.
VARIABLE LABELS ID ' Order of respondents in the original dataset files'.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2019_V2_id.sav'
  /COMPRESSED.
```

1.4. Deleting monotones and unneeded variables, converting string variables to numeric, coding missing values.

1.4.1. Dataset: Livskvalitet 2020_V3

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Changed databases\2020_V3_id.sav'.
*Removing monotones. Original datasets monotone detection, in 2020_V3 there were 4 cases which can be considered as
monotones:
Monotonic score of 0= 2339, 2410, 11601
    Monotonic score of .03= 9842.
SELECT IF NOT ANY(ID,2339, 2410, 11601, 9842 ).
EXECUTE.

COMPUTE ID2=$CASENUM.
VARIABLE LABELS  ID2 'In 2020_V3: 2339, 2410, 11601, 9842; In 2021_V2: 1661, 4692, 12191, 475, 4880, 4930, 7662, 9248, 10547,
10781, 16949, 4594'.
EXECUTE.
DELETE VARIABLES sivilstand botid foedselsaar   innvbak_2del   LandBgr fagfelt reg_famtyp reg_hushtyp
    reg_antpers_fam reg_bygg reg_rom lnr what aar intdato Tilfreds  Optim  Eng1 Eng2 Eng3 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7
Hels1 FornHelsF FornHelsP
    Hels2a1 Hels2b Hels3a Hels3a2 EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5 Tillit
    HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c HSCL5d
```

HSCL_h HSCL5e Mater1 Mater2 Mater3 Mater4
Mater5 Kjaereste AntBarn BarnU19b BarnU19a
Kjonnident Tiltrek FornPartn FornBarn KontFam Naere FornVenn KontVenn Sosrel1 Sosrel2
Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2
FornJobb Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk
ArbPriv ArbReis VIRK_NACE1_SN07 ARB_STILLINGSPST ARB_YRKE_STYRK08 FornSkole SkoleUonsk SkolePriv
SkolePsykisk FornBol FornSted Rekr2 Bovold1 Bovold2
bruksareal p_areal Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 Disk01 Disk02 Disk03 Disk04 Disk05
Disk06 Disk07 Disk08 Disk09 Disk10 engasjert FornTid Travel Friv1 Rel1 Rel2 Aktiv2 Aktiv3
Aktiv4 Media1 Media2 Friv2 Friv3 Sivstat Antpers Trygg Bolprob1 Bolprob2 Vekt_kal FornOko Uutgift Raad1 Raad2 Raad3 Raad4 saminnt hush_saminnt ies hush_ies
kapinnt hush_kapinnt wskfrie_overf hush_wskfrie_overf yrkinnt hush_yrkinnt lavinntekt soshjmottaker selvok aksjeutbytte hush_aksjeutbytte arbledtrygd hush_arbledtrygd ba_aap ba_afp hush_ba_afp
ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp hush_ba_ny_afp barnetrygd hush_barnetrygd
BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd hush_folketrygd grunn_hjelp hush_grunn_hjelp
studielaan hush_studielaan lonn hush_lonn narinnt hush_narinnt overfor hush_overfor renteinnt
hush_renteinnt rtv_syk hush_rtv_sykep skpl_overf hush_skpl_overf sosialstonad
hush_sos_stonad studiestipend hush_studiestipend tjenpen hush_tjenpen Fol01 Fol06 Fol07 Fol02 Fol03 Fol04 Fol05 Fol08 Fol09 utd.
* 41 variables left.
* The following syntax is for converting string variables into numeric.
alter type fylke (f1).
alter type sentralitet (f1).
VARIABLE LEVEL Mening1 (SCALE) / Mening2 (SCALE) / Tilhor (SCALE) / Swls1 (SCALE) / Swls2 (SCALE) / Swls3 (SCALE) / Swls4 (SCALE) / Swls5 (SCALE) / OkoRomslig (SCALE) .
VARIABLE LEVEL Wemwbs1 (SCALE) / Wemwbs2 (SCALE) / Wemwbs3 (SCALE) / Wemwbs4 (SCALE) / Wemwbs5 (SCALE) / Wemwbs6 (SCALE) / Wemwbs7 (SCALE) .
VARIABLE LEVEL Aktiv1 (ORDINAL) / sentralitet (ORDINAL) / kvart_int (ORDINAL) / aldgrupp (ORDINAL) / innvbak (ORDINAL) .
* The following variables have system missing data.
RECODE utdnivaa (SYSMIS=9999).
EXECUTE.
missing values utdnivaa(9, 9999).
RECODE Aktiv1 (SYSMIS=9999).
EXECUTE.
missing values Aktiv1 (8, 9, 9999).
RECODE paffekt (SYSMIS=9999).
EXECUTE.
missing values paffekt (9999).
RECODE naffekt (SYSMIS=9999).
EXECUTE.
missing values naffekt (9999).
RECODE baffekt (SYSMIS=9999).
EXECUTE.
missing values baffekt (9999).
RECODE formue_08 (SYSMIS=9999).
EXECUTE.
missing values formue_08 (9999).
RECODE hush_formue_08 (SYSMIS=9999).
EXECUTE.
missing values hush_formue_08 (9999).
RECODE hush_ies_eu (SYSMIS=9999).
EXECUTE.
missing values hush_ies_eu (9999).
RECODE ant_forbr_hush_eu (SYSMIS=9999).
EXECUTE.
missing values ant_forbr_hush_eu (9999).
VALUE LABELS
paffekt

```
   0 'Very low positive affect'
   10  'Very high positive affect'.
VALUE LABELS
  naffekt
   0 'Very low negative affect'
   10  'Very high negative affect'.
VALUE LABELS
  baffekt
   -10 'Very negative affect balance'
   10  'Very positive affect balance'.
*With this syntax I set the same variable order as in 2021_V2.
add files file *
/keep alder Gift barn Seksorient_1 sysselsatt kjoenn innvbak fylke sentralitet  aldgrupp utdnivaa Mening1 Mening2 Swls1 Swls2
Swls3 Swls4 Swls5 Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4  Wemwbs5 Wemwbs6 Wemwbs7
paffekt naffekt baffekt OkoRomslig formue_08 hush_formue_08 hush_ies_eu  ant_forbr_hush_eu kvart_int Eie Tilhor Rekr Tur
Aktiv1 ID ID2  .
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2020_V3_clean.sav'
  /COMPRESSED.
```

1.4.2. Dataset: Livskvalitet 2021_V2

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Changed databases\2021_V2_id.sav'.
*Removing monotones. Remember, from step 0. Original datasets monotone detection, in 2021_V2 there were 12 cases which can be
considered as monotones:
   Score 0= 1661, 4692, 12191 (475, 4880, 4930, 7662, 9248, 10547, 10781, 16949) Last ones in parenthesis in fact chose don't know or
don't want to answer in all questions, so we miss nothing
   Score .03= 4594

SELECT IF NOT ANY(ID,1661, 4692, 12191, 475, 4880, 4930, 7662, 9248, 10547, 10781, 16949, 4594).
EXECUTE.
COMPUTE ID2=$CASENUM.
VARIABLE LABELS  ID2 'In 2020_V3: 2339, 2410, 11601, 9842; In 2021_V2: 1661, 4692, 12191, 475, 4880, 4930, 7662, 9248, 10547,
10781, 16949, 4594'.
EXECUTE.
DELETE VARIABLES Antpers Kjaereste AntBarn BarnU19b BarnU19a Kjonnident
   Tiltrek Rel2 sivilstand botid VIRK_NACE1_SN07 ARB_STILLINGSPST
   ARB_YRKE_STYRK08 foedselsaar innvbak_2del LandBgr fagfelt reg_famtyp
   reg_hushtyp reg_antpers_fam reg_bygg reg_rom utd Tilfreds Optim
   Eng1 Eng2 Eng3 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 KoronaPsyk Disk01
   Disk02 Disk03 Disk04 Disk05 Disk06 Disk07 Disk08 Disk09 Disk10 Hels1 FornHelsF FornHelsP Hels2a
   Hels2b Hels3a1 Hels3a2 Hels3b EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5 Tillit
   HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c HSCL5d
   HSCL_h HSCL5e Fol01 Fol02 Fol03 Fol04 Fol05 Fol06 Fol07 Fol08 Fol09 Mater1 Mater2 Mater3 Mater4
   Mater5 engasjert FornPartn FornBarn KontFam Naere FornVenn KontVenn Sosrel1
   Sosrel2 Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
   Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
   Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
   Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
   Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
   Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
   Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2 Arb3
   Arb3b FornJobb Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk ArbPriv
   ArbHjem ArbReis skole FornSkole SkoleUonsk SkolePriv SkolePsykisk FornOko Uutgift Raad1
   Raad2 Raad3 Raad4 aksjeutbytte hush_aksjeutbytte arbledtrygd
   hush_arbledtrygd ba_aap ba_afp hush_ba_afp ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp
   hush_ba_ny_afp barnetrygd hush_barnetrygd BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd
   hush_folketrygd grunn_hjelp hush_grunn_hjelp studielaan hush_studielaan lonn hush_lonn narinnt
   hush_narinnt overfor hush_overfor renteinnt hush_renteinnt rtv_syk hush_rtv_sykep saminnt
   hush_saminnt skpl_overf hush_skpl_overf sosialstonad hush_sos_stonad studiestipend
   hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt hush_kapinnt wskfrie_overf
   hush_wskfrie_overf yrkinnt hush_yrkinnt lavinntekt
   soshjmottaker selvok FornBol FornSted Rekr2 Trygg Bovold1 Bovold2 Bolprob1
```

```
   Bolprob2 bruksareal p_areal Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid Travel Friv1 Rel1
   Aktiv2 Aktiv3 Aktiv4 Media1 Media2 Friv2 Friv3 lnr what Vekt_kal aar intdato.
* 41 variables left.
*Variables mantained:
alder kjoenn aldgrupp utdnivaa kvart_int innvbak fylke sentralitet Mening1 Mening2 Swls1 Swls2 Swls3 Swls4 Swls5 Wemwbs1
Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7
paffekt naffekt baffekt Gift barn Seksorient_1 sysselsatt OkoRomslig formue_08 hush_formue_08 hush_ies_eu ant_forbr_hush_eu
Eie Tilhor Rekr Tur Aktiv1 ID ID2
* The following syntax is for converting string variables into numeric.
alter type fylke (f1).
alter type sentralitet (f1).
VARIABLE LEVEL Mening1 (SCALE)  / Mening2 (SCALE) /  Tilhor (SCALE) / Swls1 (SCALE) / Swls2 (SCALE) / Swls3 (SCALE) /
Swls4 (SCALE) / Swls5 (SCALE)  / OkoRomslig (SCALE).
VARIABLE LEVEL Wemwbs1 (SCALE)  / Wemwbs2 (SCALE)  / Wemwbs3 (SCALE)  / Wemwbs4 (SCALE)  / Wemwbs5 (SCALE)  /
Wemwbs6 (SCALE)  / Wemwbs7 (SCALE).
VARIABLE LEVEL Aktiv1 (ORDINAL)  / sentralitet (ORDINAL)  /   kvart_int (ORDINAL)  /   aldgrupp (ORDINAL)  /   innvbak
(ORDINAL).
* The following variables have system missing data.
RECODE utdnivaa (SYSMIS=9999).
EXECUTE.
missing values utdnivaa(9, 9999).
RECODE Aktiv1 (SYSMIS=9999).
EXECUTE.
missing values Aktiv1 (8, 9, 9999).
RECODE paffekt (SYSMIS=9999).
EXECUTE.
missing values paffekt (9999).
RECODE naffekt (SYSMIS=9999).
EXECUTE.
missing values naffekt (9999).
RECODE baffekt (SYSMIS=9999).
EXECUTE.
missing values baffekt (9999).
RECODE formue_08 (SYSMIS=9999).
EXECUTE.
missing values formue_08 (9999).
RECODE hush_formue_08 (SYSMIS=9999).
EXECUTE.
missing values hush_formue_08 (9999).
RECODE hush_ies_eu (SYSMIS=9999).
EXECUTE.
missing values hush_ies_eu (9999).
RECODE ant_forbr_hush_eu (SYSMIS=9999).
EXECUTE.
missing values ant_forbr_hush_eu (9999).
VALUE LABELS
  paffekt
   0 'Very low positive affect'
   10  'Very high positive affect'.
VALUE LABELS
  naffekt
   0 'Very low negative affect'
   10  'Very high negative affect'.
VALUE LABELS
  baffekt
   -10 'Very negative affect balance'
   10  'Very positive affect balance'.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2021_V2_clean.sav'
  /COMPRESSED.
```

1.4.3. Dataset: Livskvalitet 2019_V2

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
```

```
   'Datasets\Changed databases\2019_V2_id.sav'.
*Removing monotones. Remember, from step 0. Original datasets monotone detection, in 2021_V2 there were 12 cases which can be considered as monotones:
   Score 0= 429

SELECT IF NOT ANY(ID,429).
EXECUTE.

COMPUTE ID2=$CASENUM.
VARIABLE LABELS  ID2 'In 2020_V3: 2339, 2410, 11601, 9842; In 2021_V2: 1661, 4692, 12191, 475, 4880, 4930, 7662, 9248, 10547, 10781, 16949, 4594; In 2019_V2: 429'.
EXECUTE.
DELETE VARIABLES c6 c21 c22 c23 c24 c25 h13 skh8 skh9 h14 h15     h16 h17 h20 h48 h49 h21 h22 h18 h19 h59 b1b14periode c7 c8 c9 c12 c13 c15 c17 h23 h24 h25 h26 h27 h28 h29 h30 h31 h32 h33 h34 h35 h96 h97 h98 h99 h100
  antpers sivstat h87b h92a h92 skh12 skh10 h56b h55 skh11 h56 m11 m12 h1_elm_1 h1_elm_2     h1_elm_3 h2_elm_1 h2_elm_2 h2_elm_3 h3_elm_1 h3_elm_2 h3_elm_3 h4_elm_1 h4_elm_2 h4_elm_3 h5_elm_1     h5_elm_2 h5_elm_3
 h11_elm_1 h11_elm_2 h11_elm_3 h12_elm_1 h12_elm_2 h12_elm_3     skh13 h90 h91 h60 h61 h62 h64 h63 h65 h66 h67 h68 skh17 h69 h70 h71 skh7 h37 h39 h40 h41 h42     skh15 skh14 h83 h86 h45 h46 hd1 hd2_elm_1 hd2_elm_2 hd2_elm_3 hd2_elm_4 hd2_elm_5     hd2_elm_6 hd2_elm_7 hd3 h80 h81 h47 h51 h52 h53 h54 h50a h50b h50c h50d h50e h50f h50g h50h h50i     h50j skh16 h72 h57 h94 h74 h75 h76 h78 h79 h592 h58  lavinntekt  fvekt dvekt  vekt
reg_antpers_fam reg_famtyp reg_hushtyp  reg_virk reg_yrke     reg_bygg reg_rom gjeld_p gjeld_h h67_elm_1 h67_elm_2 h67_elm_3 h891_elm_1 h891_elm_2 h891_elm_3 a1a c4
c5 b9 b10 b11 b13 b14 a1b h88 h89 .
 * 41 variables left.
*Variables mantained:
c1 c2 a2 a3 a4 a5 a6 b1 b2 b3 b4 b5 b6 b7 b8 b12 h87 h93 sysselsatt h38 h44 h85 h82 h84 h73 kjoenn aldgrupp ant_barn innvbak bu_nus2000_niva yrkinnt_p yrkinnt_h saminnt_p saminnt_h wies_p wies_h formue_p formue_h ies_p ID ID2

RENAME VARIABLES (c1 = Mening1).
RENAME VARIABLES (c2 = Mening2).
RENAME VARIABLES (h85 = Tilhor).
RENAME VARIABLES (a2 = Swls1).
RENAME VARIABLES (a3 = Swls2).
RENAME VARIABLES (a4 = Swls3).
RENAME VARIABLES (a5 = Swls4).
RENAME VARIABLES (a6 = Swls5).
RENAME VARIABLES (h38 = OkoRomslig).
RENAME VARIABLES (h73 = Aktiv1).
RENAME VARIABLES (bu_nus2000_niva = utdnivaa).
RENAME VARIABLES (b1 = Fol01).
RENAME VARIABLES (b2 = Fol02).
RENAME VARIABLES (b3 = Fol03).
RENAME VARIABLES (b4 = Fol04).
RENAME VARIABLES (b5 = Fol05).
RENAME VARIABLES (b6 = Fol06).
RENAME VARIABLES (b7 = Fol07).
RENAME VARIABLES (b8 = Fol08).
RENAME VARIABLES (b12 = Fol09).
RENAME VARIABLES (h44 = Eie).
RENAME VARIABLES (h87 = Gift).
RENAME VARIABLES (h93 = Seksorient_1).
RENAME VARIABLES (sysselsatt = Employment).
RENAME VARIABLES (H82 = RA).
RENAME VARIABLES (H84 = HA).
RENAME VARIABLES (aldgrupp = AgeCat2).
VARIABLE LEVEL Mening1 (SCALE)  / Mening2 (SCALE) /  Tilhor (SCALE) / Swls1 (SCALE) / Swls2 (SCALE) / Swls3 (SCALE) / Swls4 (SCALE) / Swls5 (SCALE)  / OkoRomslig (SCALE).
VARIABLE LEVEL Fol01 (SCALE)  / Fol02 (SCALE) /  Fol03 (SCALE) / Fol04 (SCALE) / Fol05 (SCALE) / Fol06 (SCALE) / Fol07 (SCALE) / Fol08 (SCALE)  / Fol09 (SCALE).
VARIABLE LEVEL Aktiv1 (ORDINAL)  /   AgeCat2 (ORDINAL)  /  utdnivaa (ORDINAL)  /  innvbak (ORDINAL).
* The following variables have system missing data.
RECODE ant_barn (SYSMIS= 999999999999).
EXECUTE.
RECODE utdnivaa (SYSMIS= 999999999999).
EXECUTE.
```

```
RECODE yrkinnt_p (SYSMIS= 999999999999).
EXECUTE.
RECODE yrkinnt_h (SYSMIS= 999999999999).
EXECUTE.
RECODE saminnt_p (SYSMIS= 999999999999).
EXECUTE.
RECODE saminnt_h (SYSMIS= 999999999999).
EXECUTE.
RECODE wies_p (SYSMIS= 999999999999).
EXECUTE.
RECODE wies_h (SYSMIS= 999999999999).
EXECUTE.
RECODE formue_p (SYSMIS= 999999999999).
EXECUTE.
RECODE formue_h (SYSMIS= 999999999999).
EXECUTE.
RECODE ies_p (SYSMIS= 999999999999).
EXECUTE.
missing values  Mening1 (98, 99).
missing values  Mening2 (98, 99).
missing values  Fol01 (98, 99).
missing values  Fol02 (98, 99).
missing values  Fol03 (98, 99).
missing values  Fol04 (98, 99).
missing values  Fol05 (98, 99).
missing values  Fol06 (98, 99).
missing values  Fol07 (98, 99).
missing values  Fol08 (98, 99).
missing values  Fol09 (98, 99).
missing values  Tilhor (98, 99).
missing values  Swls1 (8, 9).
missing values  Swls2 (8, 9).
missing values  Swls3 (8, 9).
missing values  Swls4 (8, 9).
missing values  Swls5 (8, 9).
missing values  Gift (8, 9).
missing values  Seksorient_1 (8, 9).
missing values  OkoRomslig (8, 9).
missing values  Eie (8, 9).
missing values  RA (8, 9).
missing values  HA (8, 9).
missing values  Aktiv1 (8, 9).
missing values  utdnivaa (4).
missing values  yrkinnt_p  (999999999999).
missing values    yrkinnt_h (999999999999).
missing values   saminnt_p   (999999999999).
missing values  saminnt_h   (999999999999).
missing values wies_p   (999999999999).
missing values   wies_h  (999999999999).
missing values    formue_p  (999999999999).
missing values  formue_h (999999999999).
missing values   ies_p  (999999999999).
RECODE Mening1 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RECODE Mening2 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RECODE Fol01 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RECODE Fol02 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RECODE Fol03 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RECODE Fol04 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RECODE Fol05 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
```

```
EXECUTE.
RECODE Fol06 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RECODE Fol07 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RECODE Fol08 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RECODE Fol09 (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RECODE Tilhor (1=0) (2=1) (3=2) (4=3) (5=4) (6=5) (7=6) (8=7) (9=8) (10=9) (11=10) (98=98) (99=99).
EXECUTE.
RENAME VARIABLES (Tilhor = PB).
VALUE LABELS
  PB
   0 'Very low PB'
   10  'Very high PB'
   98  'Dont know'
   99  'Dont wanna answer'.
RECODE Gift (3=0) (2=1) (1=1)  (8=8) (9=9) INTO Partner.
VARIABLE LABELS  Partner '0=No partner, 1=Yes partner'.
EXECUTE.
VALUE LABELS
  Partner
   0 'No partner'
   1  'Yes partner'.
RECODE Seksorient_1 (1=0) (2=1) (3=1)  (4=1) (8=8) (9=9) INTO SexOrient.
VARIABLE LABELS  SexOrient '0=Heterofile, 1=Non-heterofile'.
EXECUTE.
VALUE LABELS
  SexOrient
   0 'Heterofile'
   1  'Non-heterofile'.
RECODE Employment (2=0) (1=1).
EXECUTE.
VALUE LABELS
  Employment
   0 'Unemployed'
   1  'Employed'.
RECODE Eie (1=1) (2=1) (3=0) (8=8) (9=9) INTO Owning.
VARIABLE LABELS  Owning '0=Does not own, 1=Owns'.
EXECUTE.
VALUE LABELS
  Owning
   0 'Does not own'
   1  'Owns'.
RECODE RA (1=1) (2=0) (8=8) (9=9).
VARIABLE LABELS  RA '0=No recreation areas, 1=Has recreation areas within 200m'.
EXECUTE.
VALUE LABELS
  RA
   0 'No recreation areas'
   1  'Has recreation areas within 200m'.
RECODE HA (1=1) (2=0) (8=8) (9=9).
VARIABLE LABELS  HA '0=No hiking areas, 1=Has hiking areas within 500m'.
EXECUTE.
VALUE LABELS
  HA
   0 'No hiking areas'
   1  'Has hiking areas within 500m'.
RECODE kjoenn (1=0) (2=1)  INTO Gender.
VARIABLE LABELS  Gender '1=Females'.
EXECUTE.
VALUE LABELS
  Gender
   0 'Males'
```

```
   1  'Females'.
RECODE ant_barn  (0=0) (1=1) (2=1) (3=1)  INTO Children.
VARIABLE LABELS  Children '0=No Children, 1=Yes Children'.
EXECUTE.
VALUE LABELS
  Children
   0 'No Children'
   1  'Yes Children'.
RECODE innvbak  (2=0) (1=1)  INTO Immigrant_background.
VARIABLE LABELS  Immigrant_background '0=Norwegian background, 1=Yes Immigrant background, both 1st and 2nd
generation'.
EXECUTE.
VALUE LABELS
  Immigrant_background
   0 'Norwegian background'
   1  'Yes Immigrant background, both 1st and 2nd generation'.
RECODE utdnivaa (1=1) (2=2) (3=3) (4=9)  INTO Education.
VARIABLE LABELS  Education 'Education modified from utdnivaa'.
EXECUTE.
VALUE LABELS
  Education
   1 'Below high school(No education or pre-school level + Barneskole + Ungdomskule)'
   2 'High school (Videregående grunnutd + videregående avsluttende)'
   3  'Over high school (Fagskolenivå/påbygging til videregående+Universitet/høgskule1+Universitet/høgskule2+Forskerlv)'
   9  'Unregistered. Uoppgitt utdannning'.
missing values   Education (9).

RECODE Aktiv1  (1=6) (2=5) (3=4) (4=3) (5=2) (6=1) (8=8) (9=9)  INTO PA.
VARIABLE LABELS  PA '6 levels moderate-to-vigorous intensity leisure time physical activity frequency (from low-to-high)'.
EXECUTE.
VALUE LABELS
  PA
   1 'Never'
   2 'More seldomly'
   3  'Some times a year'
   4  'Monthly'
   5  'Weekly'
   6  'Daily'
   8  'Dont know'
   9  'Dont wanna answer'.
COMPUTE paffekt=(Fol01  + Fol06  + Fol07 ) / 3.
EXECUTE.
VALUE LABELS
  paffekt
   0 'Very low positive affect'
   10  'Very high positive affect'.
RECODE paffekt (SYSMIS= 999999999999).
EXECUTE.
missing values  paffekt (999999999999).
COMPUTE naffekt=(Fol02  +  Fol03  + Fol04 + Fol05 +  Fol08 + Fol09 ) / 6.
EXECUTE.
VALUE LABELS
  naffekt
   0 'Very low negative affect'
   10  'Very high negative affect'.
RECODE naffekt (SYSMIS= 999999999999).
EXECUTE.
missing values   naffekt  (999999999999).
COMPUTE BalA= paffekt  -  naffekt.
EXECUTE.
RECODE BalA (SYSMIS= 999999999999).
EXECUTE.
VALUE LABELS
  BalA
   -10 'Very negative affect balance'
```

```
   10  'Very positive affect balance'.
missing values  BalA (999999999999).
COMPUTE SWL=(Swls1  + Swls2  + Swls3 + Swls4 + Swls5 ) / 5.
EXECUTE.
VALUE LABELS
  SWL
   1 'Very low SWL'
   7  'Very high SWL'.
RECODE SWL (SYSMIS= 999999999999).
EXECUTE.
missing values  SWL (999999999999).
COMPUTE MIL=(Mening1  + Mening2 ) / 2.
EXECUTE.
VALUE LABELS
  MIL
   0 'Very low MIL'
   10  'Very high MIL'.
RECODE MIL (SYSMIS= 999999999999).
EXECUTE.
missing values  MIL (999999999999).
DELETE VARIABLES Mening1 Mening2 Swls1 Swls2 Swls3 Swls4 Swls5 Fol01 Fol02 Fol03 Fol04 Fol05
   Fol06 Fol07 Fol08 Fol09 Gift Seksorient_1   Eie  Aktiv1 kjoenn   ant_barn innvbak utdnivaa.

*With this syntax I set the same variable order as in the second version of the combined dataset 2020_2021.
add files file *
/keep ID ID2  Immigrant_background  AgeCat2 Gender SexOrient  Partner Children  Education Employment Owning OkoRomslig
RA HA PA PB SWL paffekt naffekt BalA MIL yrkinnt_p yrkinnt_h  saminnt_p saminnt_h wies_p wies_h formue_p formue_h ies_p.
variable width ID to ies_p (8).
formats ID to ies_p (f8.2).


 SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\Article3.2019(20.08.2024).sav'
 /COMPRESSED.
*****************
DELETE VARIABLES ID Children paffekt naffekt  yrkinnt_p yrkinnt_h saminnt_p saminnt_h wies_p wies_h formue_p formue_h
ies_p.
RENAME VARIABLES (ID2 = ID).
RENAME VARIABLES (AgeCat2 = Age).
RENAME VARIABLES (OkoRomslig = Economy).
RENAME VARIABLES (Immigrant_background = Immigration).
VARIABLE LEVEL PA (ORDINAL).
RECODE Age (SYSMIS= 9).
EXECUTE.
RECODE SexOrient (SYSMIS= 9).
EXECUTE.
missing values  Age (9).
missing values  SexOrient  (8, 9).
VALUE LABELS
  SexOrient
   0 'Heterofile'
  1 'Another'
   8 'Refusal'
   9 'Dont know' .
missing values  Partner  (8, 9).
VALUE LABELS
  Partner
   0 'No partner'
  1 'Yes partner'
   8 'Refusal'
   9 'Dont know' .
missing values  PA  (8, 9).
missing values  Employment  (8, 9).
VALUE LABELS
  Employment
```

```
   0 'No employment'
   1 'Yes employment'
   8 'Refusal'
   9 'Dont know' .
RECODE Education (SYSMIS= 9999).
EXECUTE.
VALUE LABELS
  Education
   1 'Below high school(No education or pre-school level + Barneskole + Ungdomskule)'
   2 'High school (Videregående grunnutd + videregående avsluttende)'
   3  'Over high school (Fagskolenivå/påbygging til videregående+Universitet/høgskule1+Universitet/høgskule2+Forskerlv)'
   9  'Unregistered. Uoppgitt utdannning'
   9999 'System missing' .
missing values  Education  (9, 9999).
missing values  Owning (8, 9).
VALUE LABELS
  Owning
   0 'Renting or disposing on a different way'
   1 'Yes owning'
   8 'Refusal'
   9 'Dont know' .
missing values  Economy (8, 9).
VALUE LABELS
  Economy
   1 'Svært vanskelig'
   2 'Vanskelig'
   3 'Forholdsvis vanskelig'
   4 'Forholdsvis lett'
   5 'Lett'
   6 'Svært lett'
   8 'Refusal'
   9 'Dont know' .
VALUE LABELS
  RA
   0 'No Recreation areas'
   1 'Yes Recreation areas'
   8 'Refusal'
   9 'Dont know' .
VALUE LABELS
  HA
   0 'No Hiking areas'
   1 'Yes Hiking areas'
   8 'Refusal'
   9 'Dont know' .
VALUE LABELS
  PA
   1 'Never'
   2 'More seldomly'
   3 'Some times a year'
   4 'Monthly'
   5 'Weekly'
   6 'Daily'
   8 'Refusal'
   9 'Dont know' .
VALUE LABELS
  PB
   0 'No belonging'
  10 'Strong belonging'
   98 'Refusal'
   99 'Dont know' .
RECODE SWL  (999999999999=99).
EXECUTE.
RECODE BalA  (999999999999=9999).
EXECUTE.
RECODE MIL   (999999999999=99).
```

```
EXECUTE.
missing values  SWL (99).
missing values  BalA (9999).
missing values  MIL (99).
VALUE LABELS
  SWL
   1 'Very unsatisfied'
  7 'Very satisfied'
   99 'Missing in computation. Some item was not responded' .
VALUE LABELS
  BalA
   -10 'Very negative affect balance'
  10 'Very positive affect balance'
   9999 'Missing' .
VALUE LABELS
  MIL
   0 'No meaning in life at all'
  10 'Very meaningful life'
   99 'Missing in computation. Either Mening1 or Mening2 or both are missing' .
 SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\Article3.2019(20.08.2024).sav'
 /COMPRESSED.
*Data exploration
FREQUENCIES VARIABLES=  Immigration Age Gender SexOrient Partner Education Employment Owning Economy RA HA PA
PB SWL BalA MIL
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN MEDIAN MODE SUM SKEWNESS SESKEW KURTOSIS SEKURT
 /HISTOGRAM NORMAL
 /ORDER=ANALYSIS.
GRAPH
 /BAR(SIMPLE)=COUNT BY Immigration.
GRAPH
 /BAR(SIMPLE)=COUNT BY Age.
GRAPH
 /BAR(SIMPLE)=COUNT BY Gender.
GRAPH
 /BAR(SIMPLE)=COUNT BY SexOrient.
GRAPH
 /BAR(SIMPLE)=COUNT BY Partner.
GRAPH
 /BAR(SIMPLE)=COUNT BY Education.
GRAPH
 /BAR(SIMPLE)=COUNT BY Employment.
GRAPH
 /BAR(SIMPLE)=COUNT BY Owning.
GRAPH
 /BAR(SIMPLE)=COUNT BY Economy.
GRAPH
 /BAR(SIMPLE)=COUNT BY HA.
GRAPH
 /BAR(SIMPLE)=COUNT BY RA.
GRAPH
 /BAR(SIMPLE)=COUNT BY PA.
 GRAPH
 /BAR(SIMPLE)=COUNT BY PB.
GRAPH
 /BAR(SIMPLE)=COUNT BY SWL.
GRAPH
 /BAR(SIMPLE)=COUNT BY BalA.
GRAPH
 /BAR(SIMPLE)=COUNT BY MIL.
EXAMINE VARIABLES= PB SWL BalA MIL
 /PLOT BOXPLOT HISTOGRAM NPPLOT
 /COMPARE VARIABLES
 /STATISTICS DESCRIPTIVES
 /CINTERVAL 95
```

```
 /MISSING LISTWISE
 /NOTOTAL.
```

1.5. Editing and pairing of variables in datasets 2020_V3 and 2021_V2

1.5.1. Dataset: Livskvalitet 2020_V3

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Changed databases\2020_V3_clean.sav'.
*Recoding of variables
*in 2020_V3, Eie needs to be simplified to be compatible with H44:
    1 Eier
    2 Eier
    3 leier eller disponerer på en annen måte
    8 refusal
    9 dont know

RECODE Eie  (1=1) (2=1) (3=2) (8=8) (9=9) (9999=9999) INTO Owning.
VARIABLE LABELS Owning 'Eier eller leier du/noen i husholdningen boligen du/dere bor i?'.
EXECUTE.
missing values Owning (8, 9).
VALUE LABELS
   Owning
    1 'Eier'
    2  'Leier eller disponerer på annen måte'
    8  'Refusal'
    9  'DontKnow'.
formats Owning (f1.0).
FREQUENCIES VARIABLES= Eie  Owning
  /ORDER=ANALYSIS.
DELETE VARIABLES Eie.
RENAME VARIABLES (Owning = Eie).
*With this syntax I recover the original order.
add files file *
/keep alder Gift barn Seksorient_1 sysselsatt kjoenn innvbak fylke sentralitet  aldgrupp utdnivaa Mening1 Mening2 Swls1 Swls2
Swls3 Swls4 Swls5 Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4  Wemwbs5 Wemwbs6 Wemwbs7
paffekt naffekt baffekt OkoRomslig formue_08 hush_formue_08 hush_ies_eu  ant_forbr_hush_eu kvart_int Eie Tilhor Rekr Tur
Aktiv1 ID ID2.
variable width alder to ID2 (8).
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2020_V3_clean_ready_to_pool.sav'
  /COMPRESSED.
```

1.5.2. Dataset: Livskvalitet 2021_V2

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Changed databases\2021_V2_clean.sav'.
variable width alder to ID2 (8).
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2021_V2_clean_ready_to_pool.sav'
  /COMPRESSED.
```

1.6. Pooling of 2020 and 2021 datasets

```
*Pooling of databases!: 2020_V3_clean_ready_to_pool; and 2021_V2_clean_ready_to_pool.
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Changed databases\2020_V3_clean_ready_to_pool.sav'.
ADD FILES /FILE=*
  /FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Changed databases\2021_V2_clean_ready_to_pool.sav'
```

```
 /IN=Survey.
VARIABLE LABELS Survey
 'Case source is C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2021_V2_clean_ready_to_pool.sav'.
EXECUTE.
VARIABLE LABELS  Survey 'Dataset. 0=2020_V3, 1=2021'.
VALUE LABELS
  Survey
   0 '2020_V3'
   1  '2021_V2'.
COMPUTE ID3=$CASENUM.
VARIABLE LABELS  ID3 'After_pooling_ID'.
EXECUTE.
variable width alder to ID3 (8).
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\Pooled_2020_V3_2021_V2.sav'
 /COMPRESSED.
```

1.7. Variable exploration: Outliers, Normality, Missing data, psychometrics

```
*Preparing the variables
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Changed databases\Pooled_2020_V3_2021_V2.sav'.
RECODE Seksorient_1  (1=0) (2=1) (3=1) (4=1) (8=8) (9=9)  INTO SexOrient.
VARIABLE LABELS  SexOrient 'Modified from Seksorient_1. 0=Hetero, 1=Another'.
EXECUTE.
variable width SexOrient (8).
missing values SexOrient (8, 9).
VALUE LABELS
  SexOrient
   0  'Heterofile'
   1 'Another'
   8  'Refusal'
   9  'DontKnow'.
FREQUENCIES VARIABLES=Seksorient_1 SexOrient
  /ORDER=ANALYSIS.
FREQUENCIES VARIABLES= utdnivaa
  /ORDER=ANALYSIS.
RECODE utdnivaa  (0=1) (1=1) (2=1) (3=2) (4=2) (5=3) (6=3) (7=3) (8=3) (9=9) (9999=9999)  INTO Education.
VARIABLE LABELS  Education 'Education modified from utdnivaa'.
EXECUTE.
variable width Education (8).
missing values Education(9, 9999).
VALUE LABELS
  Education
   1  'Below high school(No education or pre-school level + Barneskole + Ungdomskule)'
   2  'High school (Videregående grunnutd + videregående avsluttende)'
   3  'Over high school (Fagskolenivå/påbygging til videregående+Universitet/høgskule1+Universitet/høgskule2+Forskerlv)'
   9  'Unregistered. Uoppgitt utdannning'
   9999 'System missing'.
FREQUENCIES VARIABLES=utdnivaa Education
  /ORDER=ANALYSIS.
*Recoding of variables.
IF  (Mening1 < 11   & Mening2 < 11 ) MIL = (Mening1 + Mening2)/2.
VARIABLE LABELS  MIL 'Meaning in life (Mening1 or C1 +Mening2 or C2 /2)'.
EXECUTE.
RECODE MIL (SYSMIS=99).
EXECUTE.
variable width MIL (8).
missing values MIL(99).
VALUE LABELS
  MIL
   0 'No meaning in life at all'
  10  'Very meaningful life'
```

```
   99 'Missing in computation. Either Mening1 or Mening2 or both are missing'.
FREQUENCIES VARIABLES= Mening1 Mening2 MIL
  /ORDER=ANALYSIS.
DESCRIPTIVES VARIABLES=Mening1 Mening2 MIL
  /STATISTICS=MEAN STDDEV.
RELIABILITY
  /VARIABLES= Mening1 Mening2
  /SCALE(MIL)= Mening1 Mening2
  /MODEL=SPLIT
  /STATISTICS=DESCRIPTIVE SCALE.

IF  (Swls1 < 8   & Swls2 < 8 & Swls3 < 8 & Swls4 < 8 & Swls5 < 8 ) SWL = (Swls1 + Swls2  + Swls3  + Swls4  + Swls5)/5.
VARIABLE LABELS  SWL 'Satisfaction with life (Swls1 + Swls2  + Swls3  + Swls4  + Swls5)/5)'.
EXECUTE.
RECODE SWL (SYSMIS=99).
EXECUTE.
variable width SWL (8).
missing values SWL(99).
VALUE LABELS
   SWL
    1 'Very unsatisfied'
    7  'Very satisfied'
    99 'Missing in computation. Some item was not responded'.
FREQUENCIES VARIABLES= Swls1 Swls2 Swls3 Swls4 Swls5 SWL
  /ORDER=ANALYSIS.
DESCRIPTIVES VARIABLES= Swls1 Swls2 Swls3 Swls4 Swls5 SWL
  /STATISTICS=MEAN STDDEV.
RELIABILITY
  /VARIABLES= Swls1 Swls2 Swls3 Swls4 Swls5
  /SCALE(SWL)=Swls1 Swls2 Swls3 Swls4 Swls5
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE.

IF  (Wemwbs1 < 6   & Wemwbs2 < 6 & Wemwbs3 < 6 & Wemwbs4 < 6 & Wemwbs5 < 6 &  Wemwbs6 < 6  & Wemwbs7 < 6 ) MWB =
(Wemwbs1 + Wemwbs2  + Wemwbs3 + Wemwbs4 + Wemwbs5 + Wemwbs6 + Wemwbs7)/7.
VARIABLE LABELS  MWB 'Mental well-being (Wemwbs1 + Wemwbs2  + Wemwbs3 + Wemwbs4 + Wemwbs5 + Wemwbs6 +
Wemwbs7)/7)'.
EXECUTE.
RECODE MWB (SYSMIS=99).
EXECUTE.
variable width MWB (8).
missing values MWB (99).
VALUE LABELS
   MWB
    1 'Very low mental wellbeing'
    7  'Very high mental wellbeing'
    99 'Missing in computation. Some item was not responded'.
FREQUENCIES VARIABLES= Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 MWB
  /ORDER=ANALYSIS.
DESCRIPTIVES VARIABLES= Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7 MWB
  /STATISTICS=MEAN STDDEV.
RECODE kjoenn  (1=0) (2=1)   INTO Gender.
VARIABLE LABELS  Gender '1=Female'.
EXECUTE.
variable width Gender (8).
VALUE LABELS
Gender
    0  'Man'
    1  'Woman' .
FREQUENCIES VARIABLES= kjoenn Gender
  /ORDER=ANALYSIS.
RECODE aldgrupp (1=1) (2=2) (3=3) (4=4) (5=5) INTO AgeCat.
VARIABLE LABELS  AgeCat 'Age groups. 1=18-24 yo, 2=25-44 yo, 3=45-66 yo, 4=67-79 yo, 5= over 80 yo'.
EXECUTE.
variable width AgeCat (8).
```

```
VALUE LABELS
  AgeCat
   1  '18-24'
   2  '25-44'
   3  '45-66'
   4  '67-79'
   5 'Over 80' .
FREQUENCIES VARIABLES= aldgrupp AgeCat
  /ORDER=ANALYSIS.
RECODE innvbak  (1=2) (2=1) (3=0)   INTO Immigration.
VARIABLE LABELS  Immigration '0=Native, 1=2nd Gen Immigrant, 2=1st Gen Immigrant'.
EXECUTE.
variable width Immigration (8).
VALUE LABELS
 Immigration
    0  'Native'
    1  '2nd Gen Immigrant'
    2   '1st Gen Immigrant'.
FREQUENCIES VARIABLES= innvbak Immigration
  /ORDER=ANALYSIS.
RECODE Gift  (1=1) (2=1) (3=0) (8=8) (9=9)   INTO Partner.
VARIABLE LABELS Partner '0=No partner, 1=Yes partner'.
EXECUTE.
variable width Partner (8).
missing values Partner(8, 9).
VALUE LABELS
Partner
       0  'No Partner'
    1  'Yes Partner'
   8  'refusal'
   9  'dont know' .
FREQUENCIES VARIABLES= Gift Partner
  /ORDER=ANALYSIS.
RECODE barn  (1=1) (2=0)  (8=8) (9=9)   INTO Children.
VARIABLE LABELS Children '0=No Children, 1=Yes Children'.
EXECUTE.
variable width Children (8).
missing values Children(8, 9).
VALUE LABELS
Children
       0  'No Children'
    1  'Yes Children'
   8  'refusal'
   9  'dont know' .
FREQUENCIES VARIABLES= barn Children
  /ORDER=ANALYSIS.
RECODE sysselsatt  (1=1) (2=0)  (8=8) (9=9)   INTO Employment.
VARIABLE LABELS Employment '0=No Employment, 1=Yes Employment'.
EXECUTE.
variable width Employment (8).
missing values Employment(8, 9).
VALUE LABELS
Employment
       0  'No Employment'
    1  'Yes Employment'
   8  'refusal'
   9  'dont know' .
FREQUENCIES VARIABLES= sysselsatt Employment
  /ORDER=ANALYSIS.
RECODE Eie  (1=1) (2=0)  (8=8) (9=9)   INTO Owning.
VARIABLE LABELS Owning '0=Renting or disposing on a different way, 1=Yes Owning'.
EXECUTE.
variable width Owning (8).
missing values Owning(8, 9).
VALUE LABELS
```

```
Owning
      0  'Renting or disposing on a different way'
    1  'Yes Owning'
    8  'refusal'
    9  'dont know' .
FREQUENCIES VARIABLES= Eie Owning
  /ORDER=ANALYSIS.
RENAME VARIABLES (Tilhor = PB).
VARIABLE LABELS  PB 'Place belonging'.
VALUE LABELS
   PB
    0  'No belonging'
    10  'Strong belonging'
    98  'refusal'
    99  'dont know' .
FREQUENCIES VARIABLES= Aktiv1
  /ORDER=ANALYSIS.
RECODE Aktiv1 (1=6) (2=5) (3=4) (4=3) (5=2) (6=1) (8=8) (9=9) (9999=9999) INTO PA.
VARIABLE LABELS  PA '6 levels moderate-to-vigorous intensity leisure time physical activity frequency (from low-to-high) '.
EXECUTE.
variable width PA (8).
missing values PA (8, 9, 9999).
VALUE LABELS
   PA
    1  'Never'
    2  'More seldomly'
    3  'Some times a year'
    4  'Monthly'
    5  'Weekly'
    6  'Daily'
    8  'refusal'
    9  'dont know'
    9999  'System missing'.
RECODE PA (1=1) (2=2) (3=2) (4=3) (5=4) (6=5) (8=8) (9=9) (9999=9999) INTO PA2.
VARIABLE LABELS  PA2 '5 levels moderate-to-vigorous intensity leisure time physical activity frequency (from low-to-high)'.
EXECUTE.
variable width PA2 (8).
missing values PA2 (8, 9, 9999).
VALUE LABELS
   PA2
    1  'Never'
    2  'Rarely'
    3  'Monthly'
    4  'Weekly'
    5  'Daily'
    8  'refusal'
    9  'dont know'
    9999  'System missing'.
RECODE Aktiv1 (1=5) (2=4) (3=3) (4=2) (5=1) (6=0) (8=8) (9=9) (9999=9999) INTO AltPA.
VARIABLE LABELS  AltPA '6 levels moderate-to-vigorous intensity leisure time physical activity frequency (from low-to-
high).Alternative starting from 0 '.
EXECUTE.
variable width AltPA (8).
missing values AltPA (8, 9, 9999).
VALUE LABELS
   AltPA
    0  'Never'
    1  'More seldomly'
    2  'Some times a year'
    3  'Monthly'
    4  'Weekly'
    5  'Daily'
    8  'refusal'
    9  'dont know'
    9999  'System missing'.
```

```
RECODE Tur  (1=1) (2=0) (8=8) (9=9)  INTO HA.
VARIABLE LABELS  HA 'Hiking areas. 0=No'.
EXECUTE.
variable width HA (8).
missing values HA(8, 9).
VALUE LABELS
  HA
    0  'No Hiking areas'
    1  'Yes Hiking areas'
   8  'refusal'
   9  'dont know' .
FREQUENCIES VARIABLES= Tur HA
  /ORDER=ANALYSIS.
RECODE Rekr  (1=1) (2=0) (8=8) (9=9)  INTO RA.
VARIABLE LABELS  RA 'Recreation areas. 0=No'.
EXECUTE.
variable width RA (8).
missing values RA(8, 9).
VALUE LABELS
  RA
    0  'No Recreation areas'
    1  'Yes Recreation areas'
   8  'refusal'
   9  'dont know' .
FREQUENCIES VARIABLES= Rekr RA
  /ORDER=ANALYSIS.
RENAME VARIABLES (alder = AgeCon).
VARIABLE LABELS  AgeCon 'Age. Continuous variable. Age at the start of the year'.
RENAME VARIABLES (paffekt = PosA).
RENAME VARIABLES (naffekt = NegA).
RENAME VARIABLES (baffekt = BalA).
VARIABLE LEVEL AgeCat (ORDINAL)  / PA (ORDINAL)  /   PA2 (ORDINAL) / AltPA (ORDINAL) .
DELETE VARIABLES kjoenn aldgrupp  innvbak Mening1 Mening2  Swls1 Swls2 Swls3 Swls4 Swls5 Wemwbs1 Wemwbs2
Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7
   barn sysselsatt Eie Rekr Tur Aktiv1.
RECODE PA2 (1=0) (2=0.17) (3=0.67) (4=5) (5=10) (8=88) (9=99) (ELSE=Copy) INTO PACon.
VARIABLE LABELS  PACon 'Physical activity frequency. Transformed to continuous scale'.
EXECUTE.
missing values PACon(88,99,9999).
variable width PACon (8).
VALUE LABELS
  PACon
    0  'Never'
    0.17  'Rarely'
    0.67  'Monthly'
    5  'Weekly'
    10  'Daily'
    88  'refusal'
    99  'dont know'
    9999  'System missing'.
*37 variables:.
add files file *
/keep Survey  ID ID2 ID3 Immigration AgeCon AgeCat Gender SexOrient Seksorient_1 Partner Gift Children  Education utdnivaa
Employment Owning  fylke sentralitet
Okoromslig formue_08 hush_formue_08 hush_ies_eu ant_forbr_hush_eu kvart_int HA RA PA AltPA PA2 PACon PB SWL PosA
NegA BalA MWB MIL.
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\Article3(24.11.23).sav'
  /COMPRESSED.



*Exploring the variables
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\2. R.Studio Analyses\Article3(24.11.23).sav'.
```

```
FREQUENCIES VARIABLES= Survey  Immigration AgeCon AgeCat Gender SexOrient Partner   Education   Employment Owning
sentralitet  kvart_int HA RA PA PB SWL BalA MIL
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN MEDIAN MODE SUM SKEWNESS SESKEW KURTOSIS SEKURT
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
GRAPH
  /BAR(SIMPLE)=COUNT BY Survey.
GRAPH
  /BAR(SIMPLE)=COUNT BY Immigration.
GRAPH
  /BAR(SIMPLE)=COUNT BY AgeCon.
GRAPH
  /BAR(SIMPLE)=COUNT BY AgeCat.
GRAPH
  /BAR(SIMPLE)=COUNT BY Gender.
GRAPH
  /BAR(SIMPLE)=COUNT BY SexOrient.
GRAPH
  /BAR(SIMPLE)=COUNT BY Partner.
GRAPH
  /BAR(SIMPLE)=COUNT BY Education.
GRAPH
  /BAR(SIMPLE)=COUNT BY Employment.
GRAPH
  /BAR(SIMPLE)=COUNT BY owning.
GRAPH
  /BAR(SIMPLE)=COUNT BY sentralitet.
GRAPH
  /BAR(SIMPLE)=COUNT BY kvart_int.
GRAPH
  /BAR(SIMPLE)=COUNT BY HA.
GRAPH
  /BAR(SIMPLE)=COUNT BY RA.
GRAPH
  /BAR(SIMPLE)=COUNT BY PA.
  GRAPH
  /BAR(SIMPLE)=COUNT BY PB.
GRAPH
  /BAR(SIMPLE)=COUNT BY SWL.
GRAPH
  /BAR(SIMPLE)=COUNT BY BalA.
GRAPH
  /BAR(SIMPLE)=COUNT BY MIL.
EXAMINE VARIABLES= PB SWL BalA MIL
  /PLOT BOXPLOT HISTOGRAM NPPLOT
  /COMPARE VARIABLES
  /STATISTICS DESCRIPTIVES
  /CINTERVAL 95
  /MISSING LISTWISE
  /NOTOTAL.
*Trimming 5% of outliers lead to a change in mean of .2 for PB. For MIL this is even less. (For reference, scale is 0-10).
*I see that some of these variables have cases that are considered as outliers (Especially BalA and WB variables in general, but not
extreme outliers). However, all these are valid values, and they can make sense in a population-based perspective.
* Moreover, Monotonic cases have been removed, and I see that these cases tend to respond to the top or bottom of the scale. Hence,
we have taken already one step of precaution.



*Performing tests of pattern of missing
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\2. R.Studio Analyses\Article3(24.11.23).sav'.
FREQUENCIES VARIABLES= Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /ORDER=ANALYSIS.
 *No missing data or not included in analyses: Survey   ID ID2 ID3 Immigration alder Age Gender   Employment
```

```
*Variables with missing data: SexOrient Partner Education  Owning HA RA PA PB SWL BalA MIL.
RECODE SexOrient (MISSING=1) (ELSE=0) INTO SexOrient_Miss.
VARIABLE LABELS  SexOrient_Miss 'Dicotome miss or not'.
EXECUTE.
 CORRELATIONS
  /VARIABLES=SexOrient_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
RECODE Partner (MISSING=1) (ELSE=0) INTO Partner_Miss.
VARIABLE LABELS  Partner_Miss 'Dicotome miss or not'.
EXECUTE.
  CORRELATIONS
  /VARIABLES=Partner_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
*Missing edu has a weak correlation with immigration background (.376, p>.001), and with Age (.1, P>.001), and with
renting/owning  (-.181, P>.001).
RECODE Education (MISSING=1) (ELSE=0) INTO Edu_Miss.
VARIABLE LABELS  Edu_Miss 'Dicotome miss or not'.
EXECUTE.
 CORRELATIONS
  /VARIABLES=Edu_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
RECODE Owning  (MISSING=1) (ELSE=0) INTO Owning_Miss.
VARIABLE LABELS  Owning_Miss 'Dicotome miss or not'.
EXECUTE.
  CORRELATIONS
  /VARIABLES=Owning_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
RECODE HA  (MISSING=1) (ELSE=0) INTO HA_Miss.
VARIABLE LABELS  HA_Miss 'Dicotome miss or not'.
EXECUTE.
  CORRELATIONS
  /VARIABLES=HA_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
RECODE RA  (MISSING=1) (ELSE=0) INTO RA_Miss.
VARIABLE LABELS  RA_Miss 'Dicotome miss or not'.
EXECUTE.
  CORRELATIONS
  /VARIABLES=RA_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
RECODE PA  (MISSING=1) (ELSE=0) INTO PA_Miss.
VARIABLE LABELS  PA_Miss 'Dicotome miss or not'.
EXECUTE.
  CORRELATIONS
  /VARIABLES=PA_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
RECODE PB  (MISSING=1) (ELSE=0) INTO PB_Miss.
VARIABLE LABELS  PB_Miss 'Dicotome miss or not'.
EXECUTE.
  CORRELATIONS
  /VARIABLES=PB_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
```

```
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
RECODE SWL  (MISSING=1) (ELSE=0) INTO SWL_Miss.
VARIABLE LABELS  SWL_Miss 'Dicotome miss or not'.
EXECUTE.
  CORRELATIONS
  /VARIABLES=SWL_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.

RECODE BalA  (MISSING=1) (ELSE=0) INTO BalA_Miss.
VARIABLE LABELS  BalA_Miss 'Dicotome miss or not'.
EXECUTE.
  CORRELATIONS
  /VARIABLES=BalA_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
RECODE MIL  (MISSING=1) (ELSE=0) INTO MIL_Miss.
VARIABLE LABELS  MIL_Miss 'Dicotome miss or not'.
EXECUTE.
  CORRELATIONS
  /VARIABLES=MIL_Miss Survey  Immigration AgeCat Gender SexOrient Partner Education Employment Owning  sentralitet
kvart_int HA RA PA PB SWL BalA MIL
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.




***
Reporting psychometrics
***
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Changed databases\2020_V3_id.sav'.

*Removing monotones. Remember, from step 0. Original datasets monotone detection, in 2020_V3 there were 4 cases which can be
considered as monotones:
Monotonic score of 0= 2339, 2410, 11601
    Monotonic score of .03= 9842.
SELECT IF NOT ANY(ID,2339, 2410, 11601, 9842 ).
EXECUTE.
COMPUTE ID2=$CASENUM.
VARIABLE LABELS  ID2 'In 2020_V3: 2339, 2410, 11601, 9842; In 2021_V2: 1661, 4692, 12191, 475, 4880, 4930, 7662, 9248, 10547,
10781, 16949, 4594'.
EXECUTE.
DELETE VARIABLES sivilstand botid foedselsaar   innvbak_2del   LandBgr fagfelt reg_famtyp reg_hushtyp
    reg_antpers_fam reg_bygg reg_rom lnr what aar intdato Tilfreds  Optim  Eng1 Eng2 Eng3 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7
Hels1 FornHelsF FornHelsP
    Hels2a1 Hels2b Hels3a Hels3a2 EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5 Tillit
    HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c HSCL5d
    HSCL_h HSCL5e Mater1 Mater2 Mater3 Mater4
    Mater5  Kjaereste AntBarn BarnU19b BarnU19a
    Kjonnident Tiltrek FornPartn FornBarn KontFam Naere FornVenn KontVenn Sosrel1 Sosrel2
    Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
    Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
    Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
    Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
    Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
    Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
    Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2
    FornJobb Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk
    ArbPriv ArbReis VIRK_NACE1_SN07 ARB_STILLINGSPST ARB_YRKE_STYRK08 FornSkole SkoleUonsk SkolePriv
```

```
   SkolePsykisk FornBol FornSted Rekr2 Bovold1 Bovold2
   bruksareal p_areal Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 Disk01 Disk02 Disk03 Disk04 Disk05
   Disk06 Disk07 Disk08 Disk09 Disk10 engasjert FornTid Travel Friv1 Rel1 Rel2  Aktiv2 Aktiv3
   Aktiv4 Media1 Media2 Friv2 Friv3  Sivstat   Antpers Trygg Bolprob1 Bolprob2 Vekt_kal     FornOko      Uutgift  Raad1 Raad2
Raad3 Raad4     saminnt hush_saminnt  ies hush_ies
   kapinnt     hush_kapinnt wskfrie_overf hush_wskfrie_overf yrkinnt hush_yrkinnt   lavinntekt     soshjmottaker        selvok
aksjeutbytte hush_aksjeutbytte     arbledtrygd hush_arbledtrygd ba_aap ba_afp hush_ba_afp
   ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp hush_ba_ny_afp barnetrygd hush_barnetrygd
   BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd hush_folketrygd grunn_hjelp hush_grunn_hjelp
   studielaan hush_studielaan lonn hush_lonn narinnt hush_narinnt overfor hush_overfor renteinnt
   hush_renteinnt rtv_syk hush_rtv_sykep skpl_overf hush_skpl_overf sosialstonad hush_sos_stonad studiestipend
hush_studiestipend tjenpen hush_tjenpen  utd alder kjoenn aldgrupp
   utdnivaa kvart_int innvbak fylke sentralitet   Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4 Wemwbs5 Wemwbs6 Wemwbs7
paffekt naffekt baffekt Gift barn Seksorient_1
   sysselsatt OkoRomslig formue_08 hush_formue_08 hush_ies_eu ant_forbr_hush_eu Eie Tilhor Rekr Tur
   Aktiv1 ID ID2.
VARIABLE LEVEL Mening1 (SCALE)  / Mening2 (SCALE) /  Swls1 (SCALE) / Swls2 (SCALE) / Swls3 (SCALE) / Swls4 (SCALE) /
Swls5 (SCALE)
   / Fol01 (SCALE) / Fol02 (SCALE) / Fol03 (SCALE) / Fol04 (SCALE) / Fol05 (SCALE) / Fol06 (SCALE) / Fol07 (SCALE) / Fol08
(SCALE) / Fol09 (SCALE) .
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2020_V3_psychom.sav'
  /COMPRESSED.
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
   'Datasets\Changed databases\2021_V2_id.sav'.
*Removing monotones. Remember, from step 0. Original datasets monotone detection, in 2021_V2 there were 12 cases which can be
considered as monotones:
   Score 0= 1661, 4692, 12191 (475, 4880, 4930, 7662, 9248, 10547, 10781, 16949) Last ones in parenthesis in fact chose don't know or
don't want to answer in all questions, so we miss nothing
   Score .03= 4594
SELECT IF NOT ANY(ID,1661, 4692, 12191, 475, 4880, 4930, 7662, 9248, 10547, 10781, 16949, 4594).
EXECUTE.
COMPUTE ID2=$CASENUM.
VARIABLE LABELS  ID2 'In 2020_V3: 2339, 2410, 11601, 9842; In 2021_V2: 1661, 4692, 12191, 475, 4880, 4930, 7662, 9248, 10547,
10781, 16949, 4594'.
EXECUTE.
DELETE VARIABLES Antpers Kjaereste AntBarn BarnU19b BarnU19a Kjonnident
   Tiltrek Rel2 sivilstand botid VIRK_NACE1_SN07 ARB_STILLINGSPST
   ARB_YRKE_STYRK08 foedselsaar innvbak_2del LandBgr fagfelt reg_famtyp
   reg_hushtyp reg_antpers_fam reg_bygg reg_rom utd Tilfreds Optim
   Eng1 Eng2 Eng3 Mestr1 Mestr2 Mestr3 Mestr6 Mestr7 KoronaPsyk Disk01
   Disk02 Disk03 Disk04 Disk05 Disk06 Disk07 Disk08 Disk09 Disk10 Hels1 FornHelsF FornHelsP Hels2a
   Hels2b Hels3a1 Hels3a2 Hels3b EQ1 EQ2 EQ3 EQ4 EQ5 Hels5a Hels5b PHQ1 PHQ2 helseprob hscl5 Tillit
   HSCL5a HSCL_f HSCL5b HSCL_g HSCL5c HSCL5d
   HSCL_h HSCL5e  Mater1 Mater2 Mater3 Mater4
   Mater5 engasjert FornPartn FornBarn KontFam Naere FornVenn KontVenn Sosrel1
   Sosrel2 Livsh1_ELM_1 Livsh1_ELM_2 Livsh1_ELM_3 Livsh1_ELM_4 Livsh2_ELM_1 Livsh2_ELM_2 Livsh2_ELM_3
   Livsh2_ELM_4 Livsh3_ELM_1 Livsh3_ELM_2 Livsh3_ELM_3 Livsh3_ELM_4 Livsh4_ELM_1 Livsh4_ELM_2
   Livsh4_ELM_3 Livsh4_ELM_4 Livsh5_ELM_1 Livsh5_ELM_2 Livsh5_ELM_3 Livsh5_ELM_4 Livsh6_ELM_1
   Livsh6_ELM_2 Livsh6_ELM_3 Livsh6_ELM_4 Livsh7_ELM_1 Livsh7_ELM_2 Livsh7_ELM_3 Livsh7_ELM_4
   Livsh8_ELM_1 Livsh8_ELM_2 Livsh8_ELM_3 Livsh8_ELM_4 Livsh9_ELM_1 Livsh9_ELM_2 Livsh9_ELM_3
   Livsh9_ELM_4 Livsh10_ELM_1 Livsh10_ELM_2 Livsh10_ELM_3 Livsh10_ELM_4 Livsh11_ELM_1 Livsh11_ELM_2
   Livsh11_ELM_3 Livsh11_ELM_4 Livsh12_ELM_1 Livsh12_ELM_2 Livsh12_ELM_3 Livsh12_ELM_4 Arb1 Arb2 Arb3
   Arb3b FornJobb Arb4 Arb5 ArbPause ArbPavirk ArbSik ArbFysisk ArbPsykisk ArbUtvik ArbUonsk ArbPriv
   ArbHjem ArbReis skole FornSkole SkoleUonsk SkolePriv SkolePsykisk FornOko Uutgift Raad1
   Raad2 Raad3 Raad4 aksjeutbytte hush_aksjeutbytte arbledtrygd
   hush_arbledtrygd ba_aap ba_afp hush_ba_afp ba_aldersp_folketr hush_ba_aldersp_folketr ba_ny_afp
   hush_ba_ny_afp barnetrygd hush_barnetrygd BEL21_8 bel48_4_mark hush_bel48_4_mark folketrygd
   hush_folketrygd grunn_hjelp hush_grunn_hjelp studielaan hush_studielaan lonn hush_lonn narinnt
   hush_narinnt overfor hush_overfor renteinnt hush_renteinnt rtv_syk hush_rtv_sykep saminnt
   hush_saminnt skpl_overf hush_skpl_overf sosialstonad hush_sos_stonad studiestipend
   hush_studiestipend tjenpen hush_tjenpen ies hush_ies kapinnt hush_kapinnt wskfrie_overf
   hush_wskfrie_overf yrkinnt hush_yrkinnt lavinntekt
   soshjmottaker selvok FornBol FornSted Rekr2 Trygg Bovold1 Bovold2 Bolprob1
```

```
   Bolprob2 bruksareal p_areal Innflyt TrygHj1 TrygHj2 TrygHj3 TrygHj4 FornTid Travel Friv1 Rel1
   Aktiv2 Aktiv3 Aktiv4 Media1 Media2 Friv2 Friv3 lnr what Vekt_kal aar intdato alder Gift barn Seksorient_1 sysselsatt kjoenn
innvbak fylke sentralitet
   aldgrupp utdnivaa   Wemwbs1 Wemwbs2 Wemwbs3 Wemwbs4
   Wemwbs5 Wemwbs6 Wemwbs7  paffekt naffekt
   baffekt OkoRomslig formue_08 hush_formue_08 hush_ies_eu ant_forbr_hush_eu kvart_int Eie Tilhor Rekr
   Tur Aktiv1 ID ID2.
VARIABLE LEVEL Mening1 (SCALE)  / Mening2 (SCALE) /  Swls1 (SCALE) / Swls2 (SCALE) / Swls3 (SCALE) / Swls4 (SCALE) /
Swls5 (SCALE)
   / Fol01 (SCALE) / Fol02 (SCALE) / Fol03 (SCALE) / Fol04 (SCALE) / Fol05 (SCALE) / Fol06 (SCALE) / Fol07 (SCALE) / Fol08
(SCALE) / Fol09 (SCALE) .
SAVE OUTFILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2021_V2_psychom.sav'
  /COMPRESSED.
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Changed databases\2020_V3_psychom.sav'.
ADD FILES /FILE=*
  /FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. '+
    'Datasets\Changed databases\2021_V2_psychom.sav'
  /IN=Survey.
VARIABLE LABELS Survey
 'Case source is C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\0. Datasets\Changed
databases\2021_V2_psychom.sav'.
EXECUTE.
RELIABILITY
  /VARIABLES= Fol01 Fol06 Fol07
  /SCALE(PosA)=Fol01 Fol06 Fol07
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE.
RELIABILITY
  /VARIABLES= Fol02 Fol03 Fol04 Fol05 Fol08 Fol09
  /SCALE(NegA)= Fol02 Fol03 Fol04 Fol05 Fol08 Fol09
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE.
  RELIABILITY
  /VARIABLES= Swls1 Swls2 Swls3 Swls4 Swls5
  /SCALE(SWL)=Swls1 Swls2 Swls3 Swls4 Swls5
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE.
RELIABILITY
  /VARIABLES= Mening1 Mening2
  /SCALE(MIL)= Mening1 Mening2
  /MODEL=SPLIT
  /STATISTICS=DESCRIPTIVE SCALE.
```

1.8. Selection of control variables

```
*Analysis for satisfaction with life.
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\R.Studio Analyses\Article3(24.11.23).sav'.
*SWB analyses.
DATASET ACTIVATE DataSet1.
COMPUTE SWB=(SWL + BalA + MIL) / 3.
EXECUTE.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER Survey .

REGRESSION
```

```
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  Dummy.Immigration_1 Dummy.Immigration_2 Dummy.Immigration_3 .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  Immigration.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  AgeCon  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  AgeCat  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  Gender  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  SexOrient  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  Partner  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  Children  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  Dummy.Education_1  Dummy.Education_2  Dummy.Education_3  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
```

```
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  Education  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  Employment  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER    Owning  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  Dummy.Fylke_1 Dummy.Fylke_2 Dummy.Fylke_3 Dummy.Fylke_4 Dummy.Fylke_5 Dummy.Fylke_6
Dummy.Fylke_7 Dummy.Fylke_8 Dummy.Fylke_9 Dummy.Fylke_10 Dummy.Fylke_11  .

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  sentralitet .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  kvart_int  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  HA  .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  RA.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER  PA.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
```

```
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER   Dummy.PA_1 Dummy.PA_2 Dummy.PA_3 Dummy.PA_4 Dummy.PA_5 Dummy.PA_6.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER   PB.
*All predictors.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER Survey  Dummy.Immigration_1 Dummy.Immigration_2 Dummy.Immigration_3 AgeCon Gender SexOrient
Partner Children Dummy.Education_1  Dummy.Education_2  Dummy.Education_3 Employment
    Owning Dummy.Fylke_1  Dummy.Fylke_2  Dummy.Fylke_3  Dummy.Fylke_4  Dummy.Fylke_5  Dummy.Fylke_6
Dummy.Fylke_7  Dummy.Fylke_8  Dummy.Fylke_9  Dummy.Fylke_10  Dummy.Fylke_11 sentralitet kvart_int
    HA RA Dummy.PA_1 Dummy.PA_2 Dummy.PA_3 Dummy.PA_4 Dummy.PA_5 Dummy.PA_6 PB.

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER Survey  Immigration AgeCon Gender SexOrient Partner Children Education Employment Owning sentralitet
kvart_int HA RA PA PB.
 *Final selection.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SWB
  /METHOD=ENTER Survey  Immigration AgeCon Gender SexOrient Partner Education Employment sentralitet kvart_int HA RA
PA PB.
SPSSINC CREATE DUMMIES VARIABLE=fylke
ROOTNAME1=Dummy.Fylke
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO.
SPSSINC CREATE DUMMIES VARIABLE=Immigration
ROOTNAME1=Dummy.Immigration
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO.
SPSSINC CREATE DUMMIES VARIABLE=Education
ROOTNAME1=Dummy.Education
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO.
SPSSINC CREATE DUMMIES VARIABLE=PA
ROOTNAME1=Dummy.PA
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO.



*Analysis for place-belongingness.
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\R.Studio Analyses\Article3(24.11.23).sav'.
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
```

```
  /DEPENDENT PB
  /METHOD=ENTER Survey.
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER  Immigration .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER  Dummy.Immigration_1 Dummy.Immigration_2 Dummy.Immigration_3 .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER  AgeCon .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER  AgeCat .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER  Gender .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER SexOrient .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER  Partner .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
```

```
  /METHOD=ENTER  Children  .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER   Education  .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER   Dummy.Education_1  Dummy.Education_2  Dummy.Education_3 .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER   Employment  .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER  Owning  .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER  fylke .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER Dummy.Fylke_1 Dummy.Fylke_2 Dummy.Fylke_3 Dummy.Fylke_4 Dummy.Fylke_5 Dummy.Fylke_6
Dummy.Fylke_7 Dummy.Fylke_8 Dummy.Fylke_9 Dummy.Fylke_10 Dummy.Fylke_11 .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER sentralitet .

DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
```

```
  /DEPENDENT PB
  /METHOD=ENTER kvart_int .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER  HA .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER  RA.
*All of them.
    DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER Survey Immigration AgeCon Gender SexOrient Partner Children Education Employment
    Owning fylke sentralitet kvart_int HA RA.
*Just those potential moderators and sig at unadjusted analysis.
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER    Immigration  AgeCon Gender SexOrient Partner Children Education Employment Owning sentralitet
kvart_int HA RA.
    DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER    Dummy.Immigration_1 Dummy.Immigration_2 Dummy.Immigration_3   AgeCon Gender SexOrient
Partner Children Dummy.Education_1  Dummy.Education_2  Dummy.Education_3 Employment
    Owning Dummy.Fylke_1 Dummy.Fylke_2 Dummy.Fylke_3 Dummy.Fylke_4 Dummy.Fylke_5 Dummy.Fylke_6 Dummy.Fylke_7
Dummy.Fylke_8 Dummy.Fylke_9 Dummy.Fylke_10 Dummy.Fylke_11  sentralitet kvart_int HA RA.
*Ultimate model.
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PB
  /METHOD=ENTER    Immigration  AgeCon Gender SexOrient Partner  Education Employment Owning sentralitet kvart_int HA
RA.

*Analysis for physical activity (with linear regression).
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
```

```
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER Survey.
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  Immigration .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  AgeCon .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  AgeCat .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  Gender .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER SexOrient .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  Partner .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  Children .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
```

```
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  Education  .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  Employment  .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  Owning  .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  fylke .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER sentralitet .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER kvart_int .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  HA .
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER  RA.
*All of them.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
```

```
  /DEPENDENT PA
  /METHOD=ENTER Survey Immigration AgeCon Gender SexOrient Partner Children Education Employment
    Owning sentralitet kvart_int HA RA.
*Just those potential moderators and sig at unadjusted analysis.
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER   Immigration AgeCon Gender SexOrient Partner   Education Employment
    Owning sentralitet kvart_int HA RA.
*Ultimate model.
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PA
  /METHOD=ENTER   Immigration AgeCon Gender SexOrient Education
    Owning sentralitet kvart_int HA RA.


*Analysis for physical activity (with multinomial regression).
NOMREG PA (BASE=LAST ORDER=ASCENDING) WITH AgeCon
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY Survey
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY  Dummy.Immigration_2 Dummy.Immigration_3
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.

NOMREG PA (BASE=LAST ORDER=ASCENDING) BY  Gender
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY  SexOrient
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY  Partner
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
```

```
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY  Children
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY   Dummy.Education_2 Dummy.Education_3
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY   Employment
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY Owning
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY   Dummy.Fylke_1 Dummy.Fylke_2 Dummy.Fylke_3 Dummy.Fylke_4
Dummy.Fylke_5 Dummy.Fylke_6 Dummy.Fylke_7 Dummy.Fylke_8 Dummy.Fylke_9 Dummy.Fylke_10
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY  sentralitet
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY  kvart_int
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
NOMREG PA (BASE=LAST ORDER=ASCENDING)  BY HA
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.

NOMREG PA (BASE=LAST ORDER=ASCENDING) BY  RA
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
```

```
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
*All of them.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY Survey Immigration  Gender SexOrient Partner Children Education
Employment
    Owning fylke sentralitet kvart_int HA RA WITH AgeCon
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
*Adjusted.
NOMREG PA (BASE=LAST ORDER=ASCENDING) BY Dummy.Immigration_2 Dummy.Immigration_3 Gender SexOrient Partner
Children  Dummy.Education_2 Dummy.Education_3 Employment
    Owning Dummy.Fylke_1 Dummy.Fylke_2 Dummy.Fylke_3 Dummy.Fylke_4 Dummy.Fylke_5 Dummy.Fylke_6 Dummy.Fylke_7
Dummy.Fylke_8 Dummy.Fylke_9 Dummy.Fylke_10 sentralitet kvart_int HA RA WITH AgeCon
  /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
  /MODEL
  /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
  /INTERCEPT=INCLUDE
  /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.
```

1.9. Characteristics of the study samples (Quality-of-life 2020-2021)

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Code\2. '+
    'R.Studio Analyses\Article3(24.11.23).sav'.

FREQUENCIES VARIABLES=Survey Immigration AgeCon  Gender SexOrient Partner  Education Employment Owning sentralitet
kvart_int HA RA PA  PB SWL BalA MIL
  /PERCENTILES=25.0 75.0
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN MEDIAN RANGE
  /ORDER=ANALYSIS.
```

2. Main analyses

Program: R-studio performed with syntax

```
---
title: "Article 3"
output: html_document
date: "2025-10-14"
---
# Pre-steps
```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = TRUE)

rm(list = ls())
library(haven)
library(sjPlot)
library(tidyverse)
library(psych)
library(sjlabelled)
library(lavaan)

# Set working directory
setwd(dirname(rstudioapi::getActiveDocumentContext()$path))
getwd()

# Load data
data <- read_sav("Article3(24.11.23).sav")

# Look at all variables
describe(data)

# Omit rows with NA
data <- na.omit(data)

describe(data)

# Reverse NegA
data$NegA_reversed <- -as.numeric(data$NegA)
hist(data$NegA_reversed)
# Make scaled variables
data <- data %>%
  mutate(
        SWL_scaled = scale(SWL),
        PosA_scaled = scale(PosA),
        NegA_scaled = scale(NegA_reversed),
        BalA_scaled = scale(BalA),
        MWB_scaled = scale(MWB),
        MIL_scaled = scale(MIL))

data <- data %>%
  mutate(SWB = (SWL_scaled +  BalA_scaled  + MIL_scaled) / 3)

# Create a quadratic term for PA
data$PA_squared <- data$PA^2

summary(data$SWB)
hist(data$SWB)
hist(data$SWL)
hist(data$BalA)
hist(data$MIL)
hist(data$PA)
hist(data$PB)
hist(data$RA)
hist(data$HA)
hist(data$PA_squared)
```
```

```
# Look at outcome variables
Outcome <- data %>% dplyr::select(SWB,SWL,PosA,NegA_reversed,BalA,MWB,MIL)

sjp.corr(Outcome, decimals = 2, sort.corr = F, show.values=T,show.p=F, p.numeric=T, na.deletion="pairwise") +
  theme_classic(base_size=12) +
  theme(axis.text.x = element_text(angle = 45, margin=margin(t=0), hjust = 1))
rm(Outcome)

## Look at SES variables
variable.names(data)
SES <- data %>%
dplyr::select(SWB,HA,RA,PA,OkoRomslig,formue_08,hush_formue_08,hush_ies_eu,ant_forbr_hush_eu,kvart_int,Education,utdniv
aa)

# Removing labels from the dataset
SES <- SES %>%
  mutate(across(everything(), remove_label))

sjp.corr(SES, decimals = 2, sort.corr = F, show.values=T,show.p=F, p.numeric=T, na.deletion="pairwise") +
  theme_classic(base_size=12) +
  theme(axis.text.x = element_text(angle = 45, margin=margin(t=0), hjust = 1))

?sjlabelled

rm(SES)

# Select variables
variable.names(data)

data2 <- data %>%
dplyr::select(SWB,SWL,BalA,MIL,HA,RA,PA,PACon,PA_squared,PB,AgeCon,Gender,kvart_int,Education,Immigration,SexOrient,
Partner,Children,Employment,Owning,fylke,sentralitet,Survey)
data2 <- data2 %>%
  mutate(across(everything(), remove_label),
       across(everything(), as.numeric))

data2 <- data2 %>% mutate(SWB=scale(SWB),
                    SWL=scale(SWL),
                    BalA=scale(BalA),
                    MIL=scale(MIL),
                    HA=scale(HA),
                    RA=scale(RA),
                    PA=scale(PA),
                    PACon=scale(PACon),
                    PA_squared=scale(PA_squared),
                    PB=scale(PB),
                    AgeCon=scale(AgeCon),
                    Gender=scale(Gender),
                    kvart_int=scale(kvart_int),
                    Education=scale(Education),
                    Immigration=scale(Immigration),
                    SexOrient=scale(SexOrient),
                    Partner=scale(Partner),
                    Children=scale(Children),
                    Employment=scale(Employment),
                    Owning=scale(Owning),
                    fylke=scale(fylke),
                    sentralitet=scale(sentralitet),
                    Survey=scale(Survey))
sjp.corr(data2, decimals = 2, sort.corr = F, show.values=T,show.p=F, p.numeric=T, na.deletion="pairwise") +
  theme_classic(base_size=12) +
  theme(axis.text.x = element_text(angle = 45, margin=margin(t=0), hjust = 1))

describe(data2)
```

```

# Preliminary Analysis of the Subjective Wellbeing Variables (Models 0 and 0.1).
```{r}
# Model 0: HA and RA predict PA PB SWB, PA predicts SWB, PB predicts SWB.
model0 <- '
  # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA and PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
'
# Fit the model
fit0 <- sem(model0, data = data2, estimator = "MLR")
# Summarize the model
summary(fit0)
# Obtain fit indices
fit_indices0 <- fitMeasures(fit0)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indices0)
```


```{r}
variable.names(data2)
# Model 0.1, HA and RA predict PA PB SWL AB MIL, PA predicts SWL AB MIL, PB predicts SWL AB MIL.
model0.1 <- '
   # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
 # HA RA PA and PB predicting SWB (SWL, AB, MIL)
  SWL ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  BalA ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  MIL ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlations between SWB variables
  SWL ~~ BalA
  SWL ~~ MIL
  MIL ~~ BalA
'
# Fit the model
fit0.1 <- sem(model0.1, data = data2, estimator = "MLR")
# Summarize the model
summary(fit0.1)
# Obtain fit indices
fit_indices0.1 <- fitMeasures(fit0.1)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indices0.1)
```

#Preliminary Analisis of the Physical Activity Variable (Models 0 and 0.2).
```{r}
# Model 0: PA continuous treatment and linear relation to SWB.
model0 <- '
  # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
```
```

```
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # PA and PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
'
# Fit the model
fit0 <- sem(model0, data = data2, estimator = "MLR")
# Summarize the model
summary(fit0)
# Obtain fit indices
fit_indices0 <- fitMeasures(fit0)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indices0)
```

```{r}
variable.names(data2)
# Model 0.2: PA continuous treatment and quadratic relation to SWB.
model0.2 <- '
  # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # PA and PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + PA_squared
'
# Fit the model
fit0.2 <- sem(model0.2, data=data2, estimator = "MLR")
# Summarize the model
summary(fit0.2)
# Obtain fit indices
fit_indices0.2 <- fitMeasures(fit0.2)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indices0.2)
```
#Analysis of the physical activity−place-belongingness relation.
```{r}
variable.names(data2)
# Model 1: Based on M0, including now a correlation PA~~PB.
model1 <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fit1 <- sem(model1, data=data2, estimator = "MLR")
# Summarize the model
summary(fit1)
# Obtain fit indices
fit_indices1 <- fitMeasures(fit1)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indices1)
```

```{r}
inspect(fit1, "r2")
```

#Needed variables to perform the moderation analyses.
```{r}
# a moderation term Gender*hiking areas
data2$GHA <- data2$Gender*data2$HA
# Create a moderation term Gender*recreation areas
data2$GRA <- data2$Gender*data2$RA
# Create a moderation term Gender*physical activity
data2$GPA <- data2$Gender*data2$PA
# Create a moderation term Gender*place belongingness
data2$GPB <- data2$Gender*data2$PB

# Create a moderation term Economy*hiking areas
data2$EHA <- data2$kvart_int*data2$HA
# Create a moderation term Economy*recreation areas
data2$ERA <- data2$kvart_int*data2$RA
# Create a moderation term Economy*physical activity
data2$EPA <- data2$kvart_int*data2$PA
# Create a moderation term Economy*place belongingness
data2$EPB <- data2$kvart_int*data2$PB

# a moderation term Age*hiking areas
data2$AHA <- data2$AgeCon*data2$HA
# Create a moderation term Age*recreation areas
data2$ARA <- data2$AgeCon*data2$RA
# Create a moderation term Age*physical activity
data2$APA <- data2$AgeCon*data2$PA
# Create a moderation term Age*place belongingness
data2$APB <- data2$AgeCon*data2$PB

# Create a moderation term Urbanicity*hiking areas
data2$UHA <- data2$sentralitet*data2$HA
# Create a moderation term Urbanicity*recreation areas
data2$URA <- data2$sentralitet*data2$RA
# Create a moderation term Urbanicity*physical activity
data2$UPA <- data2$sentralitet*data2$PA
# Create a moderation term Urbanicity*place belongingness
data2$UPB <- data2$sentralitet*data2$PB
```

Exploration of models including Gender moderations
#GA
```{r}
variable.names(data2)
# ModelGA: Based on M1, including now moderation effects of Gender on A.
modelGA <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + GHA
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitGA <- sem(modelGA, data=data2, estimator = "MLR")
# Summarize the model
summary(fitGA)
# Obtain fit indices
fit_indicesGA <- fitMeasures(fitGA)
```

```
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesGA)
```
#GB
```{r}
variable.names(data2)
# ModelGB: Based on M1, including now moderation effects of Gender on B.
modelGB <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + GRA
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitGB <- sem(modelGB, data=data2, estimator = "MLR")
# Summarize the model
summary(fitGB)
# Obtain fit indices
fit_indicesGB <- fitMeasures(fitGB)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesGB)
```
#GC
```{r}
variable.names(data2)
# ModelGC: Based on M1, including now moderation effects of Gender on C.
modelGC <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + GHA
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitGC <- sem(modelGC, data=data2, estimator = "MLR")
# Summarize the model
summary(fitGC)
# Obtain fit indices
fit_indicesGC <- fitMeasures(fitGC)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesGC)
```
#GD
```{r}
variable.names(data2)
# ModelGD: Based on M1, including now moderation effects of Gender on D.
modelGD <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + GRA
  # HA RA PA PB predicting SWB
```

```
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitGD <- sem(modelGD, data=data2, estimator = "MLR")
# Summarize the model
summary(fitGD)
# Obtain fit indices
fit_indicesGD <- fitMeasures(fitGD)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesGD)
```

#GE

```{r}
variable.names(data2)
# ModelGE: Based on M1, including now moderation effects of Gender on E.
modelGE <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + GPA
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitGE <- sem(modelGE, data=data2 , estimator = "MLR")
# Summarize the model
summary(fitGE)
# Obtain fit indices
fit_indicesGE <- fitMeasures(fitGE)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesGE)
```

#GF

```{r}
variable.names(data2)
# ModelGF: Based on M1, including now moderation effects of Gender on F.
modelGF <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + GPB
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitGF <- sem(modelGF, data=data2, estimator = "MLR")
# Summarize the model
summary(fitGF)
# Obtain fit indices
fit_indicesGF <- fitMeasures(fitGF)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesGF)
```

#GG
```{r}
variable.names(data2)
# ModelGG: Based on M1, including now moderation effects of Gender on G.
modelGG <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + GHA
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitGG <- sem(modelGG, data=data2, estimator = "MLR")
# Summarize the model
summary(fitGG)
# Obtain fit indices
fit_indicesGG <- fitMeasures(fitGG)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesGG)
```
#GH
```{r}
variable.names(data2)
# ModelGH: Based on M1, including now moderation effects of Gender on H.
modelGH <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + GRA
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitGH <- sem(modelGH, data=data2, estimator = "MLR")
# Summarize the model
summary(fitGH)
# Obtain fit indices
fit_indicesGH <- fitMeasures(fitGH)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesGH)
```

Exploration of models including Economy moderations
#EA
```{r}
variable.names(data2)
# ModelEA: Based on M1, including now moderation effects of Economy on A.
modelEA <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + EHA
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
```

```
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitEA <- sem(modelEA, data=data2, estimator = "MLR")
# Summarize the model
summary(fitEA)
# Obtain fit indices
fit_indicesEA <- fitMeasures(fitEA)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesEA)
```

#EB

```{r}
variable.names(data2)
# ModelEB: Based on M1, including now moderation effects of Economy on B.
modelEB <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + ERA
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitEB <- sem(modelEB, data=data2, estimator = "MLR")
# Summarize the model
summary(fitEB)
# Obtain fit indices
fit_indicesEB <- fitMeasures(fitEB)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesEB)
```

#EC

```{r}
variable.names(data2)
# ModelEC: Based on M1, including now moderation effects of Economy on C.
modelEC <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + EHA
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitEC <- sem(modelEC, data=data2, estimator = "MLR")
# Summarize the model
summary(fitEC)
# Obtain fit indices
fit_indicesEC <- fitMeasures(fitEC)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesEC)
```

#ED

```{r}
```

```
variable.names(data2)
# ModelED: Based on M1, including now moderation effects of Economy on D.
modelED <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + ERA
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitED <- sem(modelED, data=data2, estimator = "MLR")
# Summarize the model
summary(fitED)
# Obtain fit indices
fit_indicesED <- fitMeasures(fitED)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesED)
```

#EE

```{r}
variable.names(data2)
# ModelEE: Based on M1, including now moderation effects of Economy on E.
modelEE <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + EPA
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitEE <- sem(modelEE, data=data2, estimator = "MLR")
# Summarize the model
summary(fitEE)
# Obtain fit indices
fit_indicesEE <- fitMeasures(fitEE)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesEE)
```

#EF

```{r}
variable.names(data2)
# ModelEF: Based on M1, including now moderation effects of Economy on F.
modelEF <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + EPB
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitEF <- sem(modelEF, data=data2, estimator = "MLR")
```

```
# Summarize the model
summary(fitEF)
# Obtain fit indices
fit_indicesEF <- fitMeasures(fitEF)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesEF)
```
#EG
```{r}
variable.names(data2)
# ModelEG: Based on M1, including now moderation effects of Economy on G.
modelEG <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + EHA
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitEG <- sem(modelEG, data=data2, estimator = "MLR")
# Summarize the model
summary(fitEG)
# Obtain fit indices
fit_indicesEG <- fitMeasures(fitEG)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesEG)
```
#EH
```{r}
variable.names(data2)
# ModelEH: Based on M1, including now moderation effects of Economy on H.
modelEH <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + ERA
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitEH <- sem(modelEH, data=data2, estimator = "MLR")
# Summarize the model
summary(fitEH)
# Obtain fit indices
fit_indicesEH <- fitMeasures(fitEH)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesEH)
```


Exploration of models including Age moderations
#AA
```{r}
variable.names(data2)
# ModelAA: Based on M1, including now moderation effects of Age on A.
```

```
modelAA <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + AHA
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitAA <- sem(modelAA, data=data2, estimator = "MLR")
# Summarize the model
summary(fitAA)
# Obtain fit indices
fit_indicesAA <- fitMeasures(fitAA)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesAA)
```

#AB

```{r}
variable.names(data2)
# ModelAB: Based on M1, including now moderation effects of Age on B.
modelAB <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + ARA
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitAB <- sem(modelAB, data=data2, estimator = "MLR")
# Summarize the model
summary(fitAB)
# Obtain fit indices
fit_indicesAB <- fitMeasures(fitAB)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesAB)
```

#AC

```{r}
variable.names(data2)
# ModelAC: Based on M1, including now moderation effects of Age on C.
modelAC <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + AHA
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitAC <- sem(modelAC, data=data2, estimator = "MLR")
# Summarize the model
summary(fitAC)
```

```
# Obtain fit indices
fit_indicesAC <- fitMeasures(fitAC)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesAC)
```
#AD
```{r}
variable.names(data2)
# ModelAD: Based on M1, including now moderation effects of Age on D.
modelAD <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + ARA
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitAD <- sem(modelAD, data=data2, estimator = "MLR")
# Summarize the model
summary(fitAD)
# Obtain fit indices
fit_indicesAD <- fitMeasures(fitAD)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesAD)
```
#AE
```{r}
variable.names(data2)
# ModelAE: Based on M1, including now moderation effects of Age on E.
modelAE <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + APA
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitAE <- sem(modelAE, data=data2, estimator = "MLR")
# Summarize the model
summary(fitAE)
# Obtain fit indices
fit_indicesAE <- fitMeasures(fitAE)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesAE)
```
#AF
```{r}
variable.names(data2)
# ModelAF: Based on M1, including now moderation effects of Age on F.
modelAF <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
```

```
 # HA RA PA PB predicting SWB
 SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + APB
 # Correlated PA and PB
 PA ~~ PB
'
# Fit the model
fitAF <- sem(modelAF, data=data2, estimator = "MLR")
# Summarize the model
summary(fitAF)
# Obtain fit indices
fit_indicesAF <- fitMeasures(fitAF)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesAF)
```

#AG

```{r}
variable.names(data2)
# ModelAG: Based on M1, including now moderation effects of Age on G.
modelAG <- '
 # HA and RA predicting PA and PB
 PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
 PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
 # HA RA PA PB predicting SWB
 SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + AHA
 # Correlated PA and PB
 PA ~~ PB
'
# Fit the model
fitAG <- sem(modelAG, data=data2, estimator = "MLR")
# Summarize the model
summary(fitAG)
# Obtain fit indices
fit_indicesAG <- fitMeasures(fitAG)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesAG)
```

#AH

```{r}
variable.names(data2)
# ModelAH: Based on M1, including now moderation effects of Age on H.
modelAH <- '
 # HA and RA predicting PA and PB
 PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
 PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
 # HA RA PA PB predicting SWB
 SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + ARA
 # Correlated PA and PB
 PA ~~ PB
'
# Fit the model
fitAH <- sem(modelAH, data=data2, estimator = "MLR")
# Summarize the model
summary(fitAH)
# Obtain fit indices
fit_indicesAH <- fitMeasures(fitAH)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesAH)
```

```

# Exploration of models including Urbanicity moderations
#UA
```{r}
variable.names(data2)
# ModelUA: Based on M1, including now moderation effects of Urbanicity on A.
modelUA <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + UHA
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitUA <- sem(modelUA, data=data2, estimator = "MLR")
# Summarize the model
summary(fitUA)
# Obtain fit indices
fit_indicesUA <- fitMeasures(fitUA)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesUA)
```
#UB
```{r}
variable.names(data2)
# ModelUB: Based on M1, including now moderation effects of Urbanicity on B.
modelUB <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + URA
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitUB <- sem(modelUB, data=data2, estimator = "MLR")
# Summarize the model
summary(fitUB)
# Obtain fit indices
fit_indicesUB <- fitMeasures(fitUB)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesUB)
```
#UC
```{r}
variable.names(data2)
# ModelUC: Based on M1, including now moderation effects of Urbanicity on C.
modelUC <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + UHA
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
```
```

```
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitUC <- sem(modelUC, data=data2, estimator = "MLR")
# Summarize the model
summary(fitUC)
# Obtain fit indices
fit_indicesUC <- fitMeasures(fitUC)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesUC)
```

#UD

```{r}
variable.names(data2)
# ModelUD: Based on M1, including now moderation effects of Urbanicity on D.
modelUD <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + URA
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitUD <- sem(modelUD, data=data2, estimator = "MLR")
# Summarize the model
summary(fitUD)
# Obtain fit indices
fit_indicesUD <- fitMeasures(fitUD)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesUD)
```

#UE

```{r}
variable.names(data2)
# ModelUE: Based on M1, including now moderation effects of Urbanicity on E.
modelUE <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + UPA
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitUE <- sem(modelUE, data=data2, estimator = "MLR")
# Summarize the model
summary(fitUE)
# Obtain fit indices
fit_indicesUE <- fitMeasures(fitUE)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesUE)
```

#UF

```{r}
```

```
variable.names(data2)
# ModelUF: Based on M1, including now moderation effects of Urbanicity on F.
modelUF <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + UPB
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitUF <- sem(modelUF, data=data2, estimator = "MLR")
# Summarize the model
summary(fitUF)
# Obtain fit indices
fit_indicesUF <- fitMeasures(fitUF)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesUF)
```

#UG

```{r}
variable.names(data2)
# ModelUG: Based on M1, including now moderation effects of Urbanicity on G.
modelUG <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + UHA
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitUG <- sem(modelUG, data=data2, estimator = "MLR")
# Summarize the model
summary(fitUG)
# Obtain fit indices
fit_indicesUG <- fitMeasures(fitUG)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesUG)
```

#UH

```{r}
variable.names(data2)
# ModelUH: Based on M1, including now moderation effects of Urbanicity on H.
modelUH <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + URA
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitUH <- sem(modelUH, data=data2, estimator = "MLR")
```

```
# Summarize the model
summary(fitUH)
# Obtain fit indices
fit_indicesUH <- fitMeasures(fitUH)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesUH)
```

#Model 2 . Model based on M1, but including those interaction terms that gave better fit than M1 (i.e., GH.AB.UCF)

```{r}
variable.names(data2)
# Model2: Based on M1, but combining only the best fitting models
model2 <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + ARA
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + UHA
  # HA RA PA PB predicting SWB
  SWB ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + GRA + UPB
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fit2 <- sem(model2, data=data2, estimator = "MLR")
# Summarize the model
summary(fit2)
# Obtain fit indices
fit_indices2 <- fitMeasures(fit2)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indices2)
```

```{r}
inspect(fit2, "r2")
```

#Model 3 . Model based on M2, but modelling SWB as SWL, BalA and MIL, and testing which paths are moderated by gender and urbanicity

```{r}
variable.names(data2)
# Model3: Based on the M2, but separating between SWB measures
model3 <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + ARA
  PB ~ HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + UHA
   # HA RA PA and PB predicting SWB (SWL, AB, MIL)
  SWL ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + GRA + UPB
  BalA ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + GRA + UPB
  MIL ~ PA + PB + HA + RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment +
sentralitet + Survey + GRA + UPB
  # Correlations between SWB variables and correlated PA and PB
  SWL ~~ BalA
  SWL ~~ MIL
  MIL ~~ BalA
  PA ~~ PB
'
# Fit the model
fit3 <- sem(model3, data=data2, estimator = "MLR")
# Summarize the model
```

```
summary(fit3)
# Obtain fit indices
fit_indices3 <- fitMeasures(fit3)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indices3)
```

```{r}
inspect(fit3, "r2")
```

Calculation of direct and indirect effects of outdoor spaces on SWB in Model 2
```{r}
variable.names(data2)
# Model2.
model2 <- '
 # HA and RA predicting PA and PB
  PA ~ a*HA + b*RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Owning + sentralitet + ARA
  PB ~ c*HA + d*RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment + Owning +
sentralitet + UHA
  # HA RA PA PB predicting SWB
  SWB ~ e*PA + f*PB + g*HA + h*RA + AgeCon + Gender + kvart_int + Education + Immigration + SexOrient + Partner + Employment
+ sentralitet + Survey + GRA + UPB
  # Correlated PA and PB
  PA ~~ PB

  # Indirect and direct effects of outdoor spaces on SWB
HA_PA_SWB:=a*e
HA_PB_SWB:=c*f
RA_PA_SWB:=b*e
RA_PB_SWB:=d*f

# HA Analysis
TOT_IND_HA:=HA_PA_SWB+HA_PB_SWB
TOTHA:= TOT_IND_HA + g
# RA Analysis
TOT_IND_RA:=RA_PA_SWB+ RA_PB_SWB
TOTRA:= TOT_IND_RA +h

#Total indirect effect of outdoor spaces on SWB (TIE)
TIE_PA:=HA_PA_SWB + RA_PA_SWB
TIE_PB:=HA_PB_SWB + RA_PB_SWB
TIE:= TIE_PA + TIE_PB

#Total direct effect of OS
TDE_OS := g + h
#Total effect
TE_OS_SWB:=TIE+TDE_OS
'

# Fit the model
fit2 <- sem(model2, data=data2, estimator = "MLR")
# Summarize the model
summary(fit2)
# Obtain fit indices
fit_indices2 <- fitMeasures(fit2)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indices2)

fit_boot <- sem(fit2, data = data2,
                se = "bootstrap",
                bootstrap = 1000)
```

```
parameterEstimates(fit_boot, boot.ci.type = "perc", standardized = TRUE)
```

#Correlation matrix.

```{r}
# Select variables
variable.names(data2)

data3 <- data2 %>%
dplyr::select(SWL,BalA,MIL,SWB,HA,RA,PA,PB,AgeCon,Gender,kvart_int,Education,Immigration,SexOrient,Partner,Employment,
Owning,sentralitet,Survey)
data2 <- data2 %>%
  mutate(across(everything(), remove_label),
         across(everything(), as.numeric))


sjp.corr(data3, decimals = 2, sort.corr = F, show.values=T,show.p=T, p.numeric=T, na.deletion="pairwise") +
  theme_classic(base_size=12) +
  theme(axis.text.x = element_text(angle = 45, margin=margin(t=0), hjust = 1))
```

```{r}
describe(data)
```

3. Figure 3

Program: SPSS performed with syntax

```
GET
  FILE='C:\Users\ANONYMOUS\OneDrive - INSTITUTION\PROJECT\Article3(24.11.23).sav'.

*Create SWB variable.
COMPUTE SWB=(SWL + BalA + MIL) / 3.
EXECUTE.

* Chart Builder.
*These figures require editing.
VARIABLE LEVEL RA (SCALE).
VARIABLE LEVEL PA (SCALE).
VARIABLE LEVEL HA (SCALE).
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=HA PB sentralitet MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE
  /FITLINE TOTAL=NO SUBGROUP=NO.
BEGIN GPL
  DATA: sentralitet=col(source(s), name("sentralitet"),
notIn("5", "4", "3", "2"), unit.category())
  GUIDE: axis(dim(1), label("Hiking areas. 0=No"))
  GUIDE: axis(dim(2), label("Place belonging"))
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("Sentralitet"))
  GUIDE: text.title(label("Scatter Plot of Place belonging by Hiking areas. 0=No by Sentralitet"))
  SCALE: cat(aesthetic(aesthetic.color.interior), include(
"1", "6"))
  ELEMENT: point(position(HA*PB), color.interior(sentralitet))
END GPL.

GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=RA PA AgeCat MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE
  /FITLINE TOTAL=NO SUBGROUP=NO.
BEGIN GPL
  DATA: AgeCat=col(source(s), name("AgeCat"),
notIn("4.00", "2.00"), unit.category())
  GUIDE: axis(dim(1), label("Recreation areas. 0=No"))
  GUIDE: axis(dim(2), label("6 levels moderate-to-vigorous intensity leisure time physical ",
    "activity frequency (from low-to-high)"))
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("Age groups. 1=18-24 yo, 2=25-44 yo, ",
    "3=45-66 yo, 4=67-79 yo, 5= over 80 yo"))
  GUIDE: text.title(label("Scatter Plot of 6 levels moderate-to-vigorous intensity leisure time ",
    "physical activity frequency (from low-to-high)  by Recreation areas. 0=No by Age groups. ",
    "1=18-24 yo, 2=25-44 yo, 3=45-66 yo, 4=67-79 yo, 5= over 80 yo"))
  SCALE: cat(aesthetic(aesthetic.color.interior), include(
"1.00", "3.00", "5.00"))
  ELEMENT: point(position(RA*PA), color.interior(AgeCat))
END GPL.

GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=RA SWL Gender MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE
  /FITLINE TOTAL=NO SUBGROUP=NO.
BEGIN GPL
  GUIDE: axis(dim(1), label("Recreation areas. 0=No"))
  GUIDE: axis(dim(2), label("SWL"))
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("1=Female"))
  GUIDE: text.title(label("Scatter Plot of SWL by Recreation areas. 0=No by 1=Female"))
  SCALE: cat(aesthetic(aesthetic.color.interior), include(
"0.00", "1.00"))
  ELEMENT: point(position(RA*SWL), color.interior(Gender))
END GPL.
```

```
VARIABLE LEVEL RA (NOMINAL).

GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=RA MIL Gender MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE
  /FITLINE TOTAL=NO SUBGROUP=NO.
BEGIN GPL
  GUIDE: axis(dim(1), label("Recreation areas. 0=No"))
  GUIDE: axis(dim(2), label("MIL"))
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("1=Female"))
  GUIDE: text.title(label("Scatter Plot of MIL by Recreation areas. 0=No by 1=Female"))
  SCALE: cat(aesthetic(aesthetic.color.interior), include(
"0.00", "1.00"))
  ELEMENT: point(position(RA*MIL), color.interior(Gender))
END GPL.
VARIABLE LEVEL RA (NOMINAL).

GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=PB MIL sentralitet MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE
  /FITLINE TOTAL=NO SUBGROUP=NO.
BEGIN GPL
  DATA: sentralitet=col(source(s), name("sentralitet"),
notIn("5", "4", "3", "2"), unit.category())
 DATA: PB=col(source(s), name("PB"),
notIn("9","8","7", "6", "5", "4", "3", "2","1"), unit.category())
  GUIDE: axis(dim(1), label("Place belonging"))
  GUIDE: axis(dim(2), label("MIL"))
  GUIDE: legend(aesthetic(aesthetic.color.interior), label("Sentralitet"))
  GUIDE: text.title(label("Scatter Plot of MIL by Place belonging by Sentralitet"))
  SCALE: cat(aesthetic(aesthetic.color.interior), include(
"1", "6"))
  ELEMENT: point(position(PB*MIL), color.interior(sentralitet))
END GPL.
```

4. Additional analysis with data from Hallingdal 2019

Program: R-studio performed with syntax
This analysis compares Model 1 with a similar model built with wellbeing data from the pilot examination in Hallingdal in 2019.

```
---
title: "Article 3"
output: html_document
date: "2025-10-16"
---
#Pre-steps
```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = TRUE)

rm(list = ls())
library(haven)
library(sjPlot)
library(tidyverse)
library(psych)
library(sjlabelled)
library(lavaan)

# Set working directory
setwd(dirname(rstudioapi::getActiveDocumentContext()$path))
getwd()

# Load data
data <- read_sav("Article3.2019(20.08.2024).sav")

# Look at all variables
describe(data)

# Omit rows with NA
data <- na.omit(data)

describe(data)

# Make scaled variables
data <- data %>%
  mutate(
        SWL_scaled = scale(SWL),
        BalA_scaled = scale(BalA),
        MIL_scaled = scale(MIL))

data <- data %>%
  mutate(SWB = (SWL_scaled +  BalA_scaled  + MIL_scaled) / 3)

summary(data$SWB)
hist(data$SWB)
hist(data$SWL)
hist(data$BalA)
hist(data$MIL)
hist(data$PA)
hist(data$PB)
hist(data$RA)
hist(data$HA)

# Look at outcome variables
Outcome <- data %>% dplyr::select(SWB,SWL,BalA,MIL)

sjp.corr(Outcome, decimals = 2, sort.corr = F, show.values=T,show.p=F, p.numeric=T, na.deletion="pairwise") +
  theme_classic(base_size=12) +
  theme(axis.text.x = element_text(angle = 45, margin=margin(t=0), hjust = 1))
```
```

```
rm(Outcome)


# Select variables
variable.names(data)

data2 <- data %>% dplyr::select(ID, Immigration, Age, Gender, SexOrient, Partner, Education, Employment, Owning,
   Economy, RA, HA, PA, PB, SWB, SWL, BalA, MIL)
data2 <- data2 %>%
  mutate(across(everything(), remove_label),
       across(everything(), as.numeric))

data2 <- data2 %>% mutate(SWB=scale(SWB),
                    SWL=scale(SWL),
                    BalA=scale(BalA),
                    MIL=scale(MIL),
                    HA=scale(HA),
                    RA=scale(RA),
                    PA=scale(PA),
                    PB=scale(PB),
                    ID=scale(ID),
                    Immigration=scale(Immigration),
                    Age=scale(Age),
                    Gender=scale(Gender),
                    SexOrient=scale(SexOrient),
                    Partner=scale(Partner),
                    Education=scale(Education),
                    Employment=scale(Employment),
                    Owning=scale(Owning),
                    Economy=scale(Economy))

sjp.corr(data2, decimals = 2, sort.corr = F, show.values=T,show.p=F, p.numeric=T, na.deletion="pairwise") +
  theme_classic(base_size=12) +
  theme(axis.text.x = element_text(angle = 45, margin=margin(t=0), hjust = 1))

describe(data2)

```

```
# MODEL 1'
```{r}
variable.names(data2)

# Model 1' = ModelH: Based on M1, but utilising the wellbeing dataset from Hallingdal 2019.
modelH <- '
 # HA and RA predicting PA and PB
  PA ~ HA + RA + Age + Gender + Economy + Education + Immigration + SexOrient + Owning
  PB ~ HA + RA + Age + Gender + Economy + Education + Immigration + SexOrient + Partner + Employment + Owning
  # HA RA PA and PB predicting SWB
  SWB ~ PA + PB + HA + RA + Age + Gender + Economy + Education + Immigration + SexOrient + Partner + Employment
  # Correlated PA and PB
  PA ~~ PB
'
# Fit the model
fitH <- sem(modelH, data=data2, estimator = "MLR")
# Summarize the model
summary(fitH)
# Obtain fit indices
fit_indicesH <- fitMeasures(fitH)
# Display fit indices
cat("Fit Indices:\n")
print(fit_indicesH)
```

```{r}
```
```

```
inspect(fitH, "r2")
```

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Raul Grau-Ruiz: Conceptualisation, Project administration, Funding acquisition, Investigation, Methodology, Software, Formal analysis, Data curation, Writing-Original Draft, Writing – Review & Editing, Visualization. Vidar Sandsaunet Ulset: Methodology, Software, Validation, Writing – Review & Editing. Gunvor Marie Dyrdal: Writing – Review & Editing. Helga Synnevåg Løvoll: Supervision, Conceptualisation, Writing – Review & Editing.

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Conflict of interest statement

The authors declare that they have no conflicts of interests.

AI statement

During the preparation of this work, Author 1 used ChatGPT (OpenAI) to gain familiarisation with the basic computing language and functions used in the R Studio program. After using ChatGPT for educational purposes, the authors produced the content (e.g., analysis scripts) independently as needed, and the scripts were fully supervised by Author 2, who is a seasoned user of R Studio. ChatGPT was also employed to refine the language and improve the clarity of the manuscript text, ensuring it adhered to academic standards. The authors take full responsibility for the content of the publication.

Data availability statement

The survey data used in this research — Pilot Survey on Quality of Life in Hallingdal, 2019 (https://doi.org/10.18712/NSD-NSD2741-V3), Quality of Life Survey 2020 (https://doi.org/10.18712/NSD-NSD2935-V3), and Quality of Life Survey 2021 (https://doi.org/10.18712/NSD-NSD2995-V2) — was obtained from the Norwegian agency for shared services in education and research (SIKT).

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