TESTING THE VALIDITY AND RELIABILITY OF THE BARRIERS TO HOME BOWEL CANCER SCREENING SCALE

A Thesis submitted by

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ABSTRACT

The purpose of this research is part of a USQ larger teamwork effort lead by Belinda Goodwin and Michael Ireland to improve outcomes in Home Bowel Cancer screening within the National Bowel Cancer Screening Program (NBCSP) to eligible Australians.

Objective: This particular thesis focuses on assessing the validity and reliability of a psychometric tool called Barriers to Bowel Cancer screening Scale (hereon BB-CanS) for measuring common barriers to home bowel cancer screening in a larger novel sample, via mailed kits dispensed to eligible Australians through the NBCSP.

Methods: Forty-nine items measuring barriers to bowel cancer screening, identified through the literature, and qualitative and quantitative research in the derivation study were presented to a large sample (*N* = 1158) of Australian NBCSP recipients age (50-74 years old). Invitees' previous screening information and demographic information was also gathered. Confirmatory factor analysis was used to assess whether the factor structure, construct validity and internal reliability of the scale remained stable in the current sample.

Results: The 'good model fit' of the BB-Cans confirmed in the current sample (RMSEA = .034, RMSEA 90% CI [.032, .036], CFI = .972, TLI = .970, SRMR = .058). Consistent with original scale results, four clear barrier types to screening (factors) were confirmed, namely *disgust* for the process of screening, *avoidance* of test outcomes, *practical*

difficulties (or challenges), and the need for greater *autonomy*. The BB-CanS also includes three stand-alone items corresponding to the most commonly-cited barriers to screening (screening outside of the program, lack of planning, misplacing the kit) in addition to the four clear and highly-correlated barrier types cited above. The scale was further refined in an effort to improve fit, with the removal of seven items; therefore a 39-item scale was retained as a final version (RMSEA = .029, RMSEA 90% CI [.027, .032], CFI = .982, TLI = .981, SRMR = .050). The 39-item brief version of the scale confirmed the scale's construct validity across age and gender groups.

Conclusions: The BB-CanS is a valid and reliable scale and the findings support the results of the 2021 derivation study by Goodwin and colleagues. Findings of the current study call to apply multi-faceted intervention strategies that address the broad range of barrier types covered by the four factors, as opt-out NBCSP participants reported significantly higher ratings across all barriers. This thesis' findings will inform the strategies design and planning of the ongoing/future initiatives that focus on promoting NBCSP participation.

Keywords: bowel cancer screening; colorectal cancer screening; cancer prevention; FOBT; scale development; risk factors; confirmatory factor analysis; psycho-oncology; population health

CERTIFICATION OF THESIS

I, Corina Galicher Roe, declare that the Master by Research Thesis entitled Testing the Validity and Reliability of the Barriers to Home Bowel Cancer Screening Scale is not more than 40,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references, and footnotes. The thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Date: 5th of January, 2023

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LIST OF ABBREVIATIONS

BB-CanS ..... Bowel Cancer Screening Scale
CFA ..... Confirmatory Factor Analysis
CFI ..... Comparative Fit Index
CI ..... Confidence Intervals
CRC .....Colorectal Cancer
EFA ..... Exploratory Factor Analysis
FIT .....Faecal Immunochemical Test
GI..... Gastro-Intestinal
GOF ..... Goodness of Fit
iFOBT.....Immunochemical Faecal Occult Blood Test
MI .....Modification Indices
NBCSP .....National Bowel Cancer Screening Program
NFI .....Normed Fit Index
PCA ..... Principal Component Analysis
RMSEA ..... Root Mean Squared Error of Approximation
SPSS.....Statistical Software Package for the Social Sciences
SRMR.....Standardised Root Mean Square Residual
TLI .....Tucker-Lewis Index

CHAPTER 1: BACKGROUND

In Australia, colorectal cancer (CRC) was the fourth most-commonly diagnosed form of cancer and the second leading cause of death by cancer in 2021 (Cancer Council Australia, 2021). Globally, it is expected that the burden of CRC, often referred to simply as bowel cancer, will increase by 60% in 2030 as a result of economic development, environmental changes (such as a more sedentary lifestyle), changes in nutritional habits, and an increase of life expectancy worldwide (Sawicki, 2021).

It is known that early diagnostic and detection of pre-cancerous abnormalities can lead to subsequent treatments that prevent advanced bowel cancer from occurring, and these can significantly improve outcomes and survival (AIHW, 2022). In Australia, through the National Bowel Cancer Screening Program (NBCSP), Australians (50-74) are mailed out an immunochemical faecal occult blood test (iFOBT), also referred to as the faecal immunochemical test (FIT). The NBCSP targeted 50-74 years for routine population-based screening based on the evidence on health benefits, harms, and cost-effectiveness of the screening (as per the Clinical practices guidelines approved by the Chief Executive Officer of the National Health and Medical Research Council (NHMRC) (Cancer Council Australia, 2017). The NBCSP program has been running since 2006, and since 2020, all Australians between the age of 50 and 74 are delivered a bowel cancer screening kit.

Unfortunately, 40% of recipients take part in the program by completing and returning the mailed-out bowel cancer screening kit: "Of those who were invited to participate in the NBCSP between 1 January 2018 and 31 December 2019, 43.5% undertook screening" (AIHW, 2021). In 2020, 7% of NBCSP participants returned a positive iFOBT test (AIHW, 2022). Given that over the 2019-2021 timeframe, 5.8 million people were invited (AIHW, 2022), and based on the 7% positive iFOBT result to blood detection in the samples, we can roughly estimate that 200,000 people with positive result could be missed annually. Given that only 61.8% follow up with further testing (AIHW 2022), 123,600 people miss out on a chance to be treated for bowel cancer while they are still asymptomatic.

It is therefore important for researchers to rigorously assess the barriers that prevent people from participating in the bowel cancer screening program in order to mitigate them, and consequently, increase screening participation rates. The current research attempts to contribute to efforts to increase the uptake of National Bowel Cancer Screening Program (NBCSP) by cross-validating the psychometric properties of a newly developed, self-report tool called Barriers to Bowel Cancer screening Scale (hereon BB-CanS) by Goodwin and colleagues (2021) designed for measuring individual differences in the perception of barriers associated with participation in the NBCSP. These barriers could be categorised in broad domains previously highlighted in the literature (i.e., they could be practical, attitudinal, or psychological) and the BB-CanS can link to these domains. The current study will adopt a confirmatory factor

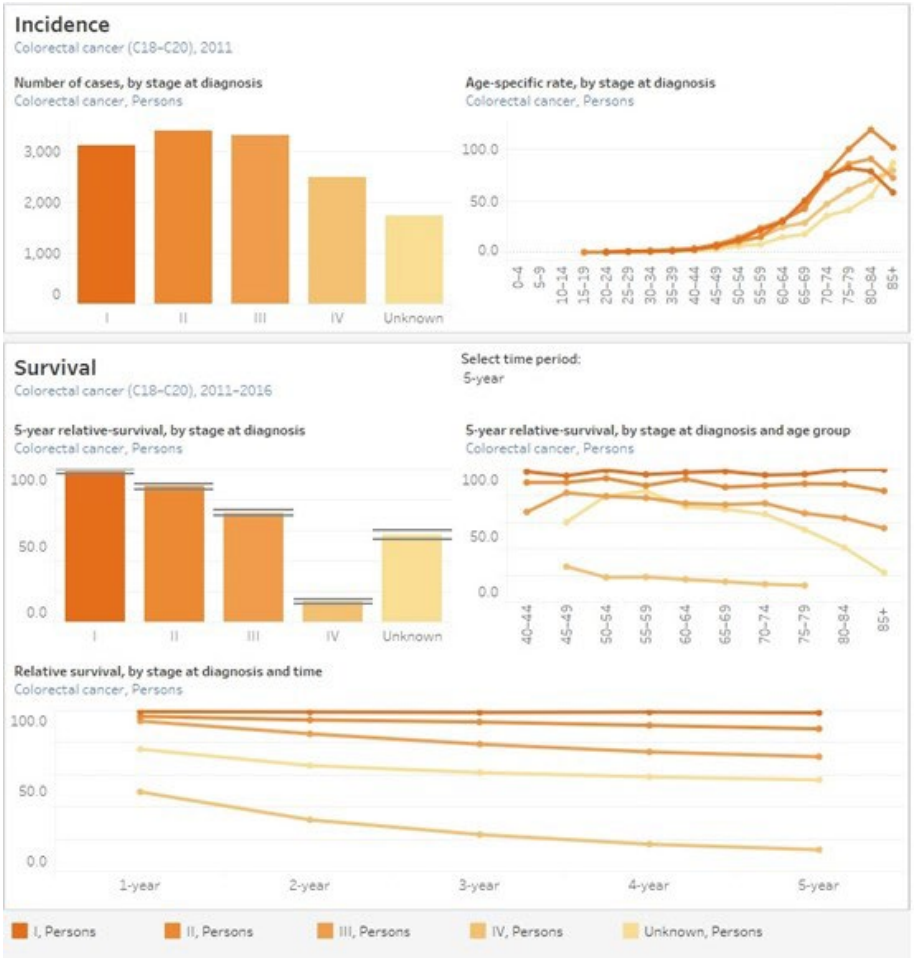
analytic approach, which seeks to test how well the original factor model (disgust, avoidance, difficulty, autonomy) fits the new data.

1.1. Bowel Cancer

Colorectal cancer is cancer of the large bowel, colon, or rectum. Adenocarcinomas (the malignant evolution of previously benign adenomas also called polyps) represents over 94% of bowel cancers (AIHW, 2018). Since bowel cancer can advance without symptoms appearing, survival is strongly determined by the timing of the diagnosis. Screening and early detection can lead to higher survival rates, as early-stage cancers can be treated more successfully than late-stage cancers (Seigel et al., 2012).

Figure 1

Colorectal Cancer survival and incidence by Stage and cancer at Diagnosis in Australia (AIHW, 2022)



As you can see on the latest Australian Institute of Health and Welfare (AIHW) data available about the 5-year relative survival rate by stage at diagnostic, most people were diagnosed in early stages with a 100% survival rate in Stage 1, while persons with the more advanced stages at diagnostic had the lowest survival rate, including a huge drop in Stage 3 and 4 (AIHW, 2022).

1.2. The Burden of CRC in Australia and NBCSP screening

Although the bowel cancer incidence rate in people aged <50 years has been increasing in the past two decades (the mean age of diagnosis was 69.7 in 2012 and 68.8 years old on 2018), it remains significantly lower than the rates in people aged 50+ with most positive diagnoses (meaning the potential presence of bowel cancer) occurring between the ages of 50-74 (AIHW, 2021). The NBCSP has been shown to be an effective way of detecting and preventing bowel cancer on a population scale with the ability to improve population morbidity, health outcome and health care resources utilisation. The NBCSP program saves thousands of lives and millions of dollars in healthcare spending each year.

Bowel cancer expenditure in 2015-16 total $876 million, higher than prostate cancer, including $56 million on the National Bowel Cancer Screening program (AIHW, Health systems expenditures, 2021). While the ideal coverage would be an 80% participation rate, in a budget impact analysis conducted by Lew and colleagues (2017), a 60% participation rate would reduce annual expenditure on colorectal cancer control by AUD $2.1 billion (2015 prices) as a cumulated value in the period between 2030 and 2040 compared to no screening. It would further reduce colorectal cancer incidence and mortality (83 800 deaths) over the period 2015-40. People tested through the program whose results indicate a positive iFOBT test experience fewer complications. Their colorectal

cancers are 50% less likely to be fatal than those for people who are diagnosed outside of the program (AIHW, 2018; Ananda, 2016).

There are several test technologies available for bowel cancer screening worldwide in the either the screening program and private healthcare practices, such as colonoscopy, sigmoidoscopy, CT colonography, faecal test (iFOBT/FIT), plasma DNA test, and stool DNA test. While, worldwide, a colonoscopy is generally considered the 'gold standard' for the confirmed detection of colocteral neoplasia, there are advantages to iFOBT screening as it places less demand on limited colonoscopy resources and it can reach a wider and larger population (Schroeders, 2015, p.1638). Segnan and colleagues (2007) found that although colonoscopy is more accurate than the FOBT for detecting neoplasias and adenomas, the FOBT is more readily accepted by participants in population screening programs worldwide. Thus, the higher FOBT participation rates may counteract its lower detection capacity. In Australia, colonoscopy is not considered the 'gold standard' for population screening (due to cost and other issues). It is only used for diagnostic screening: it is used as a diagnostic tool to follow-up people with positive iFOBT results or people with symptom related to bowel cancer, or to provide surveillance for people with previous history of polyps or known family history. In Australia, the program has been shown to be an effective way of detecting and preventing bowel cancer on a population scale.

1.3. Procedure to complete a iFOBT test

A faecal occult blood test (FOBT) involves taking a minuscule sample from two separate bowel motions (faeces) using a test kit. The kit provides two sample collection tubes to be labelled (full name, date of birth, sample collection date) and a toilet liner to put over the water in the toilet bowl. Each collection tube includes a collection stick to scrap over different areas of the surface of the poo. The sample only needs to be tiny – smaller than a grain of rice. The stick is then inserted back in the collection tube and the tube shaken up and down several times. If the toilet liner sinks, the kit recipient can request a new kit. A Test Kit Helpline (1800 930 998), a program Info Line (1800 118 868), translation and interpreting service phone number (13 14 50) and a short video (https://www.health.gov.au/our-work/national-bowel-cancer-screening-program) are provided. The toilet liner can be flushed as it is biodegradable. The sample is then placed in into a zip-locked bag and kept in a cool, dry place, preferably 2–10 degrees, or in the fridge, away from food, until the second sample is taken (as early as the same day or 'as close to the first sample as they can') and until the test recipient can post the envelope. Once an eligible person completes their iFOBT, they post it to the program's pathology laboratory for analysis within 24 hours of last sample collection in the late afternoon (before 6pm) using an Australia Post mail box. Results are sent to the participant, his or her nominated general practitioner (GP), My Health Record (unless you ticked the box on your participant detail form you don't want this to happen),

and the NBCSP register. Participants with a positive result, indicating blood in their faeces (which might be a sign of bowel cancer or other bowel abnormalities), are advised to consult their GP to discuss further diagnostic testing—in most cases, a colonoscopy. Those who receive a negative result will receive their next test in 2 years' time.

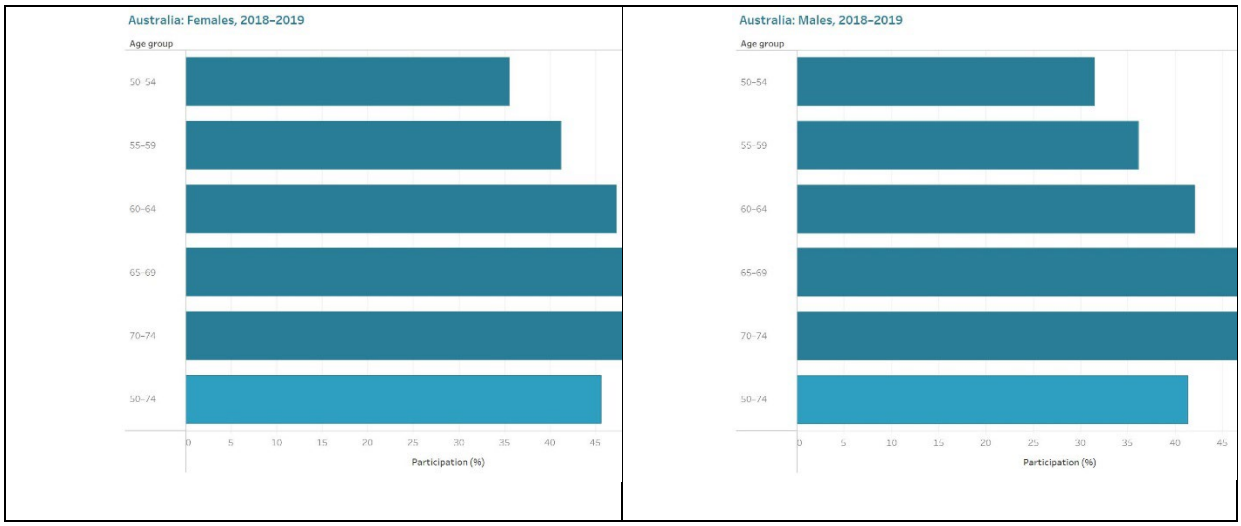
It is notable that the various test technologies available for bowel cancer screening mentioned earlier require different methods for sample collection. For example, colonoscopy requires a week of bowel cleaning preparation with a day procedure with full body sedation at the hospital, during which, a gastroenterologist will conduct a detailed examination of the individual's bowel using a colonoscope. The home-based iFOBT, as we have seen, is less invasive. However, it involves sampling one own stool using a kit 'at home'. The different test technologies are therefore likely to be associated with different kind of barriers in screening participation. The BB-CanS scale focus in this thesis is concerned by the home based iFOBT screening methodology offered by the NBCSP.

1.4. Sub-optimal Participation Rates

"Of those who were invited to participate in the NBCSP between 1 January 2018 and 31 December 2019, 43.5% undertook screening" (AIHW, 2021). Participation is higher among women (45.6%) than men (41.3%) and those aged 70-74 have the highest participation rate (55%) compared to younger cohorts as shown below (AIHW, 2022).

Figure 2

NBCSP Participation by Gender and Age in Australia 2018-2019 (AIHW, 2022)



Although slightly more women are participating, the age group incidence of NBCSP participation is generally the same across gender (see Figure 1). Participation also varies in relation to geography and socio-economic areas. The participation rate was lowest for invited people living in very remote areas (26.5%) and highest for those living in inner regional areas (46.6%). It was higher for people living in the highest socioeconomic areas (46.8%) and lowest for those living in the lowest socioeconomic areas (40.4%) (AIHW, 2022). This is consistent with previous studies in the UK, which have shown that there is a higher participation rate by women, and a lower participation rate by ethnic minorities and people with lower educational levels (Hall, 2015). This is also observed in other countries implementing comparable programs such as the Netherlands with high incomes showing the highest participation rate (68.2%) and some remote areas of Canada the lowest (16%) (Navarro, 2017). While CRC incidence occurs more generally in developed

regions, CRC-related mortality is highest in less developed countries (Jordan and Kazakhstan) for various reasons including the lack of health resources (Navarro, 2017) and possibly remoteness like in some parts of Australia. Overall participation rates on 17 screening programs were highest among women, with men exhibiting the greatest number of positive results (Navarro, 2017).

Individual differences are not only demographic but psychological differences, such as those the new BB-CanS tool developed in the derivation study is about to measure on this new sample. The role of individual differences/variations is extremely useful in developing and targeting the most at-risk populations in NBCSP bowel cancer testing campaigns.

1.5. Barriers to Participation

1.5.1 NBCSP Opt-Out Data Analysis

Population data have been provided by the Australian Institute of Health and Welfare on NBCSP participants who opted out of the program since its inception in 2006 (*N* = 397,242 between 2006-2017). The results showed that among participants who chose to opt-out, 36% of respondents claimed they had already had a colonoscopy, 10% declared they were "not interested", 5% had medical advice not to participate, 4% were currently under-care for cancer, 3% said they were "uncomfortable with the process", 1% had "privacy concerns" and 33% did not provide a reason for opting-out (AIHW, 2018, Goodwin et al., 2020b).

1.5.2 Barriers to Participation in Prior Research Literature

There are a myriad of barriers to bowel cancer screening that have been studied in the literature (Worthley, 2006; Hall, 2015; Gregory, 2011; Rawl, 2001; Chapple, 2008; Goodwin, 2019a) and we will review the main ones in Chapter 2. However, very few studies have used precise broad items (factors) to quantify the wide range of barriers to bowel cancer screening scales (BB-CanS). While several prior investigations have suggested factors such as fear, forgetfulness, lack of time, and disgust with the process as the main barriers to kit use and return, when they did use broad items, they did it in a limited way that failed to comprehensively capture the degree to which each barrier affected screening behaviour, and/or which sub-population groups were most affected by each barrier. Furthermore, these studies often overlooked the cognitions, actions, individual contexts, and they have not undergone systematic psychometric development and evaluation. The next section presents these main studies to date.

CHAPTER 2: BOWEL CANCER SCREENING SCALES (BB-CanS) LITERATURE REVIEW

2.1. Previous Bowel Cancer Screening Scales Studies Methodology literature review

In prior attempts to create scales to measure barriers to bowel cancer screening, the scale development steps leading to the formulation

of broader categories (factors) were sometimes limited to qualitative research only (Chapple et al., 2008; Hall et al., 2015) but not always, so we will look at both qualitative and quantitative research papers. For example, Hall's qualitative study (2015), using in-depth interviews of 27 invitees who declined to participate to the United Kingdom's colorectal cancer screening program (guaiac FOBT kit for 60-74 years old population) was based on grounded theory. Grounded theory (Corbin & Strauss, 2008) is an inductive data-driven approach to developing theories and hypotheses. It generally starts with open-ended questions such as "Could you explain to me your reaction when you received your invitation to take part in this program" in order to extract broad items such as general beliefs, perceived barriers to participation and mechanisms for improving uptake. Accordingly, interview transcripts were then refined into general codes. Emerging categories were subsequently compared and discussed until consensus was reached. Results distinguished five broad items (themes): "knowledge, beliefs, and awareness", "emotional reactions to invitation", "circumstances" (life events), "recent GI medical interventions", and "practicalities of completing the test". This methodology allows one to gain an in-depth understanding of the participants' barriers. However, their sample was too small (27 interviews) and restricted to qualitative research method.

Chapple's research (2008) studied a larger sample of people who had agreed to take part in the UK NHS Bowel cancer screening program (44 interviews). The methodology included a combination of in-depth

interviews with open questions followed by a semi-structured interview (that aimed to explore relevant issues that did not emerge in the first part of the process) to reach saturation. The data were then analysed using health behaviour theoretical models such as the Health Belief Model (Rosenstock, 1966, p. 99). Chapple and colleagues found the Health Belief Model was too restrictive, failing to capture culturally sensitive items like a sense of 'civic responsibility'. Such methodologies, although exploratory in intent and useful, always fail to represent a systematic psychometric development evaluation.

Other significant studies, such as Gregory et al., (2011)'s study, attempted to compare social cognitive[1] and social ecological[2] predictors of intention to screen with predictors of participation, taking us closer to a proper BB-CanS instrument. It was conducted in Australia on a larger sample (*N*= 376) of people aged 50 to 74 years invited to complete an iFOBT test. A multivariate analysis and exploratory factor analysis was conducted, which led to 31 socio-cognitive items and 29 socio-ecological items. KMO and Bartley's Test of Spherity enabled factor analysis. Examination of the scree plot of eigenvalues suggested a six and a three-factor solution respectively subjected to a varimax rotation. The factors were further narrowed down to a five-factor analysis, with three factors

[1] Socio cognitive models propose that the decision is influenced by psychological factors such as self-efficacy, perceived susceptibility to and perceived severity, perceived barriers of preventative behaviour (Armitage, 2000)

[2] The Socio Ecological Model propose that the decision is influenced at the interpersonal, institutional, community and public policy levels (Honda, 2006)

predicting intention to screen, and two dealing with actual behaviours (which are very distinguishable since "intention is a necessary but not sufficient prerequisite for behaviour" as discussed in Gregory et al., 2011, p.2).

Demographic variables (8 items) were analysed for their univariate association with intention to screen and participation using χ^2 tests. Latent factors were analysed for their univariate associations with intention to screen and participation using one-way ANOVAs and independent *t*-tests. All predictors were included in a multivariate linear model to determine joint predictors of intention to screen. There was little support for socio ecological factors (non-significant multivariate factors).

There were only two significant predictors of participation: people who (1) had known someone with CRC, and (2) people who perceived low barriers and high benefits to screening were more likely to participate in the screening offer.

The results confirmed the author's proposition that intention explains behaviour partly only: predictors of intention to screen and predictors of actual CRC screening participation may have overlapped but were not the same and the link was weak. It highlighted the fact that the decision-making process for CRC screening is complex (multi-staged) and that the factors that move participants from one stage of readiness to another are a necessary but not always a sufficient prerequisite for behaviour. It concluded that interventions should focus on factors that predict participations, rather than intention (Gregory ,2011, p.6). While useful,

the results were too focused on the theoretical model and lacked analytical steps in item development evaluation. As a result, the study failed to ~~Also, the study did not~~ capture enough actual barriers, such as practical or test-design impediments to returning the test, leading to insufficient meaningful broad factors.

Older notable BB-CanS studies, like Rawl's study (2001) or Worthley's study (2006), focused too narrowly on items and failed to reliably identify meaningful broad items for FOBT test participants. Rawl endeavoured to establish psychometric properties of six scales measuring the benefits and barriers to CRC screening (FOBT, colonoscopy, sigmoidoscopy). Item selection stemmed out of focus groups, literature review, Champion's scale (1995) measuring the benefits and barriers in breast cancer screening. Cronbach's alphas were used to measure the scales' internal consistency. Exploratory factor analysis was used to assess construct validity. While they all started with the same barriers, different kinds of perceived barriers were selected by participants for each kind of screening (FOBT, colonoscopy, sigmoidoscopy) as you would expect.

The scales were later tested on two populations "those who had relatives who did have CRC" (225 people) and "those who had relatives who did adenomatous polyps" (190 people). Factors loading for FOBT barriers by order of relevance were "Unpleasant", "Don't know how", "Embarrassing", "No problem", "Afraid of results", "Cost", "Time" and "Privacy". While it is worthwhile noting that the 'relatives' group perceived

higher benefits for FOBT, and that the 'embarrassment' barrier was lower for FOBT group compared to other groups, this study is now outdated (1995), took place in the US (different population) when FOBT was not widely available (nor free). The procedure may have been rather unfamiliar and was only loosely described in words to the participants. The age group was not clearly defined, and most importantly for our purpose, the study failed to reliably identify meaningful broad items for FOBT test.

Worthley's study is more recent (2006) and relevant. It took place in South Australia on a group of about 1818 non-participants to FOBT-based CRC screening aged 50-69 years old from a recent screening initiative as Australia was embarking on the national NBCSP program. Eligible participants who accepted the subsequent screening (960) were given a questionnaire listing barriers to participation. 481 questionnaires were returned, a 50% return rate which compromises sample validity, with a group profile similar in terms of sex and age to non-participants. The questionnaire design was based on the health belief psychological model, interviewing non participants and multidisciplinary focus groups.

The main reasons identified were procrastination: "never got around to it" (25.8%), followed by "too unpleasant" (24.7%), "recently completed other bowel tests or examination" (24%), "too inconvenient" (22.2%), "not received" (20%) and "I do not have bowel cancer symptoms" (19.3%) with unknown (unmeasured) possible overlaps. Furthermore, this was early days of the NBSCP before national campaigns

of information and its normalisation, with misconceptions that only symptomatic patients needed screening (20% of responders) and half of the kit recipients (45.2%) had decided not to participate before they had read the kit instructions.

Lastly, in 2019, a systematic review and meta-analysis by Myers and colleagues seek to find out if intervention effectiveness could be increased by targeting specific subpopulations with specific interventions or combining interventions. This extensive review was conducted on PubMed, PsycINFO, Scopus, CINAHL, and ProQuest Dissertations and theses using Cochran Bisk of Bias tool as a moderator for sensitive analysis. The review found 32 articles meeting the inclusion criteria, with 30 reporting uptake rates within subpopulations and 17 including combined interventions. It found that existing interventions are unlikely to be optimised through the targeting of specific subpopulations, such as gender, age, SES groups since the differences in intervention effects between these populations are small, ranging from 1.5-2.5%.

As for combined intervention strategies, the review found that they lead, on average, to an additional 2.5-3% greater participation. However, caution should be applied. Adding some interventions (print material) can reduce the effectiveness of combined interventions. Furthermore, it is unknown if combined interventions had a simple "dose effect" of adding interventions together. In order to find out, the author proposes more factorial randomised trials should be conducted (Myers, 2019, p.391).

In a previous review of these trials by Goodwin and colleagues that year (2019a), including 53 interventions strategies from 30 published studies, it has been suggested that some interventions, such as general practitioner (GP) endorsements, telephone contact, reading comprehensive material, advance notifications etc. improved participation. However, Myers remarked that the effect sizes of these interventions registered small to moderate effects (5-7%), so they are unlikely to generate the change needed to reach the desired 80% screening rate. In alignment with Gregory et al., Myers evokes the transtheoretical model of behaviour change (TTM)[3] citing Velicer who has often worked with Prochaska cited in Gregory's study about TTM.

Velicer and colleagues' study (2000) argues that different strategies are effective at progressing people through the different stages of behaviour change and found that awareness-raising interventions such as GP endorsements letters are likely to encourage attitudinal change, acting at early stages of decision (contemplation stage of kit use) whereas stimulus control interventions such as physical changes of kit is more likely to move people to action, people who would have otherwise failed to act in the later stages of decision. Myers concludes that a multi-faceted intervention could have a more favourable effect on participation rates in nationwide mail-out FOBT programs. However, it remained unknown

[3] Prochaska & Clemente's TTM model includes six discrete stages (1) Pre-contemplation; have not considered screening for CRC, (2) Contemplation; have thought about screening for CRC but have not made a decision, (3) Preparation; have decided to screen with FOBT, (4) Action; have already screened for CRC using an FOBT, (5) Rejection; have thought about screening for CRC but have decided not to, and (6) Colonoscopy intention.

which set of barriers can be addressed through a multi-faceted intervention addressing barriers experienced at each TTM stage of change with a monitoring of the 'dose effect' requiring factorial randomized trials.

Previous research has provided useful insight into barriers to bowel cancer screening and its complexity. However, no scale known to date (until 2021) had been psychometrically developed to capture frequencies, and magnitudes of barriers experienced by different kit recipients as has been attempted in Goodwin and colleagues' (2021) "Barriers to Home Bowel Cancer" study. The present research project is attempting to replicate the Goodwin and colleagues' study, on a new and larger sample. The Goodwin and colleagues' 2021 study is described in detail below as it forms the basis of the current study. Please note that this was not funded research conducted by Cancer Council Queensland and the University of Southern Queensland.

2.2. The BB-CanS Derivation Study (Goodwin et al., 2021)

Through the development of a self-report psychometric instrument for assessing individual differences in the perception of barriers to iFOBT kit use, the BB-CanS scale provides a standardised measure to capture the frequency and magnitude at which individuals experience various barriers to bowel cancer screening in population mail-out programs.

2.2.1. Qualitative Research Phase

The instrument design followed a three-steps process, including determining content domain, sampling from content (item generation) and instrument construction. The authors created an initial item pool of

barriers (k = 110) identified through their prior qualitative work, through mining existing literature on barriers to bowel cancer screening (such as Goodwin, 2020b; Hall, 2015; Wang, 2018) and from the systematic meta-analysis on strategies for increasing participation in mail-out colorectal cancer screening mentioned earlier (Goodwin et al., 2019a). Some items were adapted from published medical help-seeking scales (Champion, 2004; Thompson, 2004), gathered from discussions with test-recipients, or content analysis of popular Australian media sources (such as the *Insight* television show's conversation on Bowel Cancer Screening; Brunton et al., 2019). Goodwin and colleagues (2020b) also conducted phone interviews with a sample of NBCSP recipients who did not return their FOBT kits, and did not have a medical reason nor a recent or upcoming colonoscopy (N = 20 with 65% female). Participants were asked about cognitions, intentions, emotional reactions, opinions, and actions upon receiving their NBCSP and from this, barriers to participation were identified.

Since content validity is a prerequisite for measurement validity in the instrument psychometrics, it should receive the highest priority during instrument development. The BB-CanS content validity was assessed by an expert panel of health promotion officers (n = 4), researchers (n = 3) including an expert in scale development process, members of Cancer Council Queensland and the University of Queensland, a cancer hotline support operator (n = 1), and a general practitioner (n = 1) as well as invitees from the NBCSP (n = 7) to represent members of the target

population. Panel members were asked to rate each item in terms of its relevance (1 = "not relevant", 2 = "item needs some revision", 3 = "relevant but minor revision is needed", 4 = "very relevant") and its clarity (1 = "not very clear", 2 = "item needs some revision", 3 = "clear but needs minor revision", 4 = "very clear"). Panel members were also encouraged to comment on the question wording, the response scale, and to provide suggestions for barriers that were not covered by the scale. Scores were used to calculate a content validity index (CVI) for each item whereby scores of 1 and 2 were coded as irrelevant or unclear and scores of 3 and 4 were re-coded as relevant or clear. The total number of relevant or clear responses was divided by the total number of panel members, resulting in a percentage of agreement. Items with CVIs above .70 indicated good content validity and were retained. Those below .70 were considered for deletion or revision in conjunction with panel comments.

Thirteen items fell below the .70 threshold, eight of which were revised and five of which were removed based on panel comments. Remaining comments on each item were reviewed by the authors and a further 24 items were removed as, although the panel rated them as relevant and clear, they agreed that they were too similar to other items and, therefore, redundant. Eight extra items were added based on suggestions by the expert panel, resulting in 89 items to be tested with respondents. The online survey, including the developed scale, was then tested by several research team members to ensure clarity and ease of

completion of the final version (ABS, 2011; Davis, 1992; Zamanzadeh, 2015). Earlier qualitative work led to a suggestion that the multitude of barriers could be pragmatically organised into broad factors or domains reflecting barriers such as Practical or Physical Challenges, Negative Emotions, and a Lack of Perceived Needs. However, the present study was not intended to replicate this recent qualitative research phase.

2.2.2. Derivation Study Quantitative Research Phase

The derivation study quantitative research was conducted on a sample of 427 Australian adults aged 50-74 years old. The qualitative and quantitative research phase recruitment details can be found in the derivation study article (Goodwin et al., 2021). Participants were first asked whether they had returned their NBCSP home kit or not. They were also asked to report their gender, age, income, education level, and residential postcode.

The most common barriers items were identified as having already been screened (32.1%), misplacing/forgetting about the kit (24%), and lack of planning (22%) that I will subsequently refer to as the standalone items. The remaining individual items (n = 86) were methodically narrowed down to 68 items through an initial quantitative screening. Those that were endorsed by less than 5% of participants who did not report receiving and/or returning their most recent kit (the opt-outs, n = 10) were removed and items pairs that were too similar (overlapping variance of > .97) were identified and the item of the pair that captured the least variance was removed (n = 11) – the pertinent data are

available in Appendix A and information about the process is provided in Goodwin et al., 2021, p.3.

The remaining 68 items were then subjected to an exploratory factor analysis (EFA) to identify underlying barrier types through an optimal factor solution (one-to six-factor analyses). The EFA was also used to screen out poorly performing items. Items with low communalities (<0.10) and items that failed to sufficiently load on factors (< 0.30 or 10% shared variance) or those that cross-loaded (> 0.30) across more than one factor were also removed. Item removal was done in an iterative manner whereby factor loadings were recalculated and assessed after the removal of each worst performing item; 46 items remained (excluding the 3 standalone items).

Finally, a 4-factor solution (see Appendix B) was retained in consideration of the fit statistics (model fit worsened above four factors), the scree plot, and interpretability of the factor solution. The four clear dimensions reflected:

(1) Disgust relating to the procedure of collecting and storing stools in the confine of one's home (12 items, α = .96);

(2) Avoidance of test results (14 items, α = .93);

(3) Physical difficulties such as lack of resources and skills in physically completing and returning the kit (14 items, α = .93);

(4) Lack of autonomy in making health decisions (14 items, α = .84). These four factors were internally consistent, positively inter-correlated

(moderate to high magnitude) and predictive of prior kit return (moderate effect size) with coefficients ranging from r = 0.251 to r = 0.626.

Aggregated factor scores were calculated for each sub-scale, and general linear modelling was conducted in Mplus using an MLR estimator to determine the factors with the highest mean scores and assess relationships between factor means and demographics (age, gender, SES, education level, geographic remoteness and born in Australia or not), and kit return.

All factors had small-to-moderate associations with return of the last NBCSP kit received by the participant. The Disgust factor was the strongest predictor for not returning the NBCSP kit. Males were slightly more likely to report Avoidance, younger cohorts to report Disgust (b = −0.482, p = 0.039), whilst those with higher education levels reported slightly less Difficulty (b = −0.312, p = 0.033) with the process and more Autonomy (b = −0.393, p = 0.035) (see Appendix C).

The findings supported calls to apply multi-faceted intervention strategies that address a broad range of barrier types, particularly those which would encourage planning and promptness and would facilitate stool collection.

The 2021 derivation study BB-CanS scale had, thus, so far, only been tested on the one original sample.

2.3. Present Study Aims

The aim of this study is to confirm the four-factor structural reliability of the original BB-CanS scale as well as the model fit, and its criterion

validity (regarding bowel cancer screening participation, gender, age, and education level) on a new and larger sample of NBCSP kit recipients and, if necessary, refine the instrument in view of the findings and the interpretation of the results.

The instrument has three stand-alone items that will not be scored on any of the sub-scales. These three items correspond to the most commonly-cited barriers to screening, namely, screening outside of the program (item 1), lack of planning (item 47 "My lack of planning means I'll never get around to it" in Annex E) and misplacing the kit/forgetfulness (item 36 "I will probably put the home test kit somewhere and then forget about it"). The current analysis will only confirm the sub-scales given that single items cannot be analysed through the technique used.

2.4. Research Questions

The proposed research seeks to confirm the psychometric quality of both the BB-CanS full scale and the brief version in answering the following questions:

1. Does the proposed four-factor structure as measured by 49 questions 'fit' adequately – see *a Summary of cut-off values for the fit indices* in Table 1 that will be discussed later - when tested on a novel sample?
2. Do the items loadings remain stable when tested on a novel sample? Will the associations between each factor, demographics, and previous kit return remain consistent in a new sample?

3. As a result, it will be possible to confirm the degree to which each barrier (item), and which meaningfully labelled group of barriers (factor) is weighing on the decision to screen for bowel cancer or not, and to which demographic/profile of mailed-out kit recipient it relates.

It is expected that, like the derivation study, males will be more likely to report avoidance of test outcomes (Avoidance) as a factor, younger cohorts more likely to report disgust with the process (Disgust) as a factor, and that those with higher education will report less practical difficulty or challenges (Difficulty) and the need for a sense of greater autonomy (Autonomy). For those who did not return their latest kit, it is expected that the barriers will be more than by those who have not returned the kit and that their mean scores should significantly differ across factors, specifically the mean score of Disgust.

A valid scale for measuring barriers to bowel cancer screening will provide researchers with a standardised way of measuring types, frequencies, and magnitudes of barriers experienced by different kit recipients. Such a scale will also support policy makers and program developers by illuminating the drivers of non-participation and facilitating the development and testing of appropriate interventions to increase participation to the National Bowel Cancer Screening Program (NBCSP). This research implications are described in Clinical and Practical implications section of this document.

CHAPTER 3: METHOD

3.1. Sample Size

The BB-CanS was originally validated once on a smaller sample of participants (*N* = 427) for 49 final items (ratio 9:1). Despite the divergence of opinions on actual figures, according to Osborne and Costello, as a general rule, "all things being equal, larger samples are better than smaller samples because larger samples tend to minimise the probability of errors, maximise accuracy of population estimates, and increase generalisability of results" (Osborne and Costello, 2004). This particularly applies to CFAs: "Researchers need to remember that EFA and PCA (and other techniques like structural equation modelling) are large-sample techniques" (Osborne and Costello, 2004, p.8). Their ultimate concern is that CFAs can be prone to errors of inference such as solution instability issues.

The number of participants (*N*) or subject-to-item ratio, are also ~~all the more~~ important considerations in predicting important outcomes in confirmatory factor analysis (CFA) (McCallum et al., 1999 cited in Boateng et al., 2018). According to Osborne and Costello,

> "researchers seeking guidance concerning sufficient sample size in EFA or PCA are left between two entrenched camps-- those arguing for looking at total sample size and those looking at ratios. This is unfortunate, because both probably matter in some sense, and ignoring either one can have the same result: errors of inference". ~~(~~Osborne and Costello, 2004, p.2)

The necessary sample size depends on several aspects of any given study, including the ratio of variables to number of factors, and the level of variation between samples (MacCallum et al., 1999). As sample size increases, sampling error is reduced, factor analysis become more stable and more reliably produce the factorial structure of the population and "Quality of factor analysis will improve as communalities increase" (MacCallum et al., 1999, p.90). In our present study, communalities between samples are high and so is the number of items (49 items). Furthermore, the sample are one year apart, so having a large sample corrects the potential impact on the quality of solutions.

A widely-cited recommendations is the rule of thumb ratio of 1:~~2~~10 (Nunnally, 1978, p.421 as cited in Costello, 2004, p.2). Comfrey and Lee offered a rough rating scale for adequate sample sizes in factor analysis: "the adequacy of sample size might be evaluated very roughly on the following scale: 50 – very poor; 100 – poor; 200 – fair; 300 – good; 500 – very good; 1000 or more – excellent" (Comfrey and Lee, 1992, p.217).

Based on all of this, ~~Therefore,~~ a sample of over 1000 (N = 1158) for 49 items (ratio 24:1) participants has been recruited for the current study to ensure a level of over-determination of factors (ratio of variables to number of factors) well exceeding recommendations of Nunnally's widely-cited rule of thumb ratio of 1:10 (Nunnally, 1992, p.421).

3.2. Participants and Recruitment

Study participants were adults between the ages of 50-74 years residing in Australia (consistent with eligible NBCSP participants).

Participants (*N* = 1540) were recruited via Facebook advertising and survey invitation leaflets. The leaflet (Appendix D) contained an embedded QR code/link that participants could scan in order to access the survey link on their mobile phones or other devices. Leaflets were placed in various community groups frequented by people from 50-74, such as an St Vincent Private Hospital located in Brisbane City Centre, GP and dental practices, local bingo pubs, bowling clubs, volunteer organisations, shopping malls, libraries information boards, and various workplaces, with written permission to post the leaflet sought before posting. Invitations had also been posted using targeted Facebook advertising, manipulated throughout recruitment to maximise gender balance in the sample. The Facebook advertisements were designed to attract 50-60-year-olds and males who have historically had lower participation rates in FOBT screening. The advertisement was in English and stated that the findings of the research would inform solutions to facilitate early detection and treatment of bowel cancer in Australia. Participants were provided with an information sheet and an online consent form before being shown the survey. This form stated that the study was carried out by USQ and Cancer Council Queensland. A small incentive to participate was offered in the form of an opportunity to win one of three grocery vouchers to the value of $20-$50. The recruitment period went from the 13 February 2021 until 25 August 2021 and the survey was de-identified. This was non funded research with Cancer Council Australia as the industry partner and USQ responsible for the research governance.

3.2.1. Mitigation Issues of Recruiting 'opt out' Participants

Considering respondent burden, we theorised that the nature of the barriers preventing screening compliance (avoidance of a negative test outcome, physical difficulties performing the manual test, disgust at the process of the test, and resistance due to a sense of autonomy about personal health care) were not likely to be barriers to completing a simple self-report questionnaire. It was found in the derivation study that individuals who did not comply with the screening protocols were still willing to participate in the research with the most recent data collection phase yielding approximately 40% of respondents who did not adhere to FOBT screening. Nevertheless, as part of the CFA process, we looked to further refine the scale to reduce respondent burden.

3.3. Procedure

The procedure and modalities replicated the Goodwin and colleagues (2021) study's survey questions. The data were collected using the Qualtrics online survey platform (Qualtrics, 2017), was de-identified, and took between 20 and 30 minutes to complete. Participants were presented with a picture of the NBCSP kit and instructions to review before completing the survey. The survey captured anonymous data, including demographic information, bowel cancer screening behaviour history, and responses to the barriers to home bowel cancer screening (BB-CanS) items as shown in Appendix E. Failing to complete 50% of survey items or failing an attention check validation question would make the survey void. Facebook recruitment statistics showed that 14.2% of

the 8584 individuals who clicked the survey link completed the Facebook survey adequately for our purpose (1839 people viewed the first page containing the information and consent form but 83.8% of them engage in the survey, 2 people indicated they were younger than 50 years, 325 people did not go far enough). This is consistent with the participation rate of approximatively 15% described in the derivation study. Males ($\chi 2 = 9.02$, $P < .01$) and people who did not return their most recent kit ($\chi 2 = 5.19$, $P < .02$) were most likely to abort the survey before completion. The dataset has not been cleaned beyond what has been stated so far.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee, and with the 1964 Helsinki Declaration and its later amendments, or comparable ethical standards. Ethics had been approved by a university-based Human Research Ethics Committee (ref: H19REA291). My name was listed as a student researcher on the application.

3.4. Measures

3.4.1. Bowel Cancer Screening Behaviour History

Survey participants were first asked if they recalled receiving a home kit through the NBCPS ("yes" or "no"), how recently (in months), and whether they completed the FOBT test and returned the kit ("yes" or "no"). The question formulation of the 'up to date' statement formulated in the derivation study ("I am currently up to date with bowel cancer screening through colonoscopy or another test separate from NBCSP")

has been replaced in the present study by "I do not need to complete a home bowel cancer screening test because I have had a colonoscopy or another test separate from the National Bowel Cancer Screening Program" in order to check if the participant has used a screening method consistent with government recommendations. Although this reformulation should improve readability of the it is not expected that this clarification would have any bearings on the results.

Since this study took place during covid-19 period, it is important to note that participation has remained relatively stable for the covid-19 period 2019-2020 (43.8%) (AIHW, 2022) and has slightly improved since 2014-2015 (which had a 39% participation rate).

3.4.2. Socio-demographics

The participants' gender, education (highest education level), country of origin, and age were recorded (see Table 2 in the Results section below). The residential postcode was used to classify socio-economic status according to the Australian Bureau of Statistics' categories.

3.4.3. Barriers to Bowel Cancer Screening Scale Items (full scale)

The participants were asked to read statements about the 49 barriers (items) to home bowel cancer screening (Appendix E) and rate the degree to which each barrier would prevent them from completing and returning a home bowel cancer screening kit in the future.

Responses were scored on a 4-point scale from 0 = "*Not true or would not prevent me from using the test kit at all*" to 3 = "*This would definitely prevent me from using the kit*". Responses from 1-3 were ~~likewise~~ interpreted as potential barriers while responses registering ~~bearing a~~ 0 were interpreted as non-barriers.

The scale holds three stand-alone items score. These stand-alone items are: (1) "I have had a colonoscopy or another test separate from the National Bowel Cancer Screening Program", (2) "I will probably put the home test kit somewhere and then forget about it", and (3) "My lack of planning means I'll never get around to it". The remaining (46 items) correspond to all the aggregated sub-scale scores representing the four latent factors: *disgust* e.g. "I feel disgusted at the idea of seeing my stool while collecting it" (12-item), *avoidance* e.g. "I don't think there is a point in doing the screening test when it won't stop me from having cancer" (14-item), *difficulty* e.g. "I feel anxious about not knowing how to properly use the home test kit" (14-item), *autonomy* e.g. "I do not want to give my information to the people involved in this program" (6-item). Please refer to Appendix E for the full list of items.

3.4.4. Brief Scale (shorter version)

A 20-item brief version (derived from retaining the five highest loading items for each of the factors of the BBCanS) was also tested on the same participants for good fit comparable to the full-scale version. This produced a more workable scale that addressed key response burden issues, as it had been noted that many survey participants could not

finish the full version or failed an attention check validation question (close to 20%). Mean scores and Pearson's correlation were performed to test the strength of associations between the brief and full versions of each sub-scale (see Appendix F).

3.5. Data Analysis

In this section, the main methods used to analyse the data are presented. Software packages were used for descriptive statistics. The methods used for reliability and validity measurements to answer "Do the items' loadings remain stable when tested on a novel sample?" (Part 2 of hypothesis) and "Does the proposed four-factor structure as measured by 46 'fit' adequately on the new sample?" (Part 1 of hypothesis) are confirmatory factor analysis (CFA), with a definition of the fit indices, ~~was used~~ in order to confirm the 4-factor structure. The CFA was also used to confirm that 'associations between factor structure, demographics, and kit return likeliness remain the same' (Part 3 of the hypothesis).

3.5.1. Software Packages Used

Sample characteristics (descriptive statistics) were computed via the Statistical Software Package for the Social Sciences (SPSS for Window) from IBM Company. It was also used for analysing reliability and validity measures. The scale validation via CFA were conducted using the statistical package, Mplus (Version 8.6) (Muthén & Muthén, 1998-2021). Each item was codified: Au1, D1, Av1, P1 with Au for Autonomy, D for Disgust, Av for Avoidance, P for Practical categorical variables, and N for Standalone variables. Please refer to Appendix E for the complete Mplus

and SPSS item codification list followed by the Mplus output of the sample containing the 46-items and the four factors included in the present study.

3.5.2. Confirmatory factor analysis

Confirming the scale required one to choose a method to evaluate the test's four-factor structure that was inductively and empirically based on the derivation study's exploration factor analysis. The method of choice for such testing on large samples is a confirmatory factor analysis (CFA). CFA was applied to verify the latent constructs. The predicted factor structure of observed variables was translated into the complete covariance matrix over these variables. Next, this matrix was adjusted to the actual covariance matrix, and subsequently compared with it. The discrepancy between the two, the "goodness of fit" (GOF), is expressed by a number of indices. CFAs are used to confirm or reject the measurement theory and allow for the systemic comparison of alternative factor structures, based on fit procedures and parameter estimates of associations between latent constructs. A CFA was therefore applied to assess the goodness of fit of the four-factor structure of the BB-CanS in the current sample.

We expected the measurement of items, their clear four factors structure and functions to hold and remain stable in the cross-validation sample. This larger sample cross-validation step of scale development would then confirm that the measure created by Goodwin and colleagues (2021) matched its underlying theoretical conceptualisation.

3.5.3. Fit indices

According to Field (2005), the Goodness-of-Fit indexes (GIF) are based on how well the data predicted by the model, (predicted by the original sample in our case), correspond with the "real data" (the current larger sample data in our case). The fit indices results basically tell us if the model should be accepted or rejected.

GIF indexes can be absolute or incremental. Nasser & Takahashi (2003) advise one to report both absolute and incremental fit indices results. The general agreement is to report on the chi-square and on the root mean square error of approximation (absolute indices), and then, on a couple of baseline fit indices, such as the Normed Fit Index and the Comparative Fit Index (incremental) (Garson, 2008c). Some researchers will make use of the three baseline indices, that is, the normed fit index (NFI), the non-normed index, and the comparative fit index (CFI), which all fit relatively well regardless to the sample size (Patterson et al., 2005).

The fit indices used in this study are described below.

Chi-square (CMIN) - The model fit will be assessed through a chi-square test of exact fit. A chi-square ratio of $\chi^2 \leq 2$ indicates a superior fit between the hypothesised model and the sample data (Cole, 1987). "A non-significant value of χ^2 indicates failure to reject the null hypothesis that the hypothesised covariance matrix is identical to the observed covariance matrix, which is usually accepted as evidence of adequate fit" (Cheung & Rensvold, 2002, p.234). In other words, when the chi-square is significant, there is a poor model fit and when it is non-significant, it

means that there is a good model fit. A significant value is a chi-square value of 0.05 or less. A reasonable fit is between 0.06-0.08, and a good fit > 0.08 (Engelbrecht, 2009, Pallant, 2005). Furthermore, the chi-square index of model fit being a statistical test with a *p* value, a statistically significant *p* value indicates that the data do~~es~~ not fit the model ($p \leq .05$ being statistically significant).

It is important to note that chi-square values are influenced by sample size and model complexity (Hoyle & Panter, 1995). For large sample sizes (200 or higher), like in our present case, the chi-square (χ^2) is deemed a highly sensitive statistical test, but not a practical test of model fit (Garson, 2008c). Due to the sensitivity of the chi-square to large sample size with large sample sizes, more variables tending to produce larger chi-squares, and due to the complexity of the analysis when variables contain a large number of categories[4], many GFIs have been proposed as alternative to chi-square values to assess model adequacy (Cheung & Rensvold, 2002; Alavi et al., 2020).

A good alternative is the Comparative Fit Index (CFI; Bentler, 1990). The CFI is an incremental relative fit index that measures the relative improvement in the fit of the current model over the baseline model. In other words, the CFI compares the existing model fit with a null model in order to determine the lack of fit. CFI > 0.95 is often considered

[4] e.g. chi-square is affected by the distribution of variables or omitted variables (Cheung & Rensvold, 2002)

a good fit, CFI > 0.90, a reasonable fit, and CFI =1, a perfect fit (Garson, 2008c).

The Normed Fit Index (NFI) is similar to the CFI except that it does not require any assumptions with regards to the chi-square (Garson, 2008c) and it is slightly more affected by sample size. According to Ullman (2001), the NFI underestimates the fit for small samples (< 100). Since the current study's sample size is not below 100, the NFI is therefore regarded as satisfactory for the confirmatory factor analysis. The word 'normed' means that 0.00 > NFI > 1.00, with 1.00 index corresponding to the perfect fit, while values of 90 and higher are considered to be satisfactory (Schumacker & Lomax, 2004).

The incremental Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) and the root mean squared error of approximation (RMSEA; Steiger, 1989) are also used. The RMSEA is considered an absolute fit index, in that it assesses how far a hypothesised model is from the perfect model while the CFI and TLI are incremental fit indexes that compare the fit if the hypothesised model with that of a baseline model (Yan Xia & Yanyun Yang, 2018).

The RMSEA does not require a comparison with a null model, and it is not particularly affected by sample size (Garson, 2008c). Another common use and interpretation is that RMSEA < .05 indicates close fit. An RMSEA value of 0.05 or less corresponds to a good model fit and a RMSEA value of 0.06-0.08 is still acceptable (Schumacker and Lomax, 2004). Hu and Bentler suggested that "an RMSEA smaller than .06 and a CFI and TLI

larger than .95 indicate relatively good model–data fit in general". Hu and Bentler's study (1990) has become highly influential, and they recommended cut-offs have been adopted in many structural equation modelling (SEM) practices. The RMSEA value is reported with its confidence intervals. An RMSI 90% confidence limit should be between 0.00 and 0.08 (upper limit) to indicate a good fit (Garson, 2008c).

The Standardised Root Mean Square Residual (SRMR), a measure of the mean absolute correlation residual, renders the overall difference between the observed and predicted correlations or variances. An SRMR ≤ 0.08 is considered acceptable (Bentler and Bonett, 1980; Bentler, 1990; Garson et al., 2005; Hu and Bentler, 1999; Tucker and Lewis, 1973), with an SRMR value of 0.00 indicating a perfect fit. Patterson et al. (2005) lower the bar to SRMR ≤ 0.05.

Table 1 contains a summary of the cut-off values for each of the fit indices discussed.

Table 1

Summary of the cut-off values for the fit indices

Fit Index	Model fit	Value
Chi-square value (Pallant, 2005).	Poor fit	</= 0.05
	Reasonable fit	0.06 – 0.08
	Good fit	> 0.08
Bentler-Bonett - Normed Fit Index (NFI) (Bentler & Bonnet, 1980) **Bentler-Bonett - Non-normed Fit Index (NNFI)** (Bentler & Bonnet, 1980). **Comparative Fit Index (CFI)** (Garson, 2008c).	Perfect fit	= 1
	Good fit	>0.95
	Reasonable fit	>0.90
SRMR (Patterson et al., 2005).	Perfect fit	0.00
	Good fit	</= 0.05
	Reasonable fit	0.06 – 0.08
RMSEA (Dewulf, Raes, van Heeringin, & Williams, 2009).	Good fit	</= 0.05
	Reasonable fit	0.06-0.08
	Poor fit	> 0.08

An ideal index would be one that is relatively independent of sample size, accurately reflects differences in fit, and imposes an appropriate penalty function for the inclusion of additional parameters (Marsh et al., 1988). It is therefore common practice to use multiple GFIs when evaluating and reporting overall model fit. Also, because the variables are mean and variance adjusted (WLSMV) estimation method relying on a polychoric correlation matrix was used in Mplus (Liang & Yang, 2014).

3.5.4. Reliability and Validity Measures

Internal consistency is what measures the reliability and the validity of the measurement instrument. For the scale to be reliable, it must consistently reflect the measuring construct (Field, 2005). In other words, internal consistency refers to the degree to which the items that make up the scale (in our case, the questions asked to iFOBT recipients) "hang together" (Pallant, 2005). The most commonly used method to determine internal consistency is Cronbach's alpha coefficients (α). We will therefore determine the Cronbach alpha value for each of the 46 items in relation to each sub-scale (4-factors). Cronbach alphas are computed using SPSS (Analyse/Scale/Scale Reliability Analysis). Values close to 1.0 indicate a high correlation, which means that the internal consistency is high. If the values are closer to 0.00, it means that the items do not correlate well, and consequently, the internal consistency is low (Maree, 2007). It is commonly accepted that values 0.70-0.80 are satisfactory for confirmatory studies, with values above 0.80 indicating a good internal

consistency (Garson, 2008b & Pallant, 2005). High correlations indicate that all the items measure the same construct.

Factors loadings were also examined, with loadings statistically significant at .05, and absolute loading > .30 being considered as acceptable (Tabachnick, 2019). Alongside factor loadings, confidence intervals (CI) results were computed. The Confidence Intervals (CI) for factor loadings tell us that the current sample population value is between the two following values defined by the CI: between Lower -2.5% and Upper +2.5% – with 95% certainty. For example, for the Autonomy item AU1, the Lower -2.5% (.87) and the Upper +2.5% (.96) translated into 95% CI [.87, .96] corresponding to a 95% estimate of the population loading. The population value was between these two numbers, with 95% certainty.

Inter-factor correlations (e.g., autonomy with disgust) were also examined to check for potential second-order factor structure, like a general factor overarching all factors (superordinate factor), or some factors (e.g., bi-factor structure). It was expected that $r < .50$, and $p < .001$. Lastly, modification indices were examined to determine if any item would be a good candidate for removal to optimise the fit. Modification indices (MI) are estimates of the amount by which the chi-square would be reduced, that is, would improve, if a single parameter restriction were to be removed from the model.

Items were removed in an iterative manner whereby model fit ~~will~~ was reassessed after each item removal. Data analysis was repeated on the 20-item briefer scale.

CHAPTER 4: RESULTS

4.1. Sample Characteristics

A total of 1540 participants aged 50-74 years consented to take the Qualtrics survey online. However, 325 (21.1%) participants did not provide sufficient and/or valid responses as a result of either completing less than 50% of survey items relevant to this study or failing an attention check validation question. This resulted in a sample of 1158 participants, with a mean age of 62 approximately (M = 61.56; SD = 6.92), older participants (> 60 years of age) and women (61%) were more likely to complete the survey. This was in line with previous what Goodwin and colleagues (2021) observed: Those who provided enough data for this study were significantly older (r = 0.147, p < .001) and they were more likely to be female (r = −0.123, p < .001) than those who did not provide enough data (Goodwin et al., 2021, p.2).

Table 2 below shows the sample characteristics. The current survey (N = 1158) sample characteristics results are presented alongside the derivation study (N = 427) survey results (left-hand side of Table 2), since a noticeable recruitment characteristics' discrepancy between the two sample would influence the results. Table 2 shows that there is no recruitment characteristics' discrepancy since the two samples have

comparable characteristics except for a slightly higher participation of males this time (38.7% versus 31.9%).

Table 2

Sample characteristics for the present study (N = 1158) compared to previous study (N = 427) from Goodwin and colleagues (2021)

Demographic	Previous study (*N* = 427)	Current study (*N* = 1158)
Gender		
Male	136 (31.9%)	448 (38.7%)
Female	290 (67.9%)	706 (60.9%)
Other	0.2%	0.4%
NBCSP Participation Rate		
Yes	266 (62.3%)	709 (61.2%)
No	136 (32.1%)	364 (31.4%)
Did not recall receiving kit	24 (5.6%)	85 (7.4%)
Age		
M	61.77	61.56
SD	6.85	6.92
< 60 years of age		528 (45.6%)
> 60 years of age)		628 (54.2%)
Did not reply		0.2%
Born in Australia		
Yes	331 (78.1%)	714 (72.34%)
No	93 (21.9%)	273 (27.66%)
Gender/Kit Return		
Male		614 (53.0%)
Female		868 (75.0%)
Age/Kit Return		
< 60 years of age		602 (52.0%)
> 60 years of age)		903 (78.0%)

Table 2 shows that there is no recruitment characteristics' discrepancy since the two samples have comparable characteristics. Most participants were born in Australia (72%) with most overseas participants being from the United Kingdom (13%) or New Zealand (5%). The sample was therefore comparable to the derivation study's percentages results (78% Australia born) and more fully matched the actual diversity of the larger Australian population registered in the last National Census. The 2021 Census found that 27.6% of respondents reported their birthplace as being overseas, with the majority of these being from the UK or New Zealand (Australian Bureau of Statistics, 2021).

With a 78% kit completion rate, older participants (> 60 years of age) were significantly more likely to return their most recent FOBT screening kit compared to 52% of younger participants (< 60 years of age), χ^2 [1] = 80.72, $p < .001$. The survey response rate is comparable to other similar studies like Gregory and colleagues' study: "Surveys were received from 664 participants giving an adjusted response rate of 56% (664/1,181)" (Gregory et al., 2011, p.3) or other study "of the 960 questionnaires sent, 481 (50%) were returned questionnaires return rate of 50%" (Worthley et al., 2006, p.608). In the latter, the non-participant group registered an initial 41% response rate and had to be boosted by reminders to complete the survey in order to validate the sample group.

Likewise, with a 75% kit completion rate, females were significantly more likely to return their most recent FOBT screening kit compared to

53% of males, χ^2 [1] = 53.93, p < .001. This was consistent with AIHW (2021) reporting on the 5,744,244 eligible people invited to the NBCSP from 1 January 2018 to 31 December of which female (45.6%) invitees had a higher participation rate than males (41.3%).

4.2. Confirmatory Factor Analysis Results on Full scale (46-items) & Validity

4.2.1. Fit Indices Results

Goodness-of-fit indices were computed to evaluate the 4-factor CFA test of fit on 46 BB-CanS items. Table 3 presents the model fit indices for the 4-factor model. The chi-square value should indicate, a priori, if the original study 4-factor model fits or does not fit the data collected in the current study. The results (χ^2 [46] = 2301.38, df = 983, p < .001) had a p value < .001, therefore did not show good model fit. This seems to indicate that the original 4-factor model did not fit the newly-collected data well.

The chi-square index is overly strict for large samples (+200 participants) (Garson, 2008c). As previously discussed, for large sample sizes (200 or higher), like in our present case, the chi-square (χ^2) is deemed a highly sensitive statistical test, but not a practical test of model fit (Garson, 2008c). Given that the present study included a large sample (n > 1000), the chi-square result was unsurprisingly significant. Focusing on descriptive fit statistic was therefore deemed more appropriate.

The RMSEA (.034, 95% CI [.032, .036], p > .999 indicated a good fitting model. The CFI and the TLI indices were above .95, which indicated

a good model fit as well (CFI = .972 and TLI = .970). Lastly, the SRMR was less than .08. (SRMR = .058) and confirmed good fit. Combined, the fit indices for the 4-factor model based on the 46 items of the BB-CanS scale indicated that the model fits the data well, further validating the derivation study's model fit and structural validity.

Table 3

46-items Model Fit Indices

Fit Measures	Full Name	Level of acceptance	Observed Value	Comments
χ^2	Chi-square	$p > .05$	2301.38	OK
RMSEA *	Root Mean Square of Error Approximation	< .05 Range 0.05 to 0.1 acceptable	.034	Good fit
CFI *	Comparative Fit Index	> 0.90	.972	Good fit
TLI *	Tuckler-Lewis Index	> 0.90	.970	Good fit
SRMR	Standardized Root Mean Square Residual	< .08	.058	Good fit

* at a minimum, these fitness indices should be satisfied by the measurement model – Please see *Summary of the cut-off values for the fit indices, Table 1*

4.2.2. Factor Loadings Results

Since the proposed technique does not permit single item analysis, and since the aim of the current analysis is to cross-validate the 4-factor structure in a new (and larger) sample in order to ascertain the psychometric quality of the derivation study BB-CanS proposed tool, the loading results will not show the three standalone barriers' loadings. The present study is focused on the rest of the barriers (46 items) associated to the factor structure reflecting disgust relating to the procedure,

avoidance of test outcomes, practical difficulty (or challenges) in completing the screening procedure, and the need for a sense of greater autonomy in making health decisions.

Table 4 below contains the item stems (k = 46) and the standardised factor loadings.

Table 4

Factor loadings and coefficient of determination for each of the 46-items version of the current sample

	Factors				
Items	**AU**	**D**	**AV**	**P**	**R^2**
I do not want to give my information to the people involved in this program	.917				.841
I don't know what will happen to my information once I return the kit	.948				.899
I am concerned about the privacy of my health information	.872				.760
I won't do the home test kit because my health care is between me and my doctor	.938				.879
I don't like being told what to do	.949				.844
I should be in charge of my health and decide when to do the testing	.921				.849
I feel disgusted at the idea of seeing my stool while collecting it		.899			.809
I think collecting a stool sample is dirty		.932			.869
It is unhygienic to store a stool sample in the fridge		.922			.851
I feel disgusted at the idea of getting close to my stool while collecting it		.955			.912
I don't want to accidentally touch my own stool		.938			.879
I would find it embarrassing to store a stool sample in my fridge		.942			.888
It is embarrassing to send a stool sample to another person for testing		.956			.913
I'm embarrassed to send a stool sample in the mail		.919			.845
It is unhygienic to store a stool sample in my house		.933			.870
Collecting a stool sample is unpleasant		.948			.899
I feel disgusted at the idea of collecting a stool sample		.958			.917
I would find it physically challenging to collect a stool sample		.817			.668
I don't think there is a point in doing the screening test when it won't stop me from having cancer			.849		.721
It would be too late to do anything if they found something			.899		.807
I would prefer not to know if I have cancer			.909		.825
I think if the test found something, it would put too much strain on my family			.898		.807
I don't want to complete the home test kit because I am scared to find out if I have cancer			.884		.782
I'm not interested in doing the home test kit now, because I'll deal with cancer if and when I have it			.918		.843
Waiting for the results from the home test kit would be too stressful			.907		.822
I wouldn't bother with the home test kit because I don't have health insurance to cover treatment			.838		.702
Thinking about testing for bowel cancer makes me feel old			.902		.814
I'm worried about the impact it would have on my life if the test found something			.927		.859
I was not involved in the decision to have a home test kit sent to me			.900		.811
I don't like the idea of having a colonoscopy if I receive a positive result			.847		.717
I have more important issues to deal with than bowel cancer screening			.825		.681
I don't need to do the home test kit because I know there is nothing wrong with me			.803		.645
I feel anxious about not knowing how to properly use the home test kit				.851	.725
The stool collection stick is too small				.835	.697
The process of stool collection involves too many steps				.911	.831
I can't understand exactly what I am supposed to do				.789	.622
I do not think that I could use the home test kit correctly				.878	.770
I am worried I might damage the home test kit if I tried to use it				.804	.647
It would be difficult for me to send the home test kit back in the mail				.765	.586
It is easy to lose parts of the home test kit, so it can't be completed properly				.787	.619
The tools in the kit are not designed well enough to make stool sample collection easy				.837	.700
I think the process of collecting a stool sample and sending it off is too complicated				.907	.823
The home test kit instructions are too hard to follow				.847	.717
Collecting a sample using a home test kit is inconvenient				.920	.846
I wouldn't want to look stupid for not using the home test kit properly				.906	.822
The tools in the kit are not designed well enough to cleanly collect a stool sample				.896	.802

Note. AU = Autonomy, D = Disgust, AV = Avoidance, P = Practical Difficulties, R^2 = R-Squared Value

As you can see in Table 4, the loadings, and most particularly autonomy, have generally increased compared to the derivation study – see Appendix B. Factor loadings results showed standardised factor loadings were high (above .77), with $p < .001$ (significant) for each of the 46 items.

4.2.3. Confidence Intervals (CI) at the Factor Level

At the factor level, confidence intervals (CI), measuring the confidence level of the results (or their statistical significance), were narrow: Autonomy 95% CI [.83, .98], Disgust 95% CI [.77, .98], Avoidance 95% CI [.73, .88], Practical 95% CI [.72, .83] (Please refer to Mplus 46-items output in Appendix H).

4.2.4. Communalities

R-Squared values, which are equivalent to the communalities, tell us how well an individual item reflects a factor [or the proportion of each variable's variance that can be explained by the factor]. Communalities were examined to ascertain whether the model could be improved by deleting certain items. If communality values below .3 are found, this indicates that their deletion may improve model fit. As shown in Table 4, R-Squared values were ranging from $R^2 = .586$ to $R^2 = .917$, meaning there were no R-Squared values < .3, so the original model was retained.

4.2.5. Inter-factor Correlations

As shown in Table 5 below, the inter-factor correlations were all significant and high: ($r = .64$, $p < .001$, $t = 18.03$ [autonomy with disgust]; $r = .84$, $t = 43.57$ $p < .001$ [avoidance with autonomy]; $r =$

.74, t = 26.02 , $p < .001$ [avoidance with disgust]; $r = .68$, $t = 19.19$, $p < .001$ [practical difficulties with autonomy]; $r = .88$, $t = 61.23$, $p < .001$ [practical with disgust]; $r = .71$, $t = 23.12$, $p < .001$ [practical difficulties with avoidance].

Table 5

Inter factorial correlations

Factors Pair	*r* value	*p* value	*t* value	95% CI
Autonomy w/Disgust	.64	$p < .001$	18.03	[.57, .71]
Avoidance w/Autonomy	.84	$p < .001$	43.57	[.80, .88]
Avoidance w/Disgust	.74	$p < .001$	26.02	[.69, .79]
Practical w/Autonomy	.68	$p < .001$	19.19	[.60, .72]
Practical w/Disgust	.88	$p < .001$	61.23	[.84, .89]
Practical w/Avoidance	.71	$p < .001$	23.12	[.65, .76]

4.2.6. Model Modification Indices leading to Model Modification Suggestions

Modification indices (MI) are estimates of the amount by which the chi-square would be reduced, that is, would improve, if a single parameter restriction were to be removed from the model. Modification indices are produced by structural equation modelling tool such as MPlus, and can help identify items that need to be modified (Boateng, et al., 2018, p.12). In order to improve the model, pairs of items with highly correlated residuals, that is, possibly holding a communality distinct from

the factor's main concept, were identified. For this, MIs with a minimum value of 40.00 were sought.

For Disgust, the two items "It is unhygienic to store a stool sample in the fridge" (item 10) and "I would find it embarrassing to store a stool sample in my fridge" (item 22) both load on Disgust. This seemed to be having something to do with the fridge in addition to Disgust. An additional concept linked to "where the stool sample would be stored" (fridge), or the imagination around the fridge symbolic; in other words, an additional communality for this pair of items distinct from Disgust, appeared. This additional and distinct communality between the two items explains why we had an MI (item 10 on item 22) value of 44.84, which was how much the chi-square number would improve if this item was removed, and this is quite strong. Based on the MI value, and since the concept of hygiene ("it is unhygienic" item 10) is closer to the Disgust construct (factor) than embarrassment ("I find it embarrassing" item 22), one of them (item 22) was removed. Likewise, "I would find it physically challenging to collect a stool sample" (item 49) seemed to cross load with Practical rather than Disgust since MI (item 49 on PRACTICAL = 48.92), so item 49 was removed. The last item removed from the Disgust factor was item 24 ("It is embarrassing to send a stool sample to another person for testing") (item 24) which cross-loaded with Avoidance since MI (item 24 on AVOIDANCE = 40.33).

In Autonomy, "I don't know what will happen to my information once I return the kit", (item 9) and "I am concerned about the privacy of

my health information", (item 13) cross-loaded highly as well MI (item 9 on item 13) = 71.77. These two items, item 9 and AU3, seemed to have a correlation outside of the Autonomy factor, around the concept of privacy of health information. Item 13, "I am concerned about the privacy of my health information", also cross-loaded on the Avoidance factor, so item 13 was removed. By removing item 13, the chi-square result improved the model fit.

In Avoidance, "I was not involved in the decision to have a home test kit sent to me" (item 34) had an MI (AVOIDANCE on item 34) = 103.77, above 40.00, so the item was removed to improve the chi-square, therefore the model.

Lastly with Practical difficulties, "The tools in the kit are not designed well enough to make stool sample collection easy", (item 33) and "The tools in the kit are not designed well enough to cleanly collect a stool sample" (item 46) were both loading on Practical difficulties, but the two items might be too similar sharing residual correlation in relation to tools with MI (item 33 on item 46) = 128.77, suggesting that it was not so much about Practical difficulties as it was about the kit tools, so item 33 was removed since item 46 captured more variance and loaded more strongly onto the primary factor. "Collecting a sample using a home test kit is inconvenient" (item 40) was removed from Practical difficulties since MI (PRACTICAL on item 40) = 70.88.

In total, seven items (item 13, item 22, item 24, item, 34, item 33, item 40 and item 49) had been removed in an effort to refine the BB-

CanS scale. See summary in Table 6 below. Finally, the CFA was rerun, with 45, 44, then 43, then 42, 41, 40, and, finally, resulted in 39 items. Table 6 shows which items have been removed, the cross-loading, and the reasoning justifying each item removal.

Table 6

Items Removal Recapitulation

Item Removed	Primary Loading Factor	Cross-loading Item or Factor retained	Decision Justification
I am concerned about the privacy of my health information (item 13)	Autonomy	*I don't know what will happen to my information once I return the kit (item 9)*	Item removed since co-varying item also cross-loads on the Avoidance factor
I would find it embarrassing to store a stool sample in my fridge (item 22)	Disgust	*It is unhygienic to store a stool sample in the fridge (item 10)*	Item removed as hygiene is conceptually closer to the core disgust construct than embarrassment
It is embarrassing to send a stool sample to another person for testing (item 24)	Disgust	Autonomy factor	Remove Item
I was not involved in the decision to have a home test kit sent to me (item 34)	Avoidance	Autonomy factor	Remove Item
The tools in the kit are not designed well enough to make stool sample collection easy (item 33)	Practical Difficulties	*The tools in the kit are not designed well enough to cleanly collect a stool sample (46-p/P14)*	Retain cross-loading item as it captures more variance and loads more strongly onto the primary factor
Collecting a sample using a home test kit is inconvenient (item 40)	Practical Difficulties	Disgust factor	Remove Item
I would find it physically challenging to collect a stool sample (item 49)	Disgust	Practical factor	Remove Item

4.2.7. Final 39-Item Model

After re-analysing the model fit after the seven item modifications, the RMSEA had dropped (.029), and had therefore improved. The same could be observed for the CFI (.982), the TLI (.981) and SRMR (.050). The Chi-square Test of Model Fit value was smaller with a better value, which improved the model fit:

Table 7

Fit indices comparison between the improved 39-items model and the legacy 46-items model

Fit Indices	χ^2	*df*	RMSEA	RMSEA 90%	CFI	TLI	SRMR
39-items Model	1385.99	*696*	.029	[.027, .032]	.982	.981	.050
46-items Model	2301.38	*896*	.034	[.032, .036]	.972	.970	.058

An improvement in model fit was observed for all the fit indices.

4.3. Inter-factor correlation and alternative factorial structures CFA model fit

The inter-factor correlations were high (r = .64 [disgust with autonomy], r = .84 [avoidance with autonomy], r = .74 [avoidance with disgust] , r = .66 [practical with autonomy] , r = .87 [practical with disgust] , r = .71 [practical with avoidance], with a $p < .001$ for all).

Table 8

Comparative analysis of CFA model fit indices for 4-factor, uni-dimensional, second-order 4-factor, and bi-factor model

CFA 46-items Models	x^2	RMSEA	RMSEA 90CI	CFI	TLI	SRMR
4-factor	2301.38	.034	.032, .036	.972	.970	.058
Unidimensional	4400.92	.055	.053, .056	.926	.923	.114
Second-order 4-factor	2802.31	.040	.038, .042	.961	.959	.074
Bi-factor	2801.46	.041	.039, .043	.960	.956	.069

Note. As a minimum these fitness indices should be satisfied by the measurement model mentioned above

Despite displaying an adequate fit, the results were not as satisfactory compared to the correlated four-factor structure. A deterioration of fit is significant according to the 90% CI around RMSEA estimates (see Appendix I).

4.4. Gender sub-samples CFA model fit indices

Table 9

Gender sub-samples CFA model fit indices

CFA 46-items Models	x^2	RMSEA	RMSEA 90CI	CFI	TLI	SRMR
Males	1486.88	.034	.030, .037	.981	.980	.065
Females	1649.39	.031	.028, .034	.971	.970	.071

Note. As a minimum these fitness indices should be satisfied by the measurement model mentioned above

The CFA model fit indices displayed good model fit as well in the current sample for the correlated 4-factor structure across the gender

subgroups. See Table 1 - Summary of the cut-off values for the fit indices p.45.

4.5. Criterion Validity Between-groups

As shown in Table 10 below, Mean (*M*) comparisons of factor scores show that males and females only differ *slightly* on Avoidance and Autonomy but do not differ significantly on Disgust and Physical Difficulty. Participants who did not return their last kit endorsed all four barriers more readily (moderate to large magnitude) than those who did.

Table 10

Mean comparisons on factor scores between-groups

Groups	Disgust	Avoidance	Practical	Autonomy
Male *M, SD*	14.38, 5.68	16.39, 5.77	15.93, 4.61	7.03, 2.75
Female *M, SD*	13.90, 4.76	15.22, 3.80	15.74, 3.99	6.54, 1.83
t	1.49	3.80	0.74	3.33
p	.123	.002	.458	.003
d	0.09	0.25	0.05	0.22
Did return last kit				
M, SD	16.25, 7.04	17.76, 6.47	17.3, 5.37	7.57, 3.26
Did not return the last kit				
M, SD	12.99, 3.32	14.65, 3.23	15.07, 3.29	6.31, 1.38
t	8.36	8.64	7.25	7.05
p	< .001	< .001	< .001	< .001
d	0.66	0.68	0.54	0.57

4.6. Reliability

For the Disgust factor, the Cronbach alpha (12 items) was excellent α = .95 indicating a very good internal consistency (> .90). See the SPSS Reliability Output for the Disgust factor on 12-items in Appendix K. If we look at the final items in Mplus Final output, we can see that once SPSS items 22 ("I would find it embarrassing to store a stool sample in my fridge"), 24 ("It is embarrassing to send a stool sample to another person for testing") and 49 ("I would find it physically challenging to collect a stool sample"), the new Cronbach alpha α = .949, that is α = .95 remains the same for Disgust. See the SPSS Reliability Output for the Disgust factor on 9-items in Appendix L. The same process was applied to the Avoidance factor (14-items), and we found α = .93, which indicated a very good internal consistency for this factor as well. We found that there was no need to remove any item since none of them would improve the overall figure. See the SPSS Reliability Output for the Avoidance Factor in Appendix M. The Autonomy factor's Cronbach alpha (α = .88) was satisfactory as well. No item removal would improve the factor's internal consistency. See the SPSS Reliability Output for the Autonomy factor (6-items) in Appendix N. Mplus shows item 13 missing ("I am concerned about the privacy of my health information"). If we recalculate the Cronbach alpha after removing item 13, we still obtain α = .85. See the SPSS Reliability Output for the Autonomy factor (5-items) in Appendix O. Lastly, we obtained α = .92 for Practical, an excellent result. See the SPSS Reliability Output for the Practical factor (14-items) in Appendix P.

Mplus shows that item 33 ("The tools in the kit are not designed well enough to make stool sample collection easy"), item 40 ("Collecting a sample using a home test kit is inconvenient"), and item 46 ("The tools in the kit are not designed well enough to cleanly collect a stool sample") have been removed. If we recalculate the Cronbach alpha after removing these three items, we obtain an α = .896, that is .90, which is excellent. See the SPSS Reliability Output for the Practicalities factor (12-items) in Appendix Q.

4.7. Confirmatory Factor Analysis Results on the Brief Scale (20-items) (Appendix F)

The 20-items version (short version for four factors) did not have any modifications because it was already a shortened version, and we only did modifications on the full version to slightly improve the model despite a very good model fit on the 46-items version.

Table 11

Brief Scale Fit Indices

Fit Measures	Full Name	Level of acceptance	Value	Comments
χ^2	Chi-square	$p > 0.06$	429.28	OK
Df			164	
RMSEA *	Root Mean Square of Error Approximation	< .05 0.05<x<0.1	.037	
CFI *	Comparative Fit Index	> 0.90	.988	good fit
TLI *	Tuckler-Lewis Index	> 0.90	.986	good fit
SRMR	Standardized Root Mean Square Residual	< .08	.042	

* as a minimum these fitness indices should be satisfied by the measurement model – Please see *Summary of the cut-off values for the fit indices, Table 2.*

As shown above, the factor structure of the briefer BB-CanS scale version showed comparable fit with the full version, with noticeably better results for SRMR than in the full versions (SRMR = .058 in the 46 items-full-version and SRMR = .050 in the improved 39 items-version versus SRMR = .042 in this 20 items-brief scale). The versions of the BB-CanS presented above all show good model fit, with four highly correlated factors (disgust, avoidance, practical difficulties, autonomy), in alignment with derivation study results. The full version's goodness of fit could be slightly improved by removing seven items. Criterion validity between-groups results showed that males and females only differ *slightly* on Avoidance and Autonomy with males being more susceptible to not return their kits based on these two criteria, but do not differ significantly on Disgust and Physical Difficult, and that participants who did not return their last kit endorsed all four barriers more readily (moderate to large magnitude) than those who did.

CHAPTER 5: DISCUSSION

5.1 Current findings fit with derivation study BB-CanS (Goodwin et al., 2021)

The aim of the present study was to confirm the stability of the BB-CanS psychometric qualities on a new (and larger) sample. To this purpose, we sought to ascertain that the four-factor structure identified in previous research from Goodwin & colleagues (2021) measured via 49

survey BB-CanS scale questions on well over 1000 participants 'fit' adequately on the novel and larger sample. Items loadings stability was also verified on the novel sample. Lastly, associations between each factor and kit return likeliness had to remain the same when the BB-CanS was tested on this new sample.

The findings enabled us to confirm the BB-CanS four-factor structural validity, established during Goodwin and colleagues' (2021) derivation study, on a new (and larger) sample of participants. As shown above, the four-factor solution came up with good combined (RMSEA, CFI, TLI, SRMR) fit indices on the 46 items of the BB-CanS scale, indicating that the model fits the data well. Despite meeting the fit criteria, the present study's modification indices findings allowed for a slight scale refinement in removing seven items when they shared residual variance or cross-loaded, as explained and summarised in Table 6 ~~above~~. The resulting 39-item BB-CanS scale came with a better combined (RMSEA, CFI, TLI, SRMR) model fit (~~see~~ Table 7 ~~above~~). The inter-factor correlations between factors was surprisingly high (r = .64 [disgust with autonomy], r = .84 [avoidance with autonomy], r = .74 [avoidance with disgust] , r = .66 [practical with autonomy], r = .87 [practical with disgust] , r = .71 [practical with avoidance], with a ps < .001 for all). A reason may be that participants who returned their kits were not very likely to endorse many barriers nor barrier types, leading to high correlations between barrier factors (r = .80 for autonomy with disgust to r = .94 for autonomy with avoidance). Other reasons could be

conceptual overlap between factors, which is unlikely given how distinctive they are, or the presence of a higher factor that would explain the overlaps between factors, and this could be the object of another study.

Previous findings on differences between the genders on the Avoidance and Autonomy factors were confirmed, with higher scores for males. Autonomy loadings, most particularly, have generally increased compared to the derivation study (see Appendix B). This is most likely due to the gender composition difference with 31.9% males in the first sample (*N* = 136), and 38.7% (*N* = 448) in the second (see Table 4 p.51). Population data showed male participants below 60 years of age were significantly less likely to comply with iFOBT testing. Interestingly, no significant results emerged for the differences between genders on Disgust and Practical difficulties, so no gender bias appears for these two last factors. Although small in magnitude, the gender unbalance around Avoidance and Autonomy, and the significant result on younger males' lower participation may be useful to campaigners in the way they target their audience to improve participation~~s among males~~.

5.2. Current findings fit with previous BB-CanS past research

As we have seen earlier, prior BB-Cans literature (Gregory et al., 2011; Hall et al., 2015; Worthley, 2006) generally categorised individual barrier items according to broad domains (attitudinal, practical, or more broadly psychological). The results allow us to confirm the present study's

empirically derived four-factors can be meaningfully linked to these domains.

(1) Disgust is mostly an *attitudinal* barrier, that is, a set of emotions, beliefs, behaviours or construct towards an object (testing), like negative emotions around bodily functions. Yet, caution must be exercised as this is a broad factor encompassing many individual needs (some people may need assistance) and differing motivations (core, interpersonal or moral disgust).

(2) Avoidance, as a fear of and/or an attempt to avoid negative outcomes is mostly a *psychological barrier*, an internal belief (the outcome does not justify the benefit) that stops people from completing a task (test). To a lesser extent, avoidance can also be an *attitudinal* barrier when it corresponds to a participant's personality trait (Avoidant trait),

(3) Difficulty, understood as a lack of resources and skills in physically completing and returning the kit, is more of a *practical* barrier.

(4) Autonomy is more of a *psychological* barrier (based on a belief 'I won't be told what to do') and to a lesser extent, an *attitudinal* barrier (for people with systematic or autonomy/self-efficacy personality traits).

The derivation study main factors findings (Disgust, Avoidance, Difficulty, Autonomy) represent attitudinal, practical, and psychological barriers that have been confirmed as stable and valid as a result of the present study.

5.3 Current findings fit with Health theories & Models

5.3.1. Fit with Socio-Cognitive Staged Models of intervention

Socio-cognitive models, such as the Health Action Process Approach (HAPA) developed by Ralf Schwarzer in 1992, are socio-cognitive stage models which propose that engaging in healthy behaviour consists of two continuous self-regulatory processes: forming an intention (motivation phase), followed by a stage of planning to act and action (volition phase). Socio-cognitive models stem out of social cognitive theory (Bandurra, 1997). They generally propose that decisions to engage in health-promoting behaviours are influenced by modifiable psychological factors (traits) such as self-efficacy, perceived susceptibility to, perceived severity of the disease, and perceived barriers of the preventative health behaviour (Armitage & Connor, 2000). Of particular importance are behaviour–outcome expectancies and self-efficacy expectancies. A behaviour–outcome expectancy is a belief that a certain behaviour will lead to a particular outcome. A self-efficacy expectancy is a person's conviction that one can perform the actions necessary to produce the desired outcome (Bandura, 1997). For example, a person will not take the FOBT test unless they believe that doing so will decrease their likelihood of developing bowel cancer and that they can take the test successfully (without any hindrances like a practical issue or disgust). Another stage model of health behaviour change is the five stages to decision making TTM developed by James Prochaska and described earlier. While these are valuable considerations, more recently, social cognitive models have been

criticised because variables from these models tend to predict behavioural *intention* better than actual behaviour. A review by Sheeran (2002) estimated the average correlation between intention and behaviour at 0.53, suggesting that "intention only explains about 28% of the variance in behaviour" (cited in Gregory et al., p.2), so the factors that predict intention to screen may differ from those which predict actual behaviour. The present study is more interested in barriers to actual behaviour, and through the BB-CanS tool, seeks to provide the necessary empirical foundation to establish theoretical frameworks that support empirically-based intervention efforts to increase bowel cancer screening compliance.

5.3.2. Fit with the Health Behaviour Model

The widely accepted Health Behaviour Model (Rosenstock, 1996) suggests that the decision to perform a preventive test in the absence of symptoms will not be made unless the individual feels susceptible to the condition, thinks the condition has serious consequences, believes that the preventive test is feasible and appropriate to use, it would reduce perceived susceptibility or severity of the health condition, and there are no serious psychological barriers to the proposed action. The model also suggests that the person will receive a cue or stimulus to perform the test. The cue may be a bodily state, an interpersonal interaction, the impact of the media, or the reception of an invitation for screening (Rosenstock, 1996). Factors in the present study reflect "psychological barriers to the proposed action" (i.e. avoidance) and further inform

appropriate "cues or stimulus (campaign, kit reminder advice) to perform the test" (i.e. campaigns targeting younger males).

5.4. Clinical and practical applications

Consistent with original study, males were more likely to report a lack of autonomy and avoidance as barriers to kit use. This may indicate that males are more sensitive to requests perceived to threaten their personal autonomy when presented with a mailed-out iFOBT test coming from the government or a non-trusted source. It is worth investigating how trusted is the NBCSP in the general population, or if being notified by their medical general practitioner (GP) would circumspect a perceived sense of losing their autonomy through further testing. Younger participants were more likely to endorse each barrier than older cohorts and less likely to return their kit. While these findings are significant, attention must be paid to the magnitude of the effects observed. Their respective magnitude are small, yet, they are significant enough to inform underlying screening barriers associated with age and gender. This provides useful data to support campaigns' targeting. These findings should be considered for future intervention campaigns so that ~~we can increase~~ these groups' participation could be increased in the NBCSP program.

5.5. Targeting of all four barriers is key to intervention outcomes

The criterion validity analysis demonstrated that iFOBT-compliant participants had significantly higher ratings (medium to large in

magnitude) on all barrier types compared to non-participants who did not return the kit. This means that there is a need to target all these barriers during the intervention campaigns in order to reach better iFOBT intake in the 50-74 years old population.

Physical difficulties such as lack of resources and skills in physically completing and returning the kit might be addressed by designing a kit for easier stool collection, or "provide a mechanism to hang the kit in sight of the toilets" (Myers et al., 2022). While the lack of autonomy in making health decisions and the disgust relating to the procedure of collecting and storing stool in the confine of one's home have been addressed earlier, a measure to further address disgust and autonomy barriers could be to include a change to the current screening modality with the addition of another screening modality, e.g. the possibility of screening at the GP's office. In order to address the avoidance of test results and disgust relating to the procedure of collecting and storing stools in the confine of one's home barriers, efforts to normalise the process could be made, through the endorsement of sympathetic and relatable celebrities. Medical general practitioners' and gastroenterologists' associations could also be called upon to promote and normalise the program. Furthermore, avoidant types of barriers should be addressing defensive processing of colorectal cancer risk information. One way of bypassing the disgust barrier effect particular to bowel cancer is aiming the campaigns to early cancer detection 'in general', which can have a 'cancer in general screening' normalising effect - see the flyer

targeting current US population to test for cancer in general ~~inspired the idea~~ (Appendix R). Invitations could be sent via personalised text messages or other mean that would not be seen as threatening to the recipients' sense of autonomy or as 'official' commands to invitees (particularly males

5.6 Strengths and Limitations

Although the current study is based on a larger and more diverse sample (more in alignment with recent Census data representation) than the previous one, the study may still present a number of vulnerabilities to biases.

While the present study collected the necessary sample demographics in order to ascertain an acceptable profile symmetry with the derivation study sample, the psychometric qualities of the instrument have only been tested on gender and age. It did not assess other key socio-social characteristics such as participants' education level, country of origin, whether they are from Aboriginal and Torres Strait Island (ATIS), whether they come from major city, inner regional or outer regional area (ARIA), socio-economic indexes for areas (SEFIA) against the four factors and kit return in the present study. Another potential bias may be introduced by the fact that the questionnaire is in English only.

Although the survey participants' mode of recruitment was hybrid, the main mode was via Facebook and this may introduce selection bias in the study. The question arising is: would non-Facebook users experience different kinds of barriers for iFOBT screening? It would be interesting to

compare the different mode of recruitment groups but this is beyond the scope of this thesis.

Given the length of the current study survey (covering 49 items), particular attention should be paid to *response-burden* on survey validity. Response burden literature defines and measures burden in different ways: (1) task property (e.g. survey length). Our present study is rather lengthy since it includes a rather large number of questions including 49-items, but the shorter scale 20-items validates the longer scale results, so we cannot conclude of response-burden due to the length of the survey bias in the results, (2) respondents' attitudes and beliefs towards the survey (such as interest in the survey). It may be that individuals who did not comply with the screening protocols were not as interested nor willing to participate in the survey, and therefore may qualify as burdened respondents. This was assumed not to be a major issue in the derivation study since it was noted that previous FOBT return rates (r = .01, p = 0.48), and future intentions to return the FOBT kit (r = −0.024, p = 0.590) were unrelated to survey completion (Goodwin et al., 2021, p.2). We registered, in this study and in the derivation study, an approximate~~ly~~ 62%[5] kit return rate among survey participants, while the NBSCP participation rate was only 43%, so people who did not participate to the NBSCP are still well represented, (3) respondents' behaviours & (4) cognitive ability (comprehension, retrieval ability pertaining, for example,

[5] based on 62.3% kit return among participant to derivation study and 61.3% for the present study

number of words in a question, which is relevant if interviewing an ageing population, difficulty recall tasks, judgement, and response) (Beatie et al., 2019). One way to mitigate response-burden risk such as task property (1) and cognitive abilities (4) would be to perhaps consider administering the 20-items questionnaire solely. We may find that the completion rate would increase, and that sample validity could improve.

Another burden factor is the rather compliant nature of the present sample potentially introducing a vulnerability to bias. As mentioned earlier, we registered a 62%[6] kit return rate among survey participants, while the NBSCP participation rate was only 43%. This shows that individuals who did not comply with the screening protocols were still willing to participate in the research.

Another potential limitation of the study is *impression management* (IM), that is, the bias of social desirability when participants answer the questionnaire (Paulhus & John, 1998). This phenomenon is at play ~~especially~~ when the real questions are socially inappropriate. In such cases, direct questions may not provide an accurate portrayal of respondents' attitudes through their responses, as people do not want to appear prejudiced or irrational (disgust). Question items evolving around 'lack of planning' and 'misplacement of kit' may require particular attention in case of potential IM bias, especially since they come as the first questions. Further research could provide control for IM.

[6] based on 62.3% kit return among participant to derivation study and 61.3% for the present study

Lastly, *reactance* should be accounted for. Individuals exposed to cancer screening information with an avoidant type of personality may raise counterarguments against prevention messages and respond too quickly in a biased and defensive manner such as, "I feel fine; I don't need to be tested". Reactance is about rejecting a message and reacting in opposition to it when under pressure. It is also known as "defensive processing bias". Individuals do not always rationally process threatening information such as cancer risk and, as a result, may engage in biased information processing using a variety of defensive strategies (McQueen, 2013, p.10). "The primary goal of a defence mechanism is to reduce threatening Affect" (McQueen, 2013, p.2). This notion is supported by cognitive dissonance theory, which argues that when individuals may be faced with the negative outcome of a personal decision, they are likely to rationalise their behaviours to ameliorate the negative psychological affect that is aroused (Festinger, 1957).

If individuals do not believe that the recommended action will avert the threat (e.g. if they believe that getting a colonoscopy does not work in reducing CRC risk) or if they have low self-efficacy, they are likely to engage in a fear control process through denial, avoidance and other psychological defence strategies instead of taking action to manage the health threat (Pengricht, 2011, p.2). Decreasing the defensive processing of cancer risk information ~~and~~ via questions in the survey design may improve participant's acceptance of participating to the survey. This would ~~and~~ reduce potential defensive bias which could lead to amalgams and

inaccurate answers. Addressing defences mechanisms to improve the effectiveness of future interventions is echoed throughout the literature and deserves attention (for instance, Gerrard, Gibbons, & Reis-Bergan, 1999; Heikkinen, McMaster & Lee, 1991; Patja, & Jallinoja, 2010; Umeh & Stanley, 2005 cited in McQueen, 2013, p.10). In designing a survey on ~~such~~ sensitive issues such as colorectal cancer screening, care should be taken to avoid biased replies due to participants' reactance under pressure. To conclude this section on strength and limitations, while the current study confirms the validity of underlying reasons behind colorectal cancer screening behaviour, future research on BB-CanS may consider the relevance of individual cognitions, emotional markers, and again, the self-efficacy personality trait that may share variance with the four factors.

The derivation study's main factor findings, namely disgust for the process of screening, avoidance of test outcomes, practical difficulties in completing the test, and the need for a sense of greater autonomy, represent attitudinal, practical, and psychological barriers that have been confirmed as stable and valid factors a result of the present study. The present study fulfilled its aim with the findings supporting the results of the 2021 Goodwin and colleagues' derivation study on a larger and more diverse sample. The BB-CanS is therefore a valid scale of psychometric quality made of these four highly correlated barriers to FOBT bowel cancer screening in the 50-to-74 years old segment of the Australian population. The BB-CanS instrument was also able to measure equivalent

constructs across age and gender sub-groups. Although these effects are mild in magnitude, it was observed that males tend to endorse the autonomy and avoidance barriers, while female and younger cohorts tend to endorse all four barriers. We were also able to identify six items for removal to allow for scale refinement, so a superior fit 39-items version is now available. In terms of clinical implications, we can confirm that targeting all four of the barriers (disgust, avoidance, practical difficulties, autonomy) concurrently are key to intervention outcome across age and gender. Our findings can contribute to the implementation of a Health Behaviour Model, or a trans-theoretical model of change, since they validate the identification of 'psychological barriers to proposed action' and can inform an appropriate 'cue or stimulus' (campaign) in the decision to perform a preventative test. Future studies can benefit from measuring the construct across other key socio-social characteristics and measuring cognitive and emotional individual differences, and/or the self-efficacy personality trait, that may share variance in the present study's four barriers to bowel cancer screening. Future studies will also benefit from operationalising compliance (trait) as a mediating factor and controlling for reactance and impression management (social desirability) potential bias.

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Appendix A Barriers endorsed by at least 12% of total sample in Derivation study

Frequencies and percentages of barriers endorsed by at least 12% (over *n* = 50) of the total sample

	Did not return kit (*n*, %)		**Returned kit (*n*, %)**		**Total (*n*, %)**	
I am currently up to date with bowel cancer screening through colonoscopy or another test separate from NBCSP	1	0.9%	7	1.4%	38	2.3%
I will probably put the home test kit somewhere and then forget about it	1	4.7%	3	2.4%	04	4.4%
My lack of planning means I'll never get around to it	0	7.7%	3	2.4%	3	1.8%
Collecting a stool sample is unpleasant	4	7.3%	3	.7%	7	5.7%
I would find it embarrassing to store a stool sample in my fridge	4	7.5%	0	.5%	4	5.0%
I don't like the idea of having a colonoscopy if I receive a positive result	5	1.7%	7	0.2%	2	4.5%
It is unhygienic to store a stool sample in the fridge	0	5.2%	6	.0%	6	3.1%
I struggle to find time to complete the home test kit	5	2.0%	1	.9%	6	3.1%
I don't want to accidentally touch my own stool	7	3.3%	7	.4%	4	2.6%
I don't believe that the home2 test kit results are accurate	9	8.2%	5	.4%	4	2.6%
I don't want to touch my own 56stool	8	3.9%	4	.3%	2	2.2%

Appendix B Final Four factor solution in Derivation study (46 items)

Final four-factor solution including Geomin rotated loadings for barriers to home bowel cancer screening

D (Disgust), Av(Avoidance), P (Practical Difficulties), Au (Autonomy)

	D	Av	P	Au
I feel disgusted at the idea of seeing my stool while collecting it	0.945a			
I think collecting a stool sample is dirty	0.857a			
It is unhygienic to store a stool sample in the fridge	0.808a			
I feel disgusted at the idea of getting close to my stool while collecting it	0.797a			
I don't want to accidentally touch my own stool	0.786a			
I would find it embarrassing to store a stool sample in my fridge	0.755a			
It is embarrassing to send a stool sample to another person for testing	0.733a			
I'm embarrassed to send a stool sample in the mail	0.715a			
It is unhygienic to store a stool sample in my house	0.674a			
Collecting a stool sample is unpleasant	0.661a			
I feel disgusted at the idea of collecting a stool sample	0.645a			
I would find it physically challenging to collect a stool sample	0.456a			
I don't think there is a point in doing the home test kit when it won't stop me from having cancer		0.888a		
It would be too late to do anything if they found something		0.822a		
I would prefer not to know if I have cancer		0.812a		
I think if the test found something, it would put too much strain on my family		0.754a		
I don't want to complete the home test kit because I am scared to find out if I have Cancer		0.736a		
I'm not interested in doing the home test kit now, because I'll deal with cancer if and when I have it		0.722a		
Waiting for the results from the home test kit would be too stressful		0.686a		
I wouldn't bother with the home test kit because I don't have health insurance to cover treatment		0.683a		
Thinking about testing for bowel cancer makes me feel old		0.628a		
I'm worried about the impact it would have on my life if the test found something		0.582a		
I was not involved in the decision to have a home test kit sent to me		0.582a		
I don't like the idea of having a colonoscopy if I receive a positive result		0.567a		
I have more important issues to deal with than bowel cancer screening		0.457a		
I don't need to do the home test kit because I know there is nothing wrong with me		0.387a		
I feel anxious about not knowing how to properly use the home test kit			0.809a	
The stool collection stick is too small			0.723a	
The process of stool collection involves too many steps			0.689a	
I can't understand exactly what I am supposed to do			0.684a	
I do not think that I could use the home test kit correctly			0.663a	
I am worried I might damage the home test kit if I tried to use it			0.624a	
It would be difficult for me to send the home test kit back in the mail			0.623a	
It is easy to lose parts of the home test kit …			0.619a	
The tools in the kit are not designed well enough to cleanly collect a stool sample			0.610a	
I think the process of collecting a stool sample and sending it off is too complicated			0.608a	
The home test kit instructions are too hard to follow			0.578	
Collecting a sample using a home test kit is inconvenient			0.451a	
I wouldn't want to look stupid for not using the home test kit properly			0.444a	

The tools in the kit are not designed well enough to cleanly collect a stool sample	0.453	
I do not want to give my information to the people involved in the program		0.930[a]
I don't know what will happen to my information once I return the kit		0.842[a]
I am concerned about the privacy of my health information		0.594[a]
I won't do the home test kit because my health care is between me and my doctor		0.533[a]
I don't like being told what to do		0.423[a]
I should be in charge of my health and decide when to do the testing		0.421[a]

Note: Loadings <0.3 suppressed; …, item truncated. When using this instrument, the authors recommend measuring three additional items that were commonly endorsed but did not load on any of these factors. (1) I do not need to do the home test kit because I have had a colonoscopy, or another test separate from the National Bowel Cancer Screening Program; (2) My lack of planning means I'll never get around to it; and (3) 36. I will probably put the home test kit somewhere and then forget about it.

[a]Factor loading significant at $p < 0.01$.

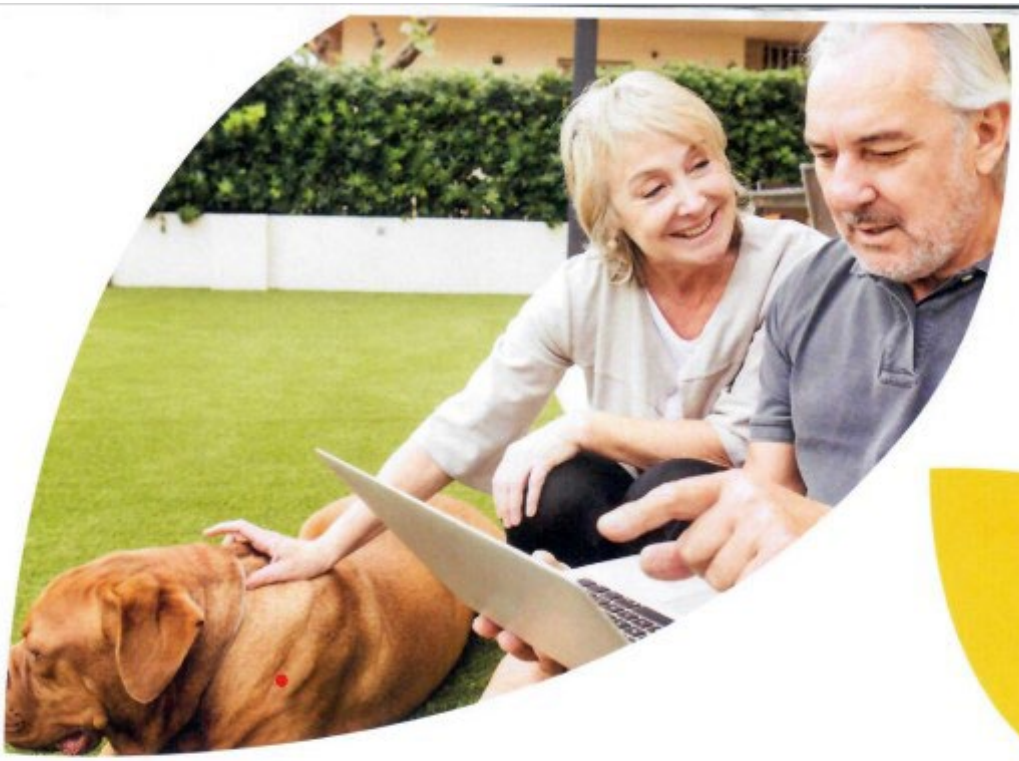
Appendix C Associations between Demographics & Final four factor Solution in Derivation study

Associations between demographic variables (age, gender, SES, and education) and subscale scores moderated by compliance with conditional effects

	Disgust (*b*)	**Avoidance (*b*)**	**Autonomy (*b*)**	**Difficulty (*b*)**
Latest kit returned	−0.285**	−0.205**	−0.229**	−0.206**
Age	−0.198*	−0.074	0.060	−0.206**
Age x latest kit returned	0.634	0.003	−0.391	0.617
Gender (female)	0.026	−0.232*	−0.147	0.010
Gender x latest kit returned	−0.002	0.482*	0.323	0.097
SES	0.001	−0.092	0.010	0.025
SES x latest kit returned	−0.002	0.129	−0.033	−0.023
Education	0.125	−0.191	0.184*	0.213*
Education x latest kit returned	−0.215	0.375	−0.393*	−0.312*

Abbreviations: *b*, standardized beta-weight; SES, socioeconomic status.
**$p < 0.01$.
*$p < 0.05$.

Appendix D Recruitment Flyer



Are you between 50 and 74 years of age?

We need your help!

Researchers at the University of Southern Queensland and Cancer Council Queensland invite you to participate in an important research project that aims to understand health behaviours and improve cancer screening for Australian adults.

Grocery Voucher $50

All we need is 20 to 30 minutes of your time to fill in this simple anonymous online survey.

Participants have the chance to win one of three grocery vouchers - one worth **$50** and two worth **$20** - donated by the University of Southern Queensland.

To participate please visit **www.tinyurl.com/kitmods** or scan this QR code.

UNIVERSITY OF SOUTHERN QUEENSLAND

Cancer Council Queensland

Appendix E Present Study 49-Item and its SPSS & Mplus Item Codification

Item Description	SPSS	MPlus
1. I am currently up to date with bowel cancer screening through colonoscopy or another test separate from the National Bowel Cancer Screening Program	barrier1_n Standalone Item	N1
2. I feel disgusted at the idea of seeing my stool while collecting it	barrier2_d	D1
3. I don't think there is a point in doing the screening test when it won't stop me from having cancer	barrier3_av	Av1
4. I feel anxious about not knowing how to properly use the home test kit	barrier4_p	P1
5. I do not want to give my information to the people involved in this program	barrier5_au	Au1
6. I think collecting a stool sample is dirty	barrier6_d	D2
7. It would be too late to do anything if they found something	barriers7_av	Av2
8. The stool collection stick is too small	barrier8_p	P2
9. I don't know what will happen to my information once I return the kit	barrier9_au	Au2
10. It is unhygienic to store a stool sample in the fridge	barrier10_d	D3
11. I would prefer not to know if I have cancer	barrier11_av	Av3
12. The process of stool collection involves too many steps	barriers12_p	P3
13. I am concerned about the privacy of my health information	barrier 13_au	Au3
14. I feel disgusted at the idea of getting close to my stool while collecting it	barrier14_d	D4
15. I think if the test found something, it would put too much strain on my family	barrier15_av	Av4
16. I can't understand exactly what I am supposed to do	barrier16_p	P4
17. I won't do the home test kit because my health care is between me and my doctor	barrier17_au	Au4
18. I don't want to accidentally touch my own stool	barrier18_d	D5
19. I don't want to complete the home test kit because I am scared to find out if I have cancer	barrier19_av	Av5
20. I do not think that I could use the home test kit correctly	barrier20_p	P5
21. I don't like being told what to do	barrier21_au	Au5
22. I would find it embarrassing to store a stool sample in my fridge	barrier22_d	D6
23. I'm not interested in doing the home test kit now, because I'll deal with cancer if and when I have it	barrier23_av	Av6
24. It is embarrassing to send a stool sample to another person for testing	barrier24_d	D7

25. Waiting for the results from the home test kit would be too stressful	barrier25_av	Av7
26. I am worried I might damage the home test kit if I tried to use it	barrier26_p	P6
27. I'm embarrassed to send a stool sample in the mail	barrier27_d	D8
28. I wouldn't bother with the home test kit because I don't have health insurance to cover treatment	barrier28_av	Av8
29. It would be difficult for me to send the home test kit back in the mail	barrier29_p	P7
30. Thinking about testing for bowel cancer makes me feel old	barrier30_av	Av9
31. It is easy to lose parts of the home test kit, so it can't be completed properly	barrier31_p	P8
32. I'm worried about the impact it would have on my life if the test found something	barrier32_av	Av10
33. The tools in the kit are not designed well enough to make stool sample collection easy	barrier33_p	P9
34. I was not involved in the decision to have a home test kit sent to me	barrier34_av	Av11
35. I think the process of collecting a stool sample and sending it off is too complicated	barrier35_p	P10
36. I will probably put the home test kit somewhere and then forget about it	barrier36_n Standalone Item	N2
37. I don't like the idea of having a colonoscopy if I receive a positive result	barrier37_av	Av12
38. The home test kit instructions are too hard to follow	barrier38_p	P11
39. I have more important issues to deal with than bowel cancer screening	barrier39_av	Av13
40. Collecting a sample using a home test kit is inconvenient	barrier40_p	P12
41. I should be in charge of my health and decide when to do the testing (barrier41_au)	barrier41_au	Au6
42. It is unhygienic to store a stool sample in my house	barrier42_d	D9
43. I don't need to do the home test kit because I know there is nothing wrong with me	barrier43_av	Av14
44. I wouldn't want to look stupid for not using the home test kit properly	barrier44_p	P13
45. Collecting a stool sample is unpleasant	barrier45_d	D10
46. The tools in the kit are not designed well enough to cleanly collect a stool sample	barrier46_p	P14
47. My lack of planning means I'll never get around to it	barrier47_n Standalone Item	N3
48. I feel disgusted at the idea of collecting a stool sample	barrier48_d	D11
49. I would find it physically challenging to collect a stool sample	barriers49_d	D12

Note. au_ stands for Autonomy factor, d_ for Disgust, p_ for Practical, av_ for Avoidant, and the 3x Standalone items d_

Appendix F Briefer Scale (20-items)

I feel disgusted at the idea of seeing my stool while collecting it	barrier2_d	D1
I don’t think there is a point in doing the screening test when it won’t stop me from having cancer	barrier3_av	Av1
I feel anxious about not knowing how to properly use the home test kit	barrier4_p	P1
I do not want to give my information to the people involved in this program	barrier5_au	Au1
I think collecting a stool sample is dirty	barrier6_d	D2
It would be too late to do anything if they found something	barriers7_av	Av2
The stool collection stick is too small	barrier8_p	P2
I don’t know what will happen to my information once I return the kit	barrier9_au	Au2
It is unhygienic to store a stool sample in the fridge	barrier10_d	D3
I would prefer not to know if I have cancer	barrier11_av	Av3
The process of stool collection involves too many steps	barriers12_p	P3
I am concerned about the privacy of my health information	barrier13_au	Au3
I feel disgusted at the idea of getting close to my stool while collecting it	barrier14_d	D4
I think if the test found something, it would put too much strain on my family	barrier15_av	Av4
I can't understand exactly what I am supposed to do	barrier16_p	P4
I won’t do the home test kit because my health care is between me and my doctor	barrier17_au	Au4
I don’t want to accidentally touch my own stool	barrier18_d	D5
I don't want to complete the home test kit because I am scared to find out if I have cancer	barrier19_av	Av5
I do not think that I could use the home test kit correctly	barrier20_p	P5
I don’t like being told what to do (barrier21_au)	barrier21_au	Au5

Appendix H Mplus Four Factors 46-items Scale CFA Results

Mplus VERSION 8.6
MUTHEN & MUTHEN
07/23/2022 12:09 PM
OUTPUT SECTIONS

- Input Instructions
- Input Warnings And Errors
- Summary Of Analysis
- Summary Of Data
- Covariance Coverage Of Data
- Univariate Proportions And Counts For Categorical Variables
- Model Fit Information
- Model Results
- Standardized Model Results
- R-square
- Confidence Intervals Of Model Results
- Confidence Intervals Of Standardized Model Results
- Model Modification Indices

INPUT INSTRUCTIONS

```
TITLE: CFA

DATA: FILE = C:\Users\w0001047\Desktop\Measure Invariance
Results\Latest\Original.csv;

VARIABLE:
NAMES ARE age gender return_kit N1 D1 Av1 P1 Au1 D2 Av2 P2 Au2 D3 Av3
P3 Au3 D4 Av4 P4 Au4 D5 Av5 P5 Au5 D6 Av6 D7 Av7 P6 D8 Av8
P7 Av9 P8 Av10 P9 Av11 P10 N2 Av12 P11 Av13 P12 Au6 D9 Av14
P13 D10 P14 N3 D11 D12;

CATEGORICAL ARE D1 Av1 P1 Au1 D2 Av2 P2 Au2 D3 Av3
P3 Au3 D4 Av4 P4 Au4 D5 Av5 P5 Au5 D6 Av6 D7 Av7 P6 D8 Av8
P7 Av9 P8 Av10 P9 Av11 P10 Av12 P11 Av13 P12 Au6 D9 Av14
P13 D10 P14 D11 D12;

USEVARIABLES ARE D1 Av1 P1 Au1 D2 Av2 P2 Au2 D3 Av3
P3 Au3 D4 Av4 P4 Au4 D5 Av5 P5 Au5 D6 Av6 D7 Av7 P6 D8 Av8
P7 Av9 P8 Av10 P9 Av11 P10 Av12 P11 Av13 P12 Au6 D9 Av14
P13 D10 P14 D11 D12;

MISSING=ALL (999);

MODEL:
Autonomy BY Au1 Au2 Au3 Au4 Au5 Au6;
Disgust BY D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12;
Avoidance BY Av1 Av2 Av3 Av4 Av5 Av6 Av7 Av8 Av9 Av10 Av11 Av12 Av13 Av14;
Practical BY P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14;


OUTPUT: StdYX; MODINDICES(all 40);
CINTERVAL;
```

INPUT READING TERMINATED NORMALLY

CFA

SUMMARY OF ANALYSIS

Number of groups 1
Number of observations 1158

Number of dependent variables 46
Number of independent variables 0
Number of continuous latent variables 4

Observed dependent variables

Binary and ordered categorical (ordinal)

D1	AV1	P1	AU1	D2	AV2
P2	AU2	D3	AV3	P3	AU3
D4	AV4	P4	AU4	D5	AV5
P5	AU5	D6	AV6	D7	AV7
P6	D8	AV8	P7	AV9	P8
AV10	P9	AV11	P10	AV12	P11
AV13	P12	AU6	D9	AV14	P13
D10	P14	D11	D12		

Continuous latent variables
AUTONOMY DISGUST AVOIDANC PRACTICA

Estimator WLSMV
Maximum number of iterations 1000
Convergence criterion 0.500D-04
Maximum number of steepest descent iterations 20
Maximum number of iterations for H1 2000
Convergence criterion for H1 0.100D-03
Parameterization DELTA
Link PROBIT

Input data file(s)
C:\Users\w0001047\Desktop\Measure Invariance Results\Latest\Original.csv

Input data format FREE

SUMMARY OF DATA

Number of missing data patterns 1

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.100

PROPORTION OF DATA PRESENT

Covariance Coverage

D1	AV1	P1	AU1	D2

D1	1.000				
AV1	1.000	1.000			
P1	1.000	1.000	1.000		
AU1	1.000	1.000	1.000	1.000	
D2	1.000	1.000	1.000	1.000	1.000
AV2	1.000	1.000	1.000	1.000	1.000
P2	1.000	1.000	1.000	1.000	1.000
AU2	1.000	1.000	1.000	1.000	1.000
D3	1.000	1.000	1.000	1.000	1.000
AV3	1.000	1.000	1.000	1.000	1.000
P3	1.000	1.000	1.000	1.000	1.000
AU3	1.000	1.000	1.000	1.000	1.000
D4	1.000	1.000	1.000	1.000	1.000
AV4	1.000	1.000	1.000	1.000	1.000
P4	1.000	1.000	1.000	1.000	1.000
AU4	1.000	1.000	1.000	1.000	1.000
D5	1.000	1.000	1.000	1.000	1.000
AV5	1.000	1.000	1.000	1.000	1.000
P5	1.000	1.000	1.000	1.000	1.000
AU5	1.000	1.000	1.000	1.000	1.000
D6	1.000	1.000	1.000	1.000	1.000
AV6	1.000	1.000	1.000	1.000	1.000
D7	1.000	1.000	1.000	1.000	1.000
AV7	1.000	1.000	1.000	1.000	1.000
P6	1.000	1.000	1.000	1.000	1.000
D8	1.000	1.000	1.000	1.000	1.000
AV8	1.000	1.000	1.000	1.000	1.000
P7	1.000	1.000	1.000	1.000	1.000
AV9	1.000	1.000	1.000	1.000	1.000
P8	1.000	1.000	1.000	1.000	1.000
AV10	1.000	1.000	1.000	1.000	1.000
P9	1.000	1.000	1.000	1.000	1.000
AV11	1.000	1.000	1.000	1.000	1.000
P10	1.000	1.000	1.000	1.000	1.000
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
P12	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000
D12	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	AV2	P2	AU2	D3	AV3
AV2	1.000				
P2	1.000	1.000			
AU2	1.000	1.000	1.000		
D3	1.000	1.000	1.000	1.000	
AV3	1.000	1.000	1.000	1.000	1.000
P3	1.000	1.000	1.000	1.000	1.000
AU3	1.000	1.000	1.000	1.000	1.000
D4	1.000	1.000	1.000	1.000	1.000
AV4	1.000	1.000	1.000	1.000	1.000
P4	1.000	1.000	1.000	1.000	1.000
AU4	1.000	1.000	1.000	1.000	1.000

D5	1.000	1.000	1.000	1.000	1.000
AV5	1.000	1.000	1.000	1.000	1.000
P5	1.000	1.000	1.000	1.000	1.000
AU5	1.000	1.000	1.000	1.000	1.000
D6	1.000	1.000	1.000	1.000	1.000
AV6	1.000	1.000	1.000	1.000	1.000
D7	1.000	1.000	1.000	1.000	1.000
AV7	1.000	1.000	1.000	1.000	1.000
P6	1.000	1.000	1.000	1.000	1.000
D8	1.000	1.000	1.000	1.000	1.000
AV8	1.000	1.000	1.000	1.000	1.000
P7	1.000	1.000	1.000	1.000	1.000
AV9	1.000	1.000	1.000	1.000	1.000
P8	1.000	1.000	1.000	1.000	1.000
AV10	1.000	1.000	1.000	1.000	1.000
P9	1.000	1.000	1.000	1.000	1.000
AV11	1.000	1.000	1.000	1.000	1.000
P10	1.000	1.000	1.000	1.000	1.000
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
P12	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000
D12	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	P3	AU3	D4	AV4	P4	
P3	1.000					
AU3	1.000	1.000				
D4	1.000	1.000	1.000			
AV4	1.000	1.000	1.000	1.000		
P4	1.000	1.000	1.000	1.000	1.000	
AU4	1.000	1.000	1.000	1.000	1.000	
D5	1.000	1.000	1.000	1.000	1.000	
AV5	1.000	1.000	1.000	1.000	1.000	
P5	1.000	1.000	1.000	1.000	1.000	
AU5	1.000	1.000	1.000	1.000	1.000	
D6	1.000	1.000	1.000	1.000	1.000	
AV6	1.000	1.000	1.000	1.000	1.000	
D7	1.000	1.000	1.000	1.000	1.000	
AV7	1.000	1.000	1.000	1.000	1.000	
P6	1.000	1.000	1.000	1.000	1.000	
D8	1.000	1.000	1.000	1.000	1.000	
AV8	1.000	1.000	1.000	1.000	1.000	
P7	1.000	1.000	1.000	1.000	1.000	
AV9	1.000	1.000	1.000	1.000	1.000	
P8	1.000	1.000	1.000	1.000	1.000	
AV10	1.000	1.000	1.000	1.000	1.000	
P9	1.000	1.000	1.000	1.000	1.000	
AV11	1.000	1.000	1.000	1.000	1.000	
P10	1.000	1.000	1.000	1.000	1.000	
AV12	1.000	1.000	1.000	1.000	1.000	
P11	1.000	1.000	1.000	1.000	1.000	
AV13	1.000	1.000	1.000	1.000	1.000	
P12	1.000	1.000	1.000	1.000	1.000	

AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000
D12	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	AU4	D5	AV5	P5	AU5
AU4	1.000				
D5	1.000	1.000			
AV5	1.000	1.000	1.000		
P5	1.000	1.000	1.000	1.000	
AU5	1.000	1.000	1.000	1.000	1.000
D6	1.000	1.000	1.000	1.000	1.000
AV6	1.000	1.000	1.000	1.000	1.000
D7	1.000	1.000	1.000	1.000	1.000
AV7	1.000	1.000	1.000	1.000	1.000
P6	1.000	1.000	1.000	1.000	1.000
D8	1.000	1.000	1.000	1.000	1.000
AV8	1.000	1.000	1.000	1.000	1.000
P7	1.000	1.000	1.000	1.000	1.000
AV9	1.000	1.000	1.000	1.000	1.000
P8	1.000	1.000	1.000	1.000	1.000
AV10	1.000	1.000	1.000	1.000	1.000
P9	1.000	1.000	1.000	1.000	1.000
AV11	1.000	1.000	1.000	1.000	1.000
P10	1.000	1.000	1.000	1.000	1.000
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
P12	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000
D12	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	D6	AV6	D7	AV7	P6
D6	1.000				
AV6	1.000	1.000			
D7	1.000	1.000	1.000		
AV7	1.000	1.000	1.000	1.000	
P6	1.000	1.000	1.000	1.000	1.000
D8	1.000	1.000	1.000	1.000	1.000
AV8	1.000	1.000	1.000	1.000	1.000
P7	1.000	1.000	1.000	1.000	1.000
AV9	1.000	1.000	1.000	1.000	1.000
P8	1.000	1.000	1.000	1.000	1.000
AV10	1.000	1.000	1.000	1.000	1.000
P9	1.000	1.000	1.000	1.000	1.000
AV11	1.000	1.000	1.000	1.000	1.000
P10	1.000	1.000	1.000	1.000	1.000

AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
P12	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000
D12	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	D8	AV8	P7	AV9	P8
D8	1.000				
AV8	1.000	1.000			
P7	1.000	1.000	1.000		
AV9	1.000	1.000	1.000	1.000	
P8	1.000	1.000	1.000	1.000	1.000
AV10	1.000	1.000	1.000	1.000	1.000
P9	1.000	1.000	1.000	1.000	1.000
AV11	1.000	1.000	1.000	1.000	1.000
P10	1.000	1.000	1.000	1.000	1.000
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
P12	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000
D12	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	AV10	P9	AV11	P10	AV12
AV10	1.000				
P9	1.000	1.000			
AV11	1.000	1.000	1.000		
P10	1.000	1.000	1.000	1.000	
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
P12	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000
D12	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	P11	AV13	P12	AU6	D9

P11	1.000				
AV13	1.000	1.000			
P12	1.000	1.000	1.000		
AU6	1.000	1.000	1.000	1.000	
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000
D12	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	AV14	P13	D10	P14	D11
AV14	1.000				
P13	1.000	1.000			
D10	1.000	1.000	1.000		
P14	1.000	1.000	1.000	1.000	
D11	1.000	1.000	1.000	1.000	1.000
D12	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	D12
D12	1.000

UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

D1		
Category 1	0.877	1015.000
Category 2	0.086	100.000
Category 3	0.019	22.000
Category 4	0.018	21.000
AV1		
Category 1	0.929	1076.000
Category 2	0.042	49.000
Category 3	0.016	18.000
Category 4	0.013	15.000
P1		
Category 1	0.875	1013.000
Category 2	0.101	117.000
Category 3	0.018	21.000
Category 4	0.006	7.000
AU1		
Category 1	0.943	1092.000
Category 2	0.028	33.000
Category 3	0.014	16.000
Category 4	0.015	17.000
D2		
Category 1	0.883	1023.000
Category 2	0.079	92.000
Category 3	0.023	27.000
Category 4	0.014	16.000
AV2		
Category 1	0.927	1074.000
Category 2	0.043	50.000
Category 3	0.017	20.000
Category 4	0.012	14.000

P2		
Category 1	0.876	1014.000
Category 2	0.095	110.000
Category 3	0.016	18.000
Category 4	0.014	16.000
AU2		
Category 1	0.901	1043.000
Category 2	0.066	77.000
Category 3	0.016	18.000
Category 4	0.017	20.000
D3		
Category 1	0.817	946.000
Category 2	0.122	141.000
Category 3	0.034	39.000
Category 4	0.028	32.000
AV3		
Category 1	0.908	1051.000
Category 2	0.061	71.000
Category 3	0.018	21.000
Category 4	0.013	15.000
P3		
Category 1	0.850	984.000
Category 2	0.113	131.000
Category 3	0.028	32.000
Category 4	0.009	11.000
AU3		
Category 1	0.880	1019.000
Category 2	0.086	100.000
Category 3	0.016	19.000
Category 4	0.017	20.000
D4		
Category 1	0.886	1026.000
Category 2	0.079	92.000
Category 3	0.018	21.000
Category 4	0.016	19.000
AV4		
Category 1	0.919	1064.000
Category 2	0.056	65.000
Category 3	0.012	14.000
Category 4	0.013	15.000
P4		
Category 1	0.921	1067.000
Category 2	0.066	77.000
Category 3	0.009	10.000
Category 4	0.003	4.000
AU4		
Category 1	0.931	1078.000
Category 2	0.041	47.000
Category 3	0.013	15.000
Category 4	0.016	18.000
D5		
Category 1	0.886	1026.000
Category 2	0.085	98.000
Category 3	0.016	19.000
Category 4	0.013	15.000
AV5		
Category 1	0.897	1039.000
Category 2	0.074	86.000
Category 3	0.014	16.000
Category 4	0.015	17.000
P5		
Category 1	0.902	1044.000
Category 2	0.075	87.000

Category 3	0.014	16.000
Category 4	0.009	11.000
AU5		
Category 1	0.941	1090.000
Category 2	0.035	41.000
Category 3	0.013	15.000
Category 4	0.010	12.000
D6		
Category 1	0.842	975.000
Category 2	0.110	127.000
Category 3	0.028	32.000
Category 4	0.021	24.000
AV6		
Category 1	0.934	1082.000
Category 2	0.045	52.000
Category 3	0.013	15.000
Category 4	0.008	9.000
D7		
Category 1	0.935	1083.000
Category 2	0.043	50.000
Category 3	0.013	15.000
Category 4	0.009	10.000
AV7		
Category 1	0.926	1072.000
Category 2	0.047	55.000
Category 3	0.017	20.000
Category 4	0.009	11.000
P6		
Category 1	0.952	1102.000
Category 2	0.039	45.000
Category 3	0.005	6.000
Category 4	0.004	5.000
D8		
Category 1	0.914	1058.000
Category 2	0.066	76.000
Category 3	0.009	11.000
Category 4	0.011	13.000
AV8		
Category 1	0.948	1098.000
Category 2	0.035	40.000
Category 3	0.008	9.000
Category 4	0.009	11.000
P7		
Category 1	0.921	1067.000
Category 2	0.054	62.000
Category 3	0.016	19.000
Category 4	0.009	10.000
AV9		
Category 1	0.930	1077.000
Category 2	0.047	55.000
Category 3	0.013	15.000
Category 4	0.009	11.000
P8		
Category 1	0.941	1090.000
Category 2	0.049	57.000
Category 3	0.007	8.000
Category 4	0.003	3.000
AV10		
Category 1	0.908	1052.000
Category 2	0.064	74.000
Category 3	0.016	18.000
Category 4	0.012	14.000
P9		

Category 1	0.875	1013.000
Category 2	0.104	120.000
Category 3	0.012	14.000
Category 4	0.009	11.000
AV11		
Category 1	0.924	1070.000
Category 2	0.045	52.000
Category 3	0.016	18.000
Category 4	0.016	18.000
P10		
Category 1	0.885	1025.000
Category 2	0.088	102.000
Category 3	0.016	19.000
Category 4	0.010	12.000
AV12		
Category 1	0.870	1008.000
Category 2	0.079	92.000
Category 3	0.028	32.000
Category 4	0.022	26.000
P11		
Category 1	0.927	1074.000
Category 2	0.060	69.000
Category 3	0.010	12.000
Category 4	0.003	3.000
AV13		
Category 1	0.911	1055.000
Category 2	0.054	62.000
Category 3	0.023	27.000
Category 4	0.012	14.000
P12		
Category 1	0.851	986.000
Category 2	0.111	129.000
Category 3	0.026	30.000
Category 4	0.011	13.000
AU6		
Category 1	0.925	1071.000
Category 2	0.048	56.000
Category 3	0.012	14.000
Category 4	0.015	17.000
D9		
Category 1	0.883	1022.000
Category 2	0.083	96.000
Category 3	0.021	24.000
Category 4	0.014	16.000
AV14		
Category 1	0.944	1093.000
Category 2	0.034	39.000
Category 3	0.016	18.000
Category 4	0.007	8.000
P13		
Category 1	0.940	1089.000
Category 2	0.045	52.000
Category 3	0.006	7.000
Category 4	0.009	10.000
D10		
Category 1	0.831	962.000
Category 2	0.122	141.000
Category 3	0.028	32.000
Category 4	0.020	23.000
P14		
Category 1	0.869	1006.000
Category 2	0.107	124.000
Category 3	0.010	12.000

Category 4	0.014	16.000
D11		
Category 1	0.873	1011.000
Category 2	0.095	110.000
Category 3	0.016	19.000
Category 4	0.016	18.000
D12		
Category 1	0.896	1038.000
Category 2	0.077	89.000
Category 3	0.015	17.000
Category 4	0.012	14.000

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 190

Chi-Square Test of Model Fit

Value	2301.382*
Degrees of Freedom	983
P-Value	0.0000

* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.034
90 Percent C.I.	0.032 0.036
Probability RMSEA <= .05	1.000

CFI/TLI

CFI	0.972
TLI	0.970

Chi-Square Test of Model Fit for the Baseline Model

Value	47345.628
Degrees of Freedom	1035
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.058

Optimum Function Value for Weighted Least-Squares Estimator

Value	0.10393784D+01

MODEL RESULTS

Two-Tailed

	Estimate	S.E.	Est./S.E.	P-Value
AUTONOMY BY				
AU1	1.000	0.000	999.000	999.000
AU2	1.034	0.031	33.367	0.000
AU3	0.951	0.028	34.126	0.000
AU4	1.022	0.034	29.939	0.000
AU5	1.002	0.039	25.600	0.000
AU6	1.004	0.041	24.290	0.000
DISGUST BY				
D1	1.000	0.000	999.000	999.000
D2	1.037	0.013	81.263	0.000
D3	1.026	0.018	57.016	0.000
D4	1.062	0.015	68.641	0.000
D5	1.043	0.017	60.093	0.000
D6	1.048	0.016	64.453	0.000
D7	1.063	0.020	54.230	0.000
D8	1.022	0.020	50.474	0.000
D9	1.037	0.020	51.988	0.000
D10	1.054	0.017	61.095	0.000
D11	1.065	0.017	61.612	0.000
D12	0.909	0.028	31.987	0.000
AVOIDANC BY				
AV1	1.000	0.000	999.000	999.000
AV2	1.058	0.040	26.243	0.000
AV3	1.070	0.034	31.919	0.000
AV4	1.058	0.036	29.654	0.000
AV5	1.042	0.036	28.944	0.000
AV6	1.082	0.039	27.876	0.000
AV7	1.068	0.040	26.533	0.000
AV8	0.987	0.048	20.764	0.000
AV9	1.063	0.044	24.297	0.000
AV10	1.092	0.036	30.420	0.000
AV11	1.061	0.039	26.967	0.000
AV12	0.997	0.037	27.283	0.000
AV13	0.972	0.042	22.998	0.000
AV14	0.946	0.056	17.015	0.000
PRACTICA BY				
P1	1.000	0.000	999.000	999.000
P2	0.981	0.029	33.819	0.000
P3	1.071	0.030	36.107	0.000
P4	0.927	0.039	23.926	0.000
P5	1.031	0.029	35.068	0.000
P6	0.945	0.040	23.377	0.000
P7	0.899	0.041	22.169	0.000
P8	0.924	0.044	21.091	0.000
P9	0.983	0.027	36.090	0.000
P10	1.066	0.026	41.175	0.000
P11	0.995	0.033	29.690	0.000
P12	1.080	0.030	36.039	0.000
P13	1.065	0.030	35.550	0.000
P14	1.052	0.024	43.281	0.000
DISGUST WITH				
AUTONOMY	0.527	0.036	14.765	0.000
AVOIDANC WITH				
AUTONOMY	0.656	0.036	18.370	0.000
DISGUST	0.569	0.032	17.659	0.000

PRACTICA WITH				
AUTONOMY	0.518	0.036	14.224	0.000
DISGUST	0.667	0.027	24.442	0.000
AVOIDANCE	0.516	0.033	15.523	0.000
Thresholds				
D1$1	1.158	0.047	24.442	0.000
D1$2	1.785	0.069	26.054	0.000
D1$3	2.094	0.088	23.789	0.000
AV1$1	1.470	0.056	26.413	0.000
AV1$2	1.903	0.075	25.380	0.000
AV1$3	2.228	0.100	22.372	0.000
P1$1	1.149	0.047	24.355	0.000
P1$2	1.974	0.079	24.856	0.000
P1$3	2.510	0.133	18.856	0.000
AU1$1	1.581	0.060	26.543	0.000
AU1$2	1.903	0.075	25.380	0.000
AU1$3	2.179	0.095	22.916	0.000
D2$1	1.192	0.048	24.778	0.000
D2$2	1.785	0.069	26.054	0.000
D2$3	2.202	0.097	22.655	0.000
AV2$1	1.457	0.055	26.380	0.000
AV2$2	1.890	0.074	25.467	0.000
AV2$3	2.254	0.102	22.066	0.000
P2$1	1.154	0.047	24.398	0.000
P2$2	1.890	0.074	25.467	0.000
P2$3	2.202	0.097	22.655	0.000
AU2$1	1.285	0.050	25.540	0.000
AU2$2	1.841	0.071	25.768	0.000
AU2$3	2.114	0.090	23.593	0.000
D3$1	0.904	0.043	21.089	0.000
D3$2	1.544	0.058	26.532	0.000
D3$3	1.917	0.076	25.287	0.000
AV3$1	1.326	0.051	25.804	0.000
AV3$2	1.865	0.073	25.627	0.000
AV3$3	2.228	0.100	22.372	0.000
P3$1	1.035	0.045	23.015	0.000
P3$2	1.785	0.069	26.054	0.000
P3$3	2.346	0.112	20.969	0.000
AU3$1	1.175	0.048	24.612	0.000
AU3$2	1.829	0.071	25.833	0.000
AU3$3	2.114	0.090	23.593	0.000
D4$1	1.206	0.048	24.900	0.000
D4$2	1.818	0.070	25.894	0.000
D4$3	2.134	0.091	23.383	0.000
AV4$1	1.397	0.053	26.169	0.000
AV4$2	1.959	0.078	24.973	0.000
AV4$3	2.228	0.100	22.372	0.000
P4$1	1.415	0.054	26.239	0.000
P4$2	2.254	0.102	22.066	0.000
P4$3	2.701	0.166	16.273	0.000
AU4$1	1.483	0.056	26.443	0.000
AU4$2	1.903	0.075	25.380	0.000
AU4$3	2.156	0.093	23.158	0.000
D5$1	1.206	0.048	24.900	0.000
D5$2	1.890	0.074	25.467	0.000
D5$3	2.228	0.100	22.372	0.000
AV5$1	1.266	0.050	25.398	0.000
AV5$2	1.903	0.075	25.380	0.000
AV5$3	2.179	0.095	22.916	0.000
P5$1	1.290	0.050	25.574	0.000
P5$2	1.990	0.080	24.730	0.000
P5$3	2.346	0.112	20.969	0.000

AU5$1	1.566	0.059	26.542	0.000
AU5$2	1.990	0.080	24.730	0.000
AU5$3	2.313	0.108	21.369	0.000
D6$1	1.003	0.044	22.573	0.000
D6$2	1.661	0.063	26.459	0.000
D6$3	2.039	0.084	24.305	0.000
AV6$1	1.509	0.057	26.493	0.000
AV6$2	2.039	0.084	24.305	0.000
AV6$3	2.419	0.121	20.035	0.000
D7$1	1.516	0.057	26.503	0.000
D7$2	2.022	0.083	24.455	0.000
D7$3	2.381	0.116	20.527	0.000
AV7$1	1.445	0.055	26.343	0.000
AV7$2	1.931	0.077	25.189	0.000
AV7$3	2.346	0.112	20.969	0.000
P6$1	1.661	0.063	26.459	0.000
P6$2	2.346	0.112	20.969	0.000
P6$3	2.626	0.152	17.290	0.000
D8$1	1.364	0.052	26.012	0.000
D8$2	2.039	0.084	24.305	0.000
D8$3	2.283	0.105	21.733	0.000
AV8$1	1.628	0.061	26.512	0.000
AV8$2	2.114	0.090	23.593	0.000
AV8$3	2.346	0.112	20.969	0.000
P7$1	1.415	0.054	26.239	0.000
P7$2	1.959	0.078	24.973	0.000
P7$3	2.381	0.116	20.527	0.000
AV9$1	1.476	0.056	26.429	0.000
AV9$2	2.006	0.082	24.597	0.000
AV9$3	2.346	0.112	20.969	0.000
P8$1	1.566	0.059	26.542	0.000
P8$2	2.346	0.112	20.969	0.000
P8$3	2.796	0.186	14.999	0.000
AV10$1	1.331	0.052	25.835	0.000
AV10$2	1.917	0.076	25.287	0.000
AV10$3	2.254	0.102	22.066	0.000
P9$1	1.149	0.047	24.355	0.000
P9$2	2.022	0.083	24.455	0.000
P9$3	2.346	0.112	20.969	0.000
AV11$1	1.433	0.054	26.304	0.000
AV11$2	1.865	0.073	25.627	0.000
AV11$3	2.156	0.093	23.158	0.000
P10$1	1.201	0.048	24.860	0.000
P10$2	1.931	0.077	25.189	0.000
P10$3	2.313	0.108	21.369	0.000
AV12$1	1.129	0.047	24.135	0.000
AV12$2	1.644	0.062	26.489	0.000
AV12$3	2.006	0.082	24.597	0.000
P11$1	1.457	0.055	26.380	0.000
P11$2	2.228	0.100	22.372	0.000
P11$3	2.796	0.186	14.999	0.000
AV13$1	1.347	0.052	25.926	0.000
AV13$2	1.807	0.070	25.950	0.000
AV13$3	2.254	0.102	22.066	0.000
P12$1	1.043	0.045	23.112	0.000
P12$2	1.785	0.069	26.054	0.000
P12$3	2.283	0.105	21.733	0.000
AU6$1	1.439	0.055	26.324	0.000
AU6$2	1.931	0.077	25.189	0.000
AU6$3	2.179	0.095	22.916	0.000
D9$1	1.188	0.048	24.737	0.000
D9$2	1.818	0.070	25.894	0.000
D9$3	2.202	0.097	22.655	0.000

AV14$1	1.588	0.060	26.541	0.000
AV14$2	2.006	0.082	24.597	0.000
AV14$3	2.462	0.126	19.483	0.000
P13$1	1.558	0.059	26.540	0.000
P13$2	2.179	0.095	22.916	0.000
P13$3	2.381	0.116	20.527	0.000
D10$1	0.957	0.044	21.918	0.000
D10$2	1.670	0.063	26.442	0.000
D10$3	2.057	0.085	24.144	0.000
P14$1	1.120	0.047	24.046	0.000
P14$2	1.974	0.079	24.856	0.000
P14$3	2.202	0.097	22.655	0.000
D11$1	1.141	0.047	24.268	0.000
D11$2	1.853	0.072	25.700	0.000
D11$3	2.156	0.093	23.158	0.000
D12$1	1.261	0.050	25.362	0.000
D12$2	1.931	0.077	25.189	0.000
D12$3	2.254	0.102	22.066	0.000

Variances

AUTONOMY	0.841	0.042	19.985	0.000
DISGUST	0.809	0.026	31.000	0.000
AVOIDANCE	0.721	0.047	15.190	0.000
PRACTICAL	0.725	0.035	20.431	0.000

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.197E-03
(ratio of smallest to largest eigenvalue)

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Two-Tailed Est./S.E.	P-Value
AUTONOMY BY				
AU1	0.917	0.023	39.970	0.000
AU2	0.948	0.016	58.520	0.000
AU3	0.872	0.019	45.956	0.000
AU4	0.938	0.021	43.770	0.000
AU5	0.919	0.030	30.887	0.000
AU6	0.921	0.027	34.537	0.000
DISGUST BY				
D1	0.899	0.015	62.000	0.000
D2	0.932	0.011	84.865	0.000
D3	0.922	0.010	88.012	0.000
D4	0.955	0.008	112.646	0.000
D5	0.938	0.009	102.003	0.000
D6	0.942	0.008	114.246	0.000
D7	0.956	0.013	72.880	0.000
D8	0.919	0.013	70.394	0.000
D9	0.933	0.012	80.727	0.000
D10	0.948	0.007	130.672	0.000
D11	0.958	0.007	130.972	0.000
D12	0.817	0.025	33.165	0.000
AVOIDANC BY				

AV1	0.849	0.028	30.379	0.000
AV2	0.899	0.021	42.459	0.000
AV3	0.909	0.017	54.410	0.000
AV4	0.898	0.017	53.678	0.000
AV5	0.884	0.017	52.797	0.000
AV6	0.918	0.019	47.359	0.000
AV7	0.907	0.020	46.236	0.000
AV8	0.838	0.032	26.128	0.000
AV9	0.902	0.023	40.020	0.000
AV10	0.927	0.012	75.470	0.000
AV11	0.900	0.024	37.652	0.000
AV12	0.847	0.020	41.993	0.000
AV13	0.825	0.027	30.571	0.000
AV14	0.803	0.038	21.246	0.000

PRACTICA BY

P1	0.851	0.021	40.862	0.000
P2	0.835	0.022	38.746	0.000
P3	0.911	0.015	62.215	0.000
P4	0.789	0.032	24.984	0.000
P5	0.878	0.019	46.819	0.000
P6	0.804	0.035	22.879	0.000
P7	0.765	0.035	22.115	0.000
P8	0.787	0.034	23.156	0.000
P9	0.837	0.020	42.190	0.000
P10	0.907	0.015	59.866	0.000
P11	0.847	0.026	32.570	0.000
P12	0.920	0.014	66.012	0.000
P13	0.906	0.021	43.367	0.000
P14	0.896	0.014	64.108	0.000

DISGUST WITH

AUTONOMY	0.638	0.035	18.033	0.000

AVOIDANC WITH

AUTONOMY	0.843	0.019	43.569	0.000
DISGUST	0.745	0.029	26.021	0.000

PRACTICA WITH

AUTONOMY	0.664	0.035	19.188	0.000
DISGUST	0.872	0.014	61.226	0.000
AVOIDANCE	0.714	0.031	23.121	0.000

Thresholds

D1$1	1.158	0.047	24.442	0.000
D1$2	1.785	0.069	26.054	0.000
D1$3	2.094	0.088	23.789	0.000
AV1$1	1.470	0.056	26.413	0.000
AV1$2	1.903	0.075	25.380	0.000
AV1$3	2.228	0.100	22.372	0.000
P1$1	1.149	0.047	24.355	0.000
P1$2	1.974	0.079	24.856	0.000
P1$3	2.510	0.133	18.856	0.000
AU1$1	1.581	0.060	26.543	0.000
AU1$2	1.903	0.075	25.380	0.000
AU1$3	2.179	0.095	22.916	0.000
D2$1	1.192	0.048	24.778	0.000
D2$2	1.785	0.069	26.054	0.000
D2$3	2.202	0.097	22.655	0.000
AV2$1	1.457	0.055	26.380	0.000
AV2$2	1.890	0.074	25.467	0.000
AV2$3	2.254	0.102	22.066	0.000
P2$1	1.154	0.047	24.398	0.000

P2$2	1.890	0.074	25.467	0.000
P2$3	2.202	0.097	22.655	0.000
AU2$1	1.285	0.050	25.540	0.000
AU2$2	1.841	0.071	25.768	0.000
AU2$3	2.114	0.090	23.593	0.000
D3$1	0.904	0.043	21.089	0.000
D3$2	1.544	0.058	26.532	0.000
D3$3	1.917	0.076	25.287	0.000
AV3$1	1.326	0.051	25.804	0.000
AV3$2	1.865	0.073	25.627	0.000
AV3$3	2.228	0.100	22.372	0.000
P3$1	1.035	0.045	23.015	0.000
P3$2	1.785	0.069	26.054	0.000
P3$3	2.346	0.112	20.969	0.000
AU3$1	1.175	0.048	24.612	0.000
AU3$2	1.829	0.071	25.833	0.000
AU3$3	2.114	0.090	23.593	0.000
D4$1	1.206	0.048	24.900	0.000
D4$2	1.818	0.070	25.894	0.000
D4$3	2.134	0.091	23.383	0.000
AV4$1	1.397	0.053	26.169	0.000
AV4$2	1.959	0.078	24.973	0.000
AV4$3	2.228	0.100	22.372	0.000
P4$1	1.415	0.054	26.239	0.000
P4$2	2.254	0.102	22.066	0.000
P4$3	2.701	0.166	16.273	0.000
AU4$1	1.483	0.056	26.443	0.000
AU4$2	1.903	0.075	25.380	0.000
AU4$3	2.156	0.093	23.158	0.000
D5$1	1.206	0.048	24.900	0.000
D5$2	1.890	0.074	25.467	0.000
D5$3	2.228	0.100	22.372	0.000
AV5$1	1.266	0.050	25.398	0.000
AV5$2	1.903	0.075	25.380	0.000
AV5$3	2.179	0.095	22.916	0.000
P5$1	1.290	0.050	25.574	0.000
P5$2	1.990	0.080	24.730	0.000
P5$3	2.346	0.112	20.969	0.000
AU5$1	1.566	0.059	26.542	0.000
AU5$2	1.990	0.080	24.730	0.000
AU5$3	2.313	0.108	21.369	0.000
D6$1	1.003	0.044	22.573	0.000
D6$2	1.661	0.063	26.459	0.000
D6$3	2.039	0.084	24.305	0.000
AV6$1	1.509	0.057	26.493	0.000
AV6$2	2.039	0.084	24.305	0.000
AV6$3	2.419	0.121	20.035	0.000
D7$1	1.516	0.057	26.503	0.000
D7$2	2.022	0.083	24.455	0.000
D7$3	2.381	0.116	20.527	0.000
AV7$1	1.445	0.055	26.343	0.000
AV7$2	1.931	0.077	25.189	0.000
AV7$3	2.346	0.112	20.969	0.000
P6$1	1.661	0.063	26.459	0.000
P6$2	2.346	0.112	20.969	0.000
P6$3	2.626	0.152	17.290	0.000
D8$1	1.364	0.052	26.012	0.000
D8$2	2.039	0.084	24.305	0.000
D8$3	2.283	0.105	21.733	0.000
AV8$1	1.628	0.061	26.512	0.000
AV8$2	2.114	0.090	23.593	0.000
AV8$3	2.346	0.112	20.969	0.000
P7$1	1.415	0.054	26.239	0.000

P7$2	1.959	0.078	24.973	0.000
P7$3	2.381	0.116	20.527	0.000
AV9$1	1.476	0.056	26.429	0.000
AV9$2	2.006	0.082	24.597	0.000
AV9$3	2.346	0.112	20.969	0.000
P8$1	1.566	0.059	26.542	0.000
P8$2	2.346	0.112	20.969	0.000
P8$3	2.796	0.186	14.999	0.000
AV10$1	1.331	0.052	25.835	0.000
AV10$2	1.917	0.076	25.287	0.000
AV10$3	2.254	0.102	22.066	0.000
P9$1	1.149	0.047	24.355	0.000
P9$2	2.022	0.083	24.455	0.000
P9$3	2.346	0.112	20.969	0.000
AV11$1	1.433	0.054	26.304	0.000
AV11$2	1.865	0.073	25.627	0.000
AV11$3	2.156	0.093	23.158	0.000
P10$1	1.201	0.048	24.860	0.000
P10$2	1.931	0.077	25.189	0.000
P10$3	2.313	0.108	21.369	0.000
AV12$1	1.129	0.047	24.135	0.000
AV12$2	1.644	0.062	26.489	0.000
AV12$3	2.006	0.082	24.597	0.000
P11$1	1.457	0.055	26.380	0.000
P11$2	2.228	0.100	22.372	0.000
P11$3	2.796	0.186	14.999	0.000
AV13$1	1.347	0.052	25.926	0.000
AV13$2	1.807	0.070	25.950	0.000
AV13$3	2.254	0.102	22.066	0.000
P12$1	1.043	0.045	23.112	0.000
P12$2	1.785	0.069	26.054	0.000
P12$3	2.283	0.105	21.733	0.000
AU6$1	1.439	0.055	26.324	0.000
AU6$2	1.931	0.077	25.189	0.000
AU6$3	2.179	0.095	22.916	0.000
D9$1	1.188	0.048	24.737	0.000
D9$2	1.818	0.070	25.894	0.000
D9$3	2.202	0.097	22.655	0.000
AV14$1	1.588	0.060	26.541	0.000
AV14$2	2.006	0.082	24.597	0.000
AV14$3	2.462	0.126	19.483	0.000
P13$1	1.558	0.059	26.540	0.000
P13$2	2.179	0.095	22.916	0.000
P13$3	2.381	0.116	20.527	0.000
D10$1	0.957	0.044	21.918	0.000
D10$2	1.670	0.063	26.442	0.000
D10$3	2.057	0.085	24.144	0.000
P14$1	1.120	0.047	24.046	0.000
P14$2	1.974	0.079	24.856	0.000
P14$3	2.202	0.097	22.655	0.000
D11$1	1.141	0.047	24.268	0.000
D11$2	1.853	0.072	25.700	0.000
D11$3	2.156	0.093	23.158	0.000
D12$1	1.261	0.050	25.362	0.000
D12$2	1.931	0.077	25.189	0.000
D12$3	2.254	0.102	22.066	0.000

Variances

AUTONOMY	1.000	0.000	999.000	999.000
DISGUST	1.000	0.000	999.000	999.000
AVOIDANCE	1.000	0.000	999.000	999.000
PRACTICAL	1.000	0.000	999.000	999.000

R-SQUARE

Observed Variable	Estimate	S.E.	Two-Tailed Est./S.E.	P-Value	Residual Variance
D1	0.809	0.026	31.000	0.000	0.191
AV1	0.721	0.047	15.190	0.000	0.279
P1	0.725	0.035	20.431	0.000	0.275
AU1	0.841	0.042	19.985	0.000	0.159
D2	0.869	0.020	42.433	0.000	0.131
AV2	0.807	0.038	21.230	0.000	0.193
P2	0.697	0.036	19.373	0.000	0.303
AU2	0.899	0.031	29.260	0.000	0.101
D3	0.851	0.019	44.006	0.000	0.149
AV3	0.825	0.030	27.205	0.000	0.175
P3	0.831	0.027	31.108	0.000	0.169
AU3	0.760	0.033	22.978	0.000	0.240
D4	0.912	0.016	56.323	0.000	0.088
AV4	0.807	0.030	26.839	0.000	0.193
P4	0.622	0.050	12.492	0.000	0.378
AU4	0.879	0.040	21.885	0.000	0.121
D5	0.879	0.017	51.001	0.000	0.121
AV5	0.782	0.030	26.398	0.000	0.218
P5	0.770	0.033	23.410	0.000	0.230
AU5	0.844	0.055	15.443	0.000	0.156
D6	0.888	0.016	57.123	0.000	0.112
AV6	0.843	0.036	23.680	0.000	0.157
D7	0.913	0.025	36.440	0.000	0.087
AV7	0.822	0.036	23.118	0.000	0.178
P6	0.647	0.057	11.439	0.000	0.353
D8	0.845	0.024	35.197	0.000	0.155
AV8	0.702	0.054	13.064	0.000	0.298
P7	0.586	0.053	11.058	0.000	0.414
AV9	0.814	0.041	20.010	0.000	0.186
P8	0.619	0.053	11.578	0.000	0.381
AV10	0.859	0.023	37.735	0.000	0.141
P9	0.700	0.033	21.095	0.000	0.300
AV11	0.811	0.043	18.826	0.000	0.189
P10	0.823	0.027	29.933	0.000	0.177
AV12	0.717	0.034	20.996	0.000	0.283
P11	0.717	0.044	16.285	0.000	0.283
AV13	0.681	0.045	15.285	0.000	0.319
P12	0.846	0.026	33.006	0.000	0.154
AU6	0.849	0.049	17.268	0.000	0.151
D9	0.870	0.022	40.363	0.000	0.130
AV14	0.645	0.061	10.623	0.000	0.355
P13	0.822	0.038	21.683	0.000	0.178
D10	0.899	0.014	65.336	0.000	0.101
P14	0.802	0.025	32.054	0.000	0.198
D11	0.917	0.014	65.486	0.000	0.083
D12	0.668	0.040	16.583	0.000	0.332

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
AUTONOMY BY							
AU1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AU2	0.954	0.973	0.983	1.034	1.085	1.094	1.114
AU3	0.879	0.896	0.905	0.951	0.996	1.005	1.022
AU4	0.934	0.955	0.966	1.022	1.078	1.089	1.110
AU5	0.901	0.925	0.938	1.002	1.066	1.079	1.103
AU6	0.898	0.923	0.936	1.004	1.072	1.086	1.111

DISGUST BY

D1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
D2	1.004	1.012	1.016	1.037	1.058	1.062	1.070
D3	0.980	0.991	0.996	1.026	1.055	1.061	1.072
D4	1.022	1.032	1.036	1.062	1.087	1.092	1.102
D5	0.998	1.009	1.014	1.043	1.071	1.077	1.087
D6	1.006	1.016	1.021	1.048	1.075	1.080	1.090
D7	1.012	1.024	1.030	1.063	1.095	1.101	1.113
D8	0.970	0.983	0.989	1.022	1.056	1.062	1.075
D9	0.986	0.998	1.005	1.037	1.070	1.077	1.089
D10	1.010	1.020	1.026	1.054	1.083	1.088	1.099
D11	1.021	1.031	1.037	1.065	1.093	1.099	1.110
D12	0.836	0.853	0.862	0.909	0.956	0.965	0.982

AVOIDANC BY

AV1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AV2	0.955	0.979	0.992	1.058	1.125	1.137	1.162
AV3	0.984	1.004	1.015	1.070	1.125	1.136	1.157
AV4	0.966	0.988	0.999	1.058	1.117	1.128	1.150
AV5	0.949	0.971	0.983	1.042	1.101	1.112	1.134
AV6	0.982	1.006	1.018	1.082	1.146	1.158	1.182
AV7	0.964	0.989	1.002	1.068	1.134	1.147	1.172
AV8	0.865	0.894	0.909	0.987	1.065	1.080	1.110
AV9	0.950	0.977	0.991	1.063	1.135	1.149	1.176
AV10	0.999	1.022	1.033	1.092	1.151	1.162	1.184
AV11	0.959	0.983	0.996	1.061	1.125	1.138	1.162
AV12	0.903	0.926	0.937	0.997	1.057	1.069	1.091
AV13	0.863	0.889	0.902	0.972	1.041	1.055	1.081
AV14	0.803	0.837	0.855	0.946	1.038	1.055	1.090

PRACTICA BY

P1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
P2	0.906	0.924	0.933	0.981	1.028	1.038	1.055
P3	0.994	1.013	1.022	1.071	1.119	1.129	1.147
P4	0.827	0.851	0.863	0.927	0.991	1.003	1.027
P5	0.955	0.974	0.983	1.031	1.080	1.089	1.107
P6	0.841	0.866	0.879	0.945	1.012	1.024	1.049
P7	0.794	0.819	0.832	0.899	0.966	0.978	1.003
P8	0.811	0.838	0.852	0.924	0.996	1.010	1.037
P9	0.913	0.930	0.938	0.983	1.028	1.037	1.053
P10	0.999	1.015	1.023	1.066	1.108	1.116	1.132
P11	0.908	0.929	0.939	0.995	1.050	1.060	1.081
P12	1.003	1.022	1.031	1.080	1.130	1.139	1.158
P13	0.988	1.006	1.016	1.065	1.114	1.123	1.142
P14	0.990	1.005	1.012	1.052	1.092	1.100	1.115

DISGUST WITH

AUTONOMY	0.435	0.457	0.468	0.527	0.585	0.596	0.618

AVOIDANC WITH

AUTONOMY	0.564	0.586	0.598	0.656	0.715	0.726	0.748
DISGUST	0.486	0.506	0.516	0.569	0.622	0.632	0.652

PRACTICA WITH

AUTONOMY	0.425	0.447	0.458	0.518	0.578	0.590	0.612
DISGUST	0.597	0.614	0.622	0.667	0.712	0.721	0.737
AVOIDANCE	0.430	0.451	0.461	0.516	0.571	0.581	0.602

Thresholds

D1$1	1.036	1.065	1.080	1.158	1.236	1.251	1.280
D1$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D1$3	1.867	1.921	1.949	2.094	2.239	2.266	2.321
AV1$1	1.326	1.361	1.378	1.470	1.561	1.579	1.613
AV1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV1$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P1$1	1.028	1.057	1.072	1.149	1.227	1.242	1.271
P1$2	1.770	1.819	1.844	1.974	2.105	2.130	2.179
P1$3	2.167	2.249	2.291	2.510	2.728	2.770	2.852
AU1$1	1.427	1.464	1.483	1.581	1.678	1.697	1.734
AU1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU1$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
D2$1	1.068	1.098	1.113	1.192	1.271	1.287	1.316
D2$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AV2$1	1.315	1.349	1.366	1.457	1.548	1.565	1.599
AV2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
AV2$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P2$1	1.032	1.061	1.076	1.154	1.231	1.246	1.275
P2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
P2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AU2$1	1.156	1.187	1.203	1.285	1.368	1.384	1.415
AU2$2	1.657	1.701	1.723	1.841	1.958	1.981	2.025

AU2$3	1.883	1.938	1.966	2.114	2.261	2.289	2.344
D3$1	0.793	0.820	0.833	0.904	0.974	0.988	1.014
D3$2	1.394	1.430	1.448	1.544	1.640	1.658	1.694
D3$3	1.722	1.768	1.792	1.917	2.041	2.065	2.112
AV3$1	1.194	1.225	1.242	1.326	1.411	1.427	1.458
AV3$2	1.678	1.722	1.745	1.865	1.985	2.008	2.052
AV3$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P3$1	0.919	0.947	0.961	1.035	1.109	1.123	1.151
P3$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
P3$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AU3$1	1.052	1.081	1.096	1.175	1.253	1.268	1.298
AU3$2	1.647	1.690	1.713	1.829	1.946	1.968	2.012
AU3$3	1.883	1.938	1.966	2.114	2.261	2.289	2.344
D4$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D4$2	1.637	1.680	1.702	1.818	1.933	1.955	1.999
D4$3	1.899	1.955	1.984	2.134	2.284	2.313	2.369
AV4$1	1.260	1.293	1.309	1.397	1.485	1.502	1.535
AV4$2	1.757	1.805	1.830	1.959	2.088	2.113	2.161
AV4$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P4$1	1.276	1.309	1.326	1.415	1.503	1.520	1.554
P4$2	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P4$3	2.274	2.376	2.428	2.701	2.974	3.027	3.129
AU4$1	1.338	1.373	1.390	1.483	1.575	1.593	1.627
AU4$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU4$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396
D5$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D5$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
D5$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
AV5$1	1.138	1.168	1.184	1.266	1.348	1.364	1.394
AV5$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV5$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
P5$1	1.160	1.192	1.207	1.290	1.373	1.389	1.420
P5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
P5$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AU5$1	1.414	1.450	1.469	1.566	1.663	1.681	1.718
AU5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
AU5$3	2.034	2.101	2.135	2.313	2.491	2.525	2.592
D6$1	0.888	0.916	0.930	1.003	1.076	1.090	1.117
D6$2	1.499	1.538	1.558	1.661	1.764	1.784	1.823
D6$3	1.823	1.875	1.901	2.039	2.177	2.203	2.255
AV6$1	1.362	1.397	1.415	1.509	1.603	1.621	1.656
AV6$2	1.823	1.875	1.901	2.039	2.177	2.203	2.255
AV6$3	2.108	2.183	2.221	2.419	2.618	2.656	2.731
D7$1	1.369	1.404	1.422	1.516	1.610	1.628	1.663
D7$2	1.809	1.860	1.886	2.022	2.158	2.184	2.235
D7$3	2.082	2.154	2.190	2.381	2.572	2.608	2.680
AV7$1	1.303	1.337	1.355	1.445	1.535	1.552	1.586
AV7$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
AV7$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P6$1	1.499	1.538	1.558	1.661	1.764	1.784	1.823
P6$2	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P6$3	2.235	2.328	2.376	2.626	2.876	2.924	3.017
D8$1	1.229	1.261	1.277	1.364	1.450	1.466	1.499
D8$2	1.823	1.875	1.901	2.039	2.177	2.203	2.255
D8$3	2.012	2.077	2.110	2.283	2.455	2.488	2.553
AV8$1	1.469	1.507	1.527	1.628	1.729	1.748	1.786
AV8$2	1.883	1.938	1.966	2.114	2.261	2.289	2.344
AV8$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P7$1	1.276	1.309	1.326	1.415	1.503	1.520	1.554
P7$2	1.757	1.805	1.830	1.959	2.088	2.113	2.161
P7$3	2.082	2.154	2.190	2.381	2.572	2.608	2.680
AV9$1	1.332	1.367	1.384	1.476	1.568	1.586	1.620
AV9$2	1.796	1.846	1.871	2.006	2.140	2.165	2.216
AV9$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P8$1	1.414	1.450	1.469	1.566	1.663	1.681	1.718
P8$2	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P8$3	2.315	2.430	2.489	2.796	3.102	3.161	3.276
AV10$1	1.199	1.230	1.247	1.331	1.416	1.432	1.464
AV10$2	1.722	1.768	1.792	1.917	2.041	2.065	2.112
AV10$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P9$1	1.028	1.057	1.072	1.149	1.227	1.242	1.271
P9$2	1.809	1.860	1.886	2.022	2.158	2.184	2.235
P9$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AV11$1	1.292	1.326	1.343	1.433	1.522	1.539	1.573
AV11$2	1.678	1.722	1.745	1.865	1.985	2.008	2.052
AV11$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396
P10$1	1.077	1.106	1.122	1.201	1.281	1.296	1.326
P10$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
P10$3	2.034	2.101	2.135	2.313	2.491	2.525	2.592
AV12$1	1.008	1.037	1.052	1.129	1.206	1.220	1.249
AV12$2	1.484	1.522	1.542	1.644	1.746	1.766	1.804
AV12$3	1.796	1.846	1.871	2.006	2.140	2.165	2.216

P11$1	1.315	1.349	1.366	1.457	1.548	1.565	1.599
P11$2	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P11$3	2.315	2.430	2.489	2.796	3.102	3.161	3.276
AV13$1	1.213	1.245	1.262	1.347	1.433	1.449	1.481
AV13$2	1.627	1.670	1.692	1.807	1.921	1.943	1.986
AV13$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P12$1	0.927	0.954	0.969	1.043	1.117	1.131	1.159
P12$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
P12$3	2.012	2.077	2.110	2.283	2.455	2.488	2.553
AU6$1	1.298	1.332	1.349	1.439	1.529	1.546	1.579
AU6$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
AU6$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
D9$1	1.064	1.094	1.109	1.188	1.267	1.282	1.312
D9$2	1.637	1.680	1.702	1.818	1.933	1.955	1.999
D9$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AV14$1	1.434	1.471	1.490	1.588	1.687	1.705	1.742
AV14$2	1.796	1.846	1.871	2.006	2.140	2.165	2.216
AV14$3	2.136	2.214	2.254	2.462	2.670	2.710	2.787
P13$1	1.407	1.443	1.462	1.558	1.655	1.673	1.709
P13$2	1.934	1.992	2.022	2.179	2.335	2.365	2.423
P13$3	2.082	2.154	2.190	2.381	2.572	2.608	2.680
D10$1	0.845	0.872	0.885	0.957	1.029	1.043	1.070
D10$2	1.507	1.546	1.566	1.670	1.774	1.793	1.832
D10$3	1.837	1.890	1.916	2.057	2.197	2.224	2.276
P14$1	1.000	1.029	1.044	1.120	1.197	1.212	1.240
P14$2	1.770	1.819	1.844	1.974	2.105	2.130	2.179
P14$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
D11$1	1.020	1.049	1.064	1.141	1.218	1.233	1.262
D11$2	1.667	1.712	1.734	1.853	1.971	1.994	2.039
D11$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396
D12$1	1.133	1.164	1.179	1.261	1.343	1.359	1.389
D12$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
D12$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517

Variances

AUTONOMY	0.733	0.759	0.772	0.841	0.910	0.924	0.950
DISGUST	0.741	0.757	0.766	0.809	0.851	0.860	0.876
AVOIDANC	0.599	0.628	0.643	0.721	0.799	0.814	0.843
PRACTICA	0.633	0.655	0.666	0.725	0.783	0.794	0.816

CONFIDENCE INTERVALS OF STANDARDIZED MODEL RESULTS

STDYX Standardization

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
AUTONOMY BY							
AU1	0.858	0.872	0.879	0.917	0.955	0.962	0.976
AU2	0.906	0.916	0.921	0.948	0.975	0.980	0.990
AU3	0.823	0.835	0.841	0.872	0.903	0.909	0.921
AU4	0.882	0.896	0.902	0.938	0.973	0.980	0.993
AU5	0.842	0.861	0.870	0.919	0.968	0.977	0.996
AU6	0.852	0.869	0.877	0.921	0.965	0.973	0.990
DISGUST BY							
D1	0.862	0.871	0.875	0.899	0.923	0.928	0.937
D2	0.904	0.911	0.914	0.932	0.950	0.954	0.961
D3	0.895	0.902	0.905	0.922	0.940	0.943	0.949
D4	0.933	0.938	0.941	0.955	0.969	0.971	0.977
D5	0.914	0.920	0.922	0.938	0.953	0.956	0.961
D6	0.921	0.926	0.929	0.942	0.956	0.959	0.964
D7	0.922	0.930	0.934	0.956	0.977	0.981	0.989
D8	0.886	0.894	0.898	0.919	0.941	0.945	0.953
D9	0.903	0.910	0.914	0.933	0.952	0.956	0.963
D10	0.929	0.934	0.936	0.948	0.960	0.962	0.967
D11	0.939	0.943	0.946	0.958	0.970	0.972	0.977
D12	0.754	0.769	0.777	0.817	0.858	0.866	0.881
AVOIDANC BY							
AV1	0.777	0.794	0.803	0.849	0.895	0.904	0.921
AV2	0.844	0.857	0.864	0.899	0.933	0.940	0.953
AV3	0.866	0.876	0.881	0.909	0.936	0.941	0.952
AV4	0.855	0.865	0.871	0.898	0.926	0.931	0.941
AV5	0.841	0.852	0.857	0.884	0.912	0.917	0.928
AV6	0.868	0.880	0.886	0.918	0.950	0.956	0.968
AV7	0.856	0.868	0.874	0.907	0.939	0.945	0.957
AV8	0.755	0.775	0.785	0.838	0.891	0.901	0.921
AV9	0.844	0.858	0.865	0.902	0.939	0.947	0.960

AV10	0.895	0.903	0.907	0.927	0.947	0.951	0.959
AV11	0.839	0.854	0.861	0.900	0.940	0.947	0.962
AV12	0.795	0.807	0.813	0.847	0.880	0.886	0.899
AV13	0.755	0.772	0.781	0.825	0.869	0.878	0.894
AV14	0.706	0.729	0.741	0.803	0.866	0.877	0.901

PRACTICA BY

P1	0.798	0.810	0.817	0.851	0.885	0.892	0.905
P2	0.779	0.793	0.799	0.835	0.870	0.877	0.890
P3	0.874	0.883	0.887	0.911	0.935	0.940	0.949
P4	0.708	0.727	0.737	0.789	0.841	0.851	0.870
P5	0.829	0.841	0.847	0.878	0.909	0.915	0.926
P6	0.714	0.736	0.747	0.804	0.862	0.873	0.895
P7	0.676	0.697	0.708	0.765	0.822	0.833	0.854
P8	0.699	0.720	0.731	0.787	0.843	0.853	0.874
P9	0.786	0.798	0.804	0.837	0.870	0.876	0.888
P10	0.868	0.877	0.882	0.907	0.932	0.937	0.946
P11	0.780	0.796	0.804	0.847	0.889	0.898	0.914
P12	0.884	0.892	0.897	0.920	0.943	0.947	0.956
P13	0.853	0.865	0.872	0.906	0.941	0.947	0.960
P14	0.860	0.868	0.873	0.896	0.919	0.923	0.932

DISGUST WITH

AUTONOMY	0.547	0.569	0.580	0.638	0.697	0.708	0.730

AVOIDANC WITH

AUTONOMY	0.793	0.805	0.811	0.843	0.875	0.881	0.893
DISGUST	0.671	0.689	0.698	0.745	0.792	0.801	0.819

PRACTICA WITH

AUTONOMY	0.575	0.596	0.607	0.664	0.721	0.732	0.753
DISGUST	0.835	0.844	0.848	0.872	0.895	0.899	0.908
AVOIDANCE	0.635	0.654	0.663	0.714	0.765	0.775	0.794

Thresholds

D1$1	1.036	1.065	1.080	1.158	1.236	1.251	1.280
D1$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D1$3	1.867	1.921	1.949	2.094	2.239	2.266	2.321
AV1$1	1.326	1.361	1.378	1.470	1.561	1.579	1.613
AV1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV1$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P1$1	1.028	1.057	1.072	1.149	1.227	1.242	1.271
P1$2	1.770	1.819	1.844	1.974	2.105	2.130	2.179
P1$3	2.167	2.249	2.291	2.510	2.728	2.770	2.852
AU1$1	1.427	1.464	1.483	1.581	1.678	1.697	1.734
AU1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU1$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
D2$1	1.068	1.098	1.113	1.192	1.271	1.287	1.316
D2$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AV2$1	1.315	1.349	1.366	1.457	1.548	1.565	1.599
AV2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
AV2$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P2$1	1.032	1.061	1.076	1.154	1.231	1.246	1.275
P2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
P2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AU2$1	1.156	1.187	1.203	1.285	1.368	1.384	1.415
AU2$2	1.657	1.701	1.723	1.841	1.958	1.981	2.025
AU2$3	1.883	1.938	1.966	2.114	2.261	2.289	2.344
D3$1	0.793	0.820	0.833	0.904	0.974	0.988	1.014
D3$2	1.394	1.430	1.448	1.544	1.640	1.658	1.694
D3$3	1.722	1.768	1.792	1.917	2.041	2.065	2.112
AV3$1	1.194	1.225	1.242	1.326	1.411	1.427	1.458
AV3$2	1.678	1.722	1.745	1.865	1.985	2.008	2.052
AV3$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P3$1	0.919	0.947	0.961	1.035	1.109	1.123	1.151
P3$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
P3$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AU3$1	1.052	1.081	1.096	1.175	1.253	1.268	1.298
AU3$2	1.647	1.690	1.713	1.829	1.946	1.968	2.012
AU3$3	1.883	1.938	1.966	2.114	2.261	2.289	2.344
D4$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D4$2	1.637	1.680	1.702	1.818	1.933	1.955	1.999
D4$3	1.899	1.955	1.984	2.134	2.284	2.313	2.369
AV4$1	1.260	1.293	1.309	1.397	1.485	1.502	1.535
AV4$2	1.757	1.805	1.830	1.959	2.088	2.113	2.161
AV4$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P4$1	1.276	1.309	1.326	1.415	1.503	1.520	1.554
P4$2	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P4$3	2.274	2.376	2.428	2.701	2.974	3.027	3.129
AU4$1	1.338	1.373	1.390	1.483	1.575	1.593	1.627
AU4$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097

AU4$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396
D5$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D5$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
D5$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
AV5$1	1.138	1.168	1.184	1.266	1.348	1.364	1.394
AV5$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV5$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
P5$1	1.160	1.192	1.207	1.290	1.373	1.389	1.420
P5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
P5$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AU5$1	1.414	1.450	1.469	1.566	1.663	1.681	1.718
AU5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
AU5$3	2.034	2.101	2.135	2.313	2.491	2.525	2.592
D6$1	0.888	0.916	0.930	1.003	1.076	1.090	1.117
D6$2	1.499	1.538	1.558	1.661	1.764	1.784	1.823
D6$3	1.823	1.875	1.901	2.039	2.177	2.203	2.255
AV6$1	1.362	1.397	1.415	1.509	1.603	1.621	1.656
AV6$2	1.823	1.875	1.901	2.039	2.177	2.203	2.255
AV6$3	2.108	2.183	2.221	2.419	2.618	2.656	2.731
D7$1	1.369	1.404	1.422	1.516	1.610	1.628	1.663
D7$2	1.809	1.860	1.886	2.022	2.158	2.184	2.235
D7$3	2.082	2.154	2.190	2.381	2.572	2.608	2.680
AV7$1	1.303	1.337	1.355	1.445	1.535	1.552	1.586
AV7$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
AV7$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P6$1	1.499	1.538	1.558	1.661	1.764	1.784	1.823
P6$2	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P6$3	2.235	2.328	2.376	2.626	2.876	2.924	3.017
D8$1	1.229	1.261	1.277	1.364	1.450	1.466	1.499
D8$2	1.823	1.875	1.901	2.039	2.177	2.203	2.255
D8$3	2.012	2.077	2.110	2.283	2.455	2.488	2.553
AV8$1	1.469	1.507	1.527	1.628	1.729	1.748	1.786
AV8$2	1.883	1.938	1.966	2.114	2.261	2.289	2.344
AV8$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P7$1	1.276	1.309	1.326	1.415	1.503	1.520	1.554
P7$2	1.757	1.805	1.830	1.959	2.088	2.113	2.161
P7$3	2.082	2.154	2.190	2.381	2.572	2.608	2.680
AV9$1	1.332	1.367	1.384	1.476	1.568	1.586	1.620
AV9$2	1.796	1.846	1.871	2.006	2.140	2.165	2.216
AV9$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P8$1	1.414	1.450	1.469	1.566	1.663	1.681	1.718
P8$2	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P8$3	2.315	2.430	2.489	2.796	3.102	3.161	3.276
AV10$1	1.199	1.230	1.247	1.331	1.416	1.432	1.464
AV10$2	1.722	1.768	1.792	1.917	2.041	2.065	2.112
AV10$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P9$1	1.028	1.057	1.072	1.149	1.227	1.242	1.271
P9$2	1.809	1.860	1.886	2.022	2.158	2.184	2.235
P9$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AV11$1	1.292	1.326	1.343	1.433	1.522	1.539	1.573
AV11$2	1.678	1.722	1.745	1.865	1.985	2.008	2.052
AV11$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396
P10$1	1.077	1.106	1.122	1.201	1.281	1.296	1.326
P10$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
P10$3	2.034	2.101	2.135	2.313	2.491	2.525	2.592
AV12$1	1.008	1.037	1.052	1.129	1.206	1.220	1.249
AV12$2	1.484	1.522	1.542	1.644	1.746	1.766	1.804
AV12$3	1.796	1.846	1.871	2.006	2.140	2.165	2.216
P11$1	1.315	1.349	1.366	1.457	1.548	1.565	1.599
P11$2	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P11$3	2.315	2.430	2.489	2.796	3.102	3.161	3.276
AV13$1	1.213	1.245	1.262	1.347	1.433	1.449	1.481
AV13$2	1.627	1.670	1.692	1.807	1.921	1.943	1.986
AV13$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P12$1	0.927	0.954	0.969	1.043	1.117	1.131	1.159
P12$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
P12$3	2.012	2.077	2.110	2.283	2.455	2.488	2.553
AU6$1	1.298	1.332	1.349	1.439	1.529	1.546	1.579
AU6$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
AU6$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
D9$1	1.064	1.094	1.109	1.188	1.267	1.282	1.312
D9$2	1.637	1.680	1.702	1.818	1.933	1.955	1.999
D9$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AV14$1	1.434	1.471	1.490	1.588	1.687	1.705	1.742
AV14$2	1.796	1.846	1.871	2.006	2.140	2.165	2.216
AV14$3	2.136	2.214	2.254	2.462	2.670	2.710	2.787
P13$1	1.407	1.443	1.462	1.558	1.655	1.673	1.709
P13$2	1.934	1.992	2.022	2.179	2.335	2.365	2.423
P13$3	2.082	2.154	2.190	2.381	2.572	2.608	2.680
D10$1	0.845	0.872	0.885	0.957	1.029	1.043	1.070
D10$2	1.507	1.546	1.566	1.670	1.774	1.793	1.832
D10$3	1.837	1.890	1.916	2.057	2.197	2.224	2.276

P14$1	1.000	1.029	1.044	1.120	1.197	1.212	1.240
P14$2	1.770	1.819	1.844	1.974	2.105	2.130	2.179
P14$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
D11$1	1.020	1.049	1.064	1.141	1.218	1.233	1.262
D11$2	1.667	1.712	1.734	1.853	1.971	1.994	2.039
D11$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396
D12$1	1.133	1.164	1.179	1.261	1.343	1.359	1.389
D12$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
D12$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517

Variances

AUTONOMY	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DISGUST	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AVOIDANC	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PRACTICA	1.000	1.000	1.000	1.000	1.000	1.000	1.000

MODEL MODIFICATION INDICES

Minimum M.I. value for printing the modification index 40.000

	M.I.	E.P.C.	Std E.P.C.	StdYX E.P.C.
ON/BY Statements				
AU3 ON DISGUST / DISGUST BY AU3	42.969	-0.270	-0.243	-0.243
AU3 ON AVOIDANC / AVOIDANC BY AU3	61.733	-0.721	-0.612	-0.612
AV5 ON PRACTICA / PRACTICA BY AV5	43.753	-0.317	-0.270	-0.270
D7 ON AVOIDANC / AVOIDANC BY D7	40.330	0.293	0.248	0.248
P9 ON AUTONOMY / AUTONOMY BY P9	47.540	-0.356	-0.327	-0.327
P9 ON AVOIDANC / AVOIDANC BY P9	58.843	-0.418	-0.355	-0.355
AV11 ON AUTONOMY / AUTONOMY BY AV11	108.971	0.894	0.820	0.820
P12 ON DISGUST / DISGUST BY P12	71.055	0.638	0.574	0.574
AU6 ON AVOIDANC / AVOIDANC BY AU6	43.211	0.705	0.598	0.598
D12 ON PRACTICA / PRACTICA BY D12	48.922	0.628	0.534	0.534
ON Statements				
AUTONOMY ON AU3	62.950	0.181	0.198	0.198
AUTONOMY ON AV11	85.619	0.183	0.200	0.200
DISGUST ON P12	53.374	0.098	0.109	0.109
AVOIDANC ON AV5	55.575	0.130	0.154	0.154
AVOIDANC ON AV10	41.997	0.109	0.129	0.129
AVOIDANC ON AV11	103.769	-0.206	-0.243	-0.243
AVOIDANC ON AU6	40.209	0.120	0.141	0.141
PRACTICA ON P9	46.143	0.113	0.132	0.132
PRACTICA ON P12	70.878	-0.128	-0.151	-0.151
PRACTICA ON D12	58.638	0.116	0.136	0.136
AU2 ON AU3	71.773	0.204	0.204	0.204
D3 ON D6	44.840	0.099	0.099	0.099
AU3 ON AU2	71.778	0.204	0.204	0.204
AU3 ON D11	40.242	-0.200	-0.200	-0.200
AV5 ON P9	47.118	-0.266	-0.266	-0.266
D6 ON D3	44.840	0.099	0.099	0.099
P9 ON AV1	40.757	-0.258	-0.258	-0.258
P9 ON AV2	43.542	-0.256	-0.256	-0.256
P9 ON AV3	49.737	-0.272	-0.272	-0.272

P9	ON AV4	49.831	-0.279	-0.279	-0.279
P9	ON AV5	56.786	-0.302	-0.302	-0.302
P9	ON AV6	45.361	-0.260	-0.260	-0.260
P9	ON AV8	40.578	-0.269	-0.269	-0.269
P9	ON AV10	47.953	-0.260	-0.260	-0.260
P9	ON AV13	46.178	-0.286	-0.286	-0.286
P9	ON P14	128.766	0.238	0.238	0.238
AV11	ON AU4	57.312	0.212	0.212	0.212
AV11	ON AU5	47.540	0.225	0.225	0.225
AV11	ON AU6	52.205	0.211	0.211	0.211
P14	ON P9	128.764	0.238	0.238	0.238

WITH Statements

AU3	WITH AUTONOMY	62.951	0.181	0.198	0.403
AU3	WITH AU2	71.775	0.204	0.204	1.309
AV5	WITH AVOIDANC	55.570	0.130	0.154	0.329
D6	WITH D3	44.840	0.099	0.099	0.766
AV10	WITH AVOIDANC	41.993	0.109	0.129	0.344
P9	WITH PRACTICA	46.138	0.113	0.132	0.242
AV11	WITH AUTONOMY	85.620	0.183	0.200	0.459
AV11	WITH AVOIDANC	103.777	-0.206	-0.243	-0.558
P12	WITH DISGUST	53.373	0.098	0.109	0.278
P12	WITH PRACTICA	70.885	-0.128	-0.151	-0.384
AU6	WITH AVOIDANC	40.205	0.120	0.141	0.363
P14	WITH P9	128.759	0.238	0.238	0.977
D12	WITH PRACTICA	58.633	0.116	0.136	0.236

DIAGRAM INFORMATION

Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

Diagram output
c:\users\w0001047\desktop\measure invariance results\latest\four factor.dgm

Beginning Time: 12:09:43
Ending Time: 12:11:01
Elapsed Time: 00:01:18

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Appendix I Mplus Four Factors 39-items CFA Results

Mplus VERSION 8.6
MUTHEN & MUTHEN
07/03/2022 8:26 PM

OUTPUT SECTIONS

INPUT INSTRUCTIONS

```
TITLE: CFA

DATA: FILE = C:\Users\w0001047\Desktop\Measure Invariance Results\Latest\Original.csv;

VARIABLE:
NAMES ARE age gender return_kit N1 D1 Av1 P1 Au1 D2 Av2 P2 Au2 D3 Av3
P3 Au3 D4 Av4 P4 Au4 D5 Av5 P5 Au5 D6 Av6 D7 Av7 P6 D8 Av8
P7 Av9 P8 Av10 P9 Av11 P10 N2 Av12 P11 Av13 P12 Au6 D9 Av14
P13 D10 P14 N3 D11 D12;

CATEGORICAL ARE D1 Av1 P1 Au1 D2 Av2 P2 Au2 D3 Av3
P3 D4 Av4 P4 Au4 D5 Av5 P5 Au5 Av6 Av7 P6 D8 Av8
P7 Av9 P8 Av10 P10 Av12 P11 Av13 Au6 D9 Av14
P13 D10 P14 D11;

USEVARIABLES ARE D1 Av1 P1 Au1 D2 Av2 P2 Au2 D3 Av3
P3 D4 Av4 P4 Au4 D5 Av5 P5 Au5 Av6 Av7 P6 D8 Av8
P7 Av9 P8 Av10 P10 Av12 P11 Av13 Au6 D9 Av14
P13 D10 P14 D11;


MISSING=ALL (999);

MODEL:
Autonomy BY Au1 Au2 Au4 Au5 Au6;
Disgust BY D1 D2 D3 D4 D5 D8 D9 D10 D11;
Avoidance BY Av1 Av2 Av3 Av4 Av5 Av6 Av7 Av8 Av9 Av10 Av12 Av13 Av14;
Practical BY P1 P2 P3 P4 P5 P6 P7 P8 P10 P11 P13 P14;

savedata:
!file is ALL4factor.dat;
!save = fscores;
```

OUTPUT: StdYX; MODINDICES(all 30);
CINTERVAL;

INPUT READING TERMINATED NORMALLY

CFA

SUMMARY OF ANALYSIS

Number of groups 1
Number of observations 1158

Number of dependent variables 39
Number of independent variables 0
Number of continuous latent variables 4

Observed dependent variables

Binary and ordered categorical (ordinal)
D1 AV1 P1 AU1 D2 AV2
P2 AU2 D3 AV3 P3 D4
AV4 P4 AU4 D5 AV5 P5
AU5 AV6 AV7 P6 D8 AV8
P7 AV9 P8 AV10 P10 AV12
P11 AV13 AU6 D9 AV14 P13
D10 P14 D11

Continuous latent variables
AUTONOMY DISGUST AVOIDANC PRACTICA

Estimator WLSMV
Maximum number of iterations 1000
Convergence criterion 0.500D-04
Maximum number of steepest descent iterations 20
Maximum number of iterations for H1 2000
Convergence criterion for H1 0.100D-03
Parameterization DELTA
Link PROBIT

Input data file(s)
C:\Users\w0001047\Desktop\Measure Invariance Results\Latest\Original.csv

Input data format FREE

SUMMARY OF DATA

Number of missing data patterns 1

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.100

PROPORTION OF DATA PRESENT

Covariance Coverage
D1 AV1 P1 AU1 D2

D1	1.000				
AV1	1.000	1.000			
P1	1.000	1.000	1.000		
AU1	1.000	1.000	1.000	1.000	
D2	1.000	1.000	1.000	1.000	1.000
AV2	1.000	1.000	1.000	1.000	1.000
P2	1.000	1.000	1.000	1.000	1.000
AU2	1.000	1.000	1.000	1.000	1.000
D3	1.000	1.000	1.000	1.000	1.000
AV3	1.000	1.000	1.000	1.000	1.000
P3	1.000	1.000	1.000	1.000	1.000
D4	1.000	1.000	1.000	1.000	1.000
AV4	1.000	1.000	1.000	1.000	1.000
P4	1.000	1.000	1.000	1.000	1.000
AU4	1.000	1.000	1.000	1.000	1.000
D5	1.000	1.000	1.000	1.000	1.000
AV5	1.000	1.000	1.000	1.000	1.000
P5	1.000	1.000	1.000	1.000	1.000
AU5	1.000	1.000	1.000	1.000	1.000
AV6	1.000	1.000	1.000	1.000	1.000
AV7	1.000	1.000	1.000	1.000	1.000
P6	1.000	1.000	1.000	1.000	1.000
D8	1.000	1.000	1.000	1.000	1.000
AV8	1.000	1.000	1.000	1.000	1.000
P7	1.000	1.000	1.000	1.000	1.000
AV9	1.000	1.000	1.000	1.000	1.000
P8	1.000	1.000	1.000	1.000	1.000
AV10	1.000	1.000	1.000	1.000	1.000
P10	1.000	1.000	1.000	1.000	1.000
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	AV2	P2	AU2	D3	AV3
AV2	1.000				
P2	1.000	1.000			
AU2	1.000	1.000	1.000		
D3	1.000	1.000	1.000	1.000	
AV3	1.000	1.000	1.000	1.000	1.000
P3	1.000	1.000	1.000	1.000	1.000
D4	1.000	1.000	1.000	1.000	1.000
AV4	1.000	1.000	1.000	1.000	1.000
P4	1.000	1.000	1.000	1.000	1.000
AU4	1.000	1.000	1.000	1.000	1.000
D5	1.000	1.000	1.000	1.000	1.000
AV5	1.000	1.000	1.000	1.000	1.000
P5	1.000	1.000	1.000	1.000	1.000
AU5	1.000	1.000	1.000	1.000	1.000
AV6	1.000	1.000	1.000	1.000	1.000
AV7	1.000	1.000	1.000	1.000	1.000
P6	1.000	1.000	1.000	1.000	1.000
D8	1.000	1.000	1.000	1.000	1.000
AV8	1.000	1.000	1.000	1.000	1.000
P7	1.000	1.000	1.000	1.000	1.000
AV9	1.000	1.000	1.000	1.000	1.000
P8	1.000	1.000	1.000	1.000	1.000

AV10	1.000	1.000	1.000	1.000	1.000
P10	1.000	1.000	1.000	1.000	1.000
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	P3	D4	AV4	P4	AU4
P3	1.000				
D4	1.000	1.000			
AV4	1.000	1.000	1.000		
P4	1.000	1.000	1.000	1.000	
AU4	1.000	1.000	1.000	1.000	1.000
D5	1.000	1.000	1.000	1.000	1.000
AV5	1.000	1.000	1.000	1.000	1.000
P5	1.000	1.000	1.000	1.000	1.000
AU5	1.000	1.000	1.000	1.000	1.000
AV6	1.000	1.000	1.000	1.000	1.000
AV7	1.000	1.000	1.000	1.000	1.000
P6	1.000	1.000	1.000	1.000	1.000
D8	1.000	1.000	1.000	1.000	1.000
AV8	1.000	1.000	1.000	1.000	1.000
P7	1.000	1.000	1.000	1.000	1.000
AV9	1.000	1.000	1.000	1.000	1.000
P8	1.000	1.000	1.000	1.000	1.000
AV10	1.000	1.000	1.000	1.000	1.000
P10	1.000	1.000	1.000	1.000	1.000
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	D5	AV5	P5	AU5	AV6
D5	1.000				
AV5	1.000	1.000			
P5	1.000	1.000	1.000		
AU5	1.000	1.000	1.000	1.000	
AV6	1.000	1.000	1.000	1.000	1.000
AV7	1.000	1.000	1.000	1.000	1.000
P6	1.000	1.000	1.000	1.000	1.000
D8	1.000	1.000	1.000	1.000	1.000
AV8	1.000	1.000	1.000	1.000	1.000
P7	1.000	1.000	1.000	1.000	1.000
AV9	1.000	1.000	1.000	1.000	1.000
P8	1.000	1.000	1.000	1.000	1.000
AV10	1.000	1.000	1.000	1.000	1.000
P10	1.000	1.000	1.000	1.000	1.000
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000

AV13	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	AV7	P6	D8	AV8	P7
AV7	1.000				
P6	1.000	1.000			
D8	1.000	1.000	1.000		
AV8	1.000	1.000	1.000	1.000	
P7	1.000	1.000	1.000	1.000	1.000
AV9	1.000	1.000	1.000	1.000	1.000
P8	1.000	1.000	1.000	1.000	1.000
AV10	1.000	1.000	1.000	1.000	1.000
P10	1.000	1.000	1.000	1.000	1.000
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	AV9	P8	AV10	P10	AV12
AV9	1.000				
P8	1.000	1.000			
AV10	1.000	1.000	1.000		
P10	1.000	1.000	1.000	1.000	
AV12	1.000	1.000	1.000	1.000	1.000
P11	1.000	1.000	1.000	1.000	1.000
AV13	1.000	1.000	1.000	1.000	1.000
AU6	1.000	1.000	1.000	1.000	1.000
D9	1.000	1.000	1.000	1.000	1.000
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	P11	AV13	AU6	D9	AV14
P11	1.000				
AV13	1.000	1.000			
AU6	1.000	1.000	1.000		
D9	1.000	1.000	1.000	1.000	
AV14	1.000	1.000	1.000	1.000	1.000
P13	1.000	1.000	1.000	1.000	1.000
D10	1.000	1.000	1.000	1.000	1.000
P14	1.000	1.000	1.000	1.000	1.000
D11	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	P13	D10	P14	D11
P13	1.000			
D10	1.000	1.000		
P14	1.000	1.000	1.000	
D11	1.000	1.000	1.000	1.000

UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

D1		
Category 1	0.877	1015.000
Category 2	0.086	100.000
Category 3	0.019	22.000
Category 4	0.018	21.000
AV1		
Category 1	0.929	1076.000
Category 2	0.042	49.000
Category 3	0.016	18.000
Category 4	0.013	15.000
P1		
Category 1	0.875	1013.000
Category 2	0.101	117.000
Category 3	0.018	21.000
Category 4	0.006	7.000
AU1		
Category 1	0.943	1092.000
Category 2	0.028	33.000
Category 3	0.014	16.000
Category 4	0.015	17.000
D2		
Category 1	0.883	1023.000
Category 2	0.079	92.000
Category 3	0.023	27.000
Category 4	0.014	16.000
AV2		
Category 1	0.927	1074.000
Category 2	0.043	50.000
Category 3	0.017	20.000
Category 4	0.012	14.000
P2		
Category 1	0.876	1014.000
Category 2	0.095	110.000
Category 3	0.016	18.000
Category 4	0.014	16.000
AU2		
Category 1	0.901	1043.000
Category 2	0.066	77.000
Category 3	0.016	18.000
Category 4	0.017	20.000
D3		
Category 1	0.817	946.000
Category 2	0.122	141.000
Category 3	0.034	39.000
Category 4	0.028	32.000
AV3		
Category 1	0.908	1051.000
Category 2	0.061	71.000
Category 3	0.018	21.000
Category 4	0.013	15.000
P3		
Category 1	0.850	984.000
Category 2	0.113	131.000
Category 3	0.028	32.000
Category 4	0.009	11.000
D4		

Category 1	0.886	1026.000
Category 2	0.079	92.000
Category 3	0.018	21.000
Category 4	0.016	19.000
AV4		
Category 1	0.919	1064.000
Category 2	0.056	65.000
Category 3	0.012	14.000
Category 4	0.013	15.000
P4		
Category 1	0.921	1067.000
Category 2	0.066	77.000
Category 3	0.009	10.000
Category 4	0.003	4.000
AU4		
Category 1	0.931	1078.000
Category 2	0.041	47.000
Category 3	0.013	15.000
Category 4	0.016	18.000
D5		
Category 1	0.886	1026.000
Category 2	0.085	98.000
Category 3	0.016	19.000
Category 4	0.013	15.000
AV5		
Category 1	0.897	1039.000
Category 2	0.074	86.000
Category 3	0.014	16.000
Category 4	0.015	17.000
P5		
Category 1	0.902	1044.000
Category 2	0.075	87.000
Category 3	0.014	16.000
Category 4	0.009	11.000
AU5		
Category 1	0.941	1090.000
Category 2	0.035	41.000
Category 3	0.013	15.000
Category 4	0.010	12.000
AV6		
Category 1	0.934	1082.000
Category 2	0.045	52.000
Category 3	0.013	15.000
Category 4	0.008	9.000
AV7		
Category 1	0.926	1072.000
Category 2	0.047	55.000
Category 3	0.017	20.000
Category 4	0.009	11.000
P6		
Category 1	0.952	1102.000
Category 2	0.039	45.000
Category 3	0.005	6.000
Category 4	0.004	5.000
D8		
Category 1	0.914	1058.000
Category 2	0.066	76.000
Category 3	0.009	11.000
Category 4	0.011	13.000
AV8		
Category 1	0.948	1098.000
Category 2	0.035	40.000
Category 3	0.008	9.000
Category 4	0.009	11.000
P7		
Category 1	0.921	1067.000
Category 2	0.054	62.000

Category 3	0.016	19.000
Category 4	0.009	10.000
AV9		
Category 1	0.930	1077.000
Category 2	0.047	55.000
Category 3	0.013	15.000
Category 4	0.009	11.000
P8		
Category 1	0.941	1090.000
Category 2	0.049	57.000
Category 3	0.007	8.000
Category 4	0.003	3.000
AV10		
Category 1	0.908	1052.000
Category 2	0.064	74.000
Category 3	0.016	18.000
Category 4	0.012	14.000
P10		
Category 1	0.885	1025.000
Category 2	0.088	102.000
Category 3	0.016	19.000
Category 4	0.010	12.000
AV12		
Category 1	0.870	1008.000
Category 2	0.079	92.000
Category 3	0.028	32.000
Category 4	0.022	26.000
P11		
Category 1	0.927	1074.000
Category 2	0.060	69.000
Category 3	0.010	12.000
Category 4	0.003	3.000
AV13		
Category 1	0.911	1055.000
Category 2	0.054	62.000
Category 3	0.023	27.000
Category 4	0.012	14.000
AU6		
Category 1	0.925	1071.000
Category 2	0.048	56.000
Category 3	0.012	14.000
Category 4	0.015	17.000
D9		
Category 1	0.883	1022.000
Category 2	0.083	96.000
Category 3	0.021	24.000
Category 4	0.014	16.000
AV14		
Category 1	0.944	1093.000
Category 2	0.034	39.000
Category 3	0.016	18.000
Category 4	0.007	8.000
P13		
Category 1	0.940	1089.000
Category 2	0.045	52.000
Category 3	0.006	7.000
Category 4	0.009	10.000
D10		
Category 1	0.831	962.000
Category 2	0.122	141.000
Category 3	0.028	32.000
Category 4	0.020	23.000
P14		
Category 1	0.869	1006.000
Category 2	0.107	124.000
Category 3	0.010	12.000
Category 4	0.014	16.000

D11

Category 1	0.873	1011.000
Category 2	0.095	110.000
Category 3	0.016	19.000
Category 4	0.016	18.000

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 162

Chi-Square Test of Model Fit

Value	1385.880*
Degrees of Freedom	696
P-Value	0.0000

* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.029	
90 Percent C.I.	0.027	0.032
Probability RMSEA <= .05		1.000

CFI/TLI

CFI	0.982
TLI	0.981

Chi-Square Test of Model Fit for the Baseline Model

Value	38672.754
Degrees of Freedom	741
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.050

Optimum Function Value for Weighted Least-Squares Estimator

Value	0.50944594D+00

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
AUTONOMY BY				
AU1	1.000	0.000	999.000	999.000
AU2	0.991	0.039	25.271	0.000
AU4	1.017	0.038	26.558	0.000
AU5	0.998	0.043	23.321	0.000
AU6	1.007	0.045	22.351	0.000
DISGUST BY				

D1	1.000	0.000	999.000	999.000
D2	1.035	0.012	84.626	0.000
D3	0.999	0.018	55.647	0.000
D4	1.059	0.015	72.382	0.000
D5	1.041	0.016	63.807	0.000
D8	0.998	0.022	45.994	0.000
D9	1.027	0.020	52.538	0.000
D10	1.051	0.016	64.087	0.000
D11	1.060	0.016	65.177	0.000

AVOIDANC BY

AV1	1.000	0.000	999.000	999.000
AV2	1.058	0.039	26.926	0.000
AV3	1.074	0.032	33.193	0.000
AV4	1.062	0.034	31.116	0.000
AV5	1.050	0.035	30.101	0.000
AV6	1.083	0.037	29.077	0.000
AV7	1.063	0.039	27.330	0.000
AV8	0.988	0.047	21.138	0.000
AV9	1.057	0.042	24.983	0.000
AV10	1.095	0.035	31.470	0.000
AV12	0.999	0.036	27.921	0.000
AV13	0.974	0.041	23.669	0.000
AV14	0.942	0.055	17.228	0.000

PRACTICA BY

P1	1.000	0.000	999.000	999.000
P2	0.978	0.029	33.199	0.000
P3	1.069	0.030	35.826	0.000
P4	0.931	0.038	24.700	0.000
P5	1.024	0.030	34.564	0.000
P6	0.939	0.040	23.253	0.000
P7	0.893	0.041	22.004	0.000
P8	0.919	0.043	21.143	0.000
P10	1.059	0.026	40.996	0.000
P11	0.993	0.033	29.960	0.000
P13	1.063	0.030	35.881	0.000
P14	1.003	0.025	39.686	0.000

DISGUST WITH

AUTONOMY	0.537	0.037	14.466	0.000

AVOIDANC WITH

AUTONOMY	0.651	0.038	17.155	0.000
DISGUST	0.569	0.032	17.568	0.000

PRACTICA WITH

AUTONOMY	0.538	0.038	14.147	0.000
DISGUST	0.663	0.028	23.936	0.000
AVOIDANCE	0.521	0.033	15.578	0.000

Thresholds

D1$1	1.158	0.047	24.442	0.000
D1$2	1.785	0.069	26.054	0.000
D1$3	2.094	0.088	23.789	0.000
AV1$1	1.470	0.056	26.413	0.000
AV1$2	1.903	0.075	25.380	0.000
AV1$3	2.228	0.100	22.372	0.000
P1$1	1.149	0.047	24.355	0.000
P1$2	1.974	0.079	24.856	0.000
P1$3	2.510	0.133	18.856	0.000
AU1$1	1.581	0.060	26.543	0.000
AU1$2	1.903	0.075	25.380	0.000
AU1$3	2.179	0.095	22.916	0.000
D2$1	1.192	0.048	24.778	0.000
D2$2	1.785	0.069	26.054	0.000
D2$3	2.202	0.097	22.655	0.000

AV2$1	1.457	0.055	26.380	0.000
AV2$2	1.890	0.074	25.467	0.000
AV2$3	2.254	0.102	22.066	0.000
P2$1	1.154	0.047	24.398	0.000
P2$2	1.890	0.074	25.467	0.000
P2$3	2.202	0.097	22.655	0.000
AU2$1	1.285	0.050	25.540	0.000
AU2$2	1.841	0.071	25.768	0.000
AU2$3	2.114	0.090	23.593	0.000
D3$1	0.904	0.043	21.089	0.000
D3$2	1.544	0.058	26.532	0.000
D3$3	1.917	0.076	25.287	0.000
AV3$1	1.326	0.051	25.804	0.000
AV3$2	1.865	0.073	25.627	0.000
AV3$3	2.228	0.100	22.372	0.000
P3$1	1.035	0.045	23.015	0.000
P3$2	1.785	0.069	26.054	0.000
P3$3	2.346	0.112	20.969	0.000
D4$1	1.206	0.048	24.900	0.000
D4$2	1.818	0.070	25.894	0.000
D4$3	2.134	0.091	23.383	0.000
AV4$1	1.397	0.053	26.169	0.000
AV4$2	1.959	0.078	24.973	0.000
AV4$3	2.228	0.100	22.372	0.000
P4$1	1.415	0.054	26.239	0.000
P4$2	2.254	0.102	22.066	0.000
P4$3	2.701	0.166	16.273	0.000
AU4$1	1.483	0.056	26.443	0.000
AU4$2	1.903	0.075	25.380	0.000
AU4$3	2.156	0.093	23.158	0.000
D5$1	1.206	0.048	24.900	0.000
D5$2	1.890	0.074	25.467	0.000
D5$3	2.228	0.100	22.372	0.000
AV5$1	1.266	0.050	25.398	0.000
AV5$2	1.903	0.075	25.380	0.000
AV5$3	2.179	0.095	22.916	0.000
P5$1	1.290	0.050	25.574	0.000
P5$2	1.990	0.080	24.730	0.000
P5$3	2.346	0.112	20.969	0.000
AU5$1	1.566	0.059	26.542	0.000
AU5$2	1.990	0.080	24.730	0.000
AU5$3	2.313	0.108	21.369	0.000
AV6$1	1.509	0.057	26.493	0.000
AV6$2	2.039	0.084	24.305	0.000
AV6$3	2.419	0.121	20.035	0.000
AV7$1	1.445	0.055	26.343	0.000
AV7$2	1.931	0.077	25.189	0.000
AV7$3	2.346	0.112	20.969	0.000
P6$1	1.661	0.063	26.459	0.000
P6$2	2.346	0.112	20.969	0.000
P6$3	2.626	0.152	17.290	0.000
D8$1	1.364	0.052	26.012	0.000
D8$2	2.039	0.084	24.305	0.000
D8$3	2.283	0.105	21.733	0.000
AV8$1	1.628	0.061	26.512	0.000
AV8$2	2.114	0.090	23.593	0.000
AV8$3	2.346	0.112	20.969	0.000
P7$1	1.415	0.054	26.239	0.000
P7$2	1.959	0.078	24.973	0.000
P7$3	2.381	0.116	20.527	0.000
AV9$1	1.476	0.056	26.429	0.000
AV9$2	2.006	0.082	24.597	0.000
AV9$3	2.346	0.112	20.969	0.000
P8$1	1.566	0.059	26.542	0.000
P8$2	2.346	0.112	20.969	0.000
P8$3	2.796	0.186	14.999	0.000
AV10$1	1.331	0.052	25.835	0.000

AV10$2	1.917	0.076	25.287	0.000
AV10$3	2.254	0.102	22.066	0.000
P10$1	1.201	0.048	24.860	0.000
P10$2	1.931	0.077	25.189	0.000
P10$3	2.313	0.108	21.369	0.000
AV12$1	1.129	0.047	24.135	0.000
AV12$2	1.644	0.062	26.489	0.000
AV12$3	2.006	0.082	24.597	0.000
P11$1	1.457	0.055	26.380	0.000
P11$2	2.228	0.100	22.372	0.000
P11$3	2.796	0.186	14.999	0.000
AV13$1	1.347	0.052	25.926	0.000
AV13$2	1.807	0.070	25.950	0.000
AV13$3	2.254	0.102	22.066	0.000
AU6$1	1.439	0.055	26.324	0.000
AU6$2	1.931	0.077	25.189	0.000
AU6$3	2.179	0.095	22.916	0.000
D9$1	1.188	0.048	24.737	0.000
D9$2	1.818	0.070	25.894	0.000
D9$3	2.202	0.097	22.655	0.000
AV14$1	1.588	0.060	26.541	0.000
AV14$2	2.006	0.082	24.597	0.000
AV14$3	2.462	0.126	19.483	0.000
P13$1	1.558	0.059	26.540	0.000
P13$2	2.179	0.095	22.916	0.000
P13$3	2.381	0.116	20.527	0.000
D10$1	0.957	0.044	21.918	0.000
D10$2	1.670	0.063	26.442	0.000
D10$3	2.057	0.085	24.144	0.000
P14$1	1.120	0.047	24.046	0.000
P14$2	1.974	0.079	24.856	0.000
P14$3	2.202	0.097	22.655	0.000
D11$1	1.141	0.047	24.268	0.000
D11$2	1.853	0.072	25.700	0.000
D11$3	2.156	0.093	23.158	0.000

Variances

AUTONOMY	0.811	0.048	16.942	0.000
DISGUST	0.824	0.025	32.694	0.000
AVOIDANCE	0.727	0.047	15.608	0.000
PRACTICAL	0.740	0.035	20.880	0.000

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.278E-03
(ratio of smallest to largest eigenvalue)

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Two-Tailed Est./S.E.	P-Value
AUTONOMY BY				
AU1	0.900	0.027	33.884	0.000
AU2	0.893	0.024	37.635	0.000
AU4	0.916	0.022	41.863	0.000
AU5	0.899	0.029	30.564	0.000
AU6	0.907	0.027	34.061	0.000
DISGUST BY				
D1	0.908	0.014	65.389	0.000
D2	0.939	0.010	89.723	0.000

D3	0.907	0.013	71.702	0.000
D4	0.962	0.008	123.365	0.000
D5	0.945	0.009	109.750	0.000
D8	0.906	0.016	56.885	0.000
D9	0.932	0.012	75.927	0.000
D10	0.954	0.007	135.050	0.000
D11	0.963	0.007	139.512	0.000
AVOIDANC BY				
AV1	0.853	0.027	31.216	0.000
AV2	0.903	0.021	44.023	0.000
AV3	0.916	0.016	57.640	0.000
AV4	0.906	0.016	57.222	0.000
AV5	0.896	0.016	57.057	0.000
AV6	0.924	0.019	49.736	0.000
AV7	0.907	0.019	46.855	0.000
AV8	0.843	0.032	26.505	0.000
AV9	0.901	0.022	40.661	0.000
AV10	0.934	0.011	82.002	0.000
AV12	0.852	0.020	43.174	0.000
AV13	0.830	0.027	31.173	0.000
AV14	0.804	0.038	21.377	0.000
PRACTICA BY				
P1	0.860	0.021	41.759	0.000
P2	0.841	0.022	38.372	0.000
P3	0.919	0.015	62.004	0.000
P4	0.801	0.031	26.210	0.000
P5	0.881	0.019	46.732	0.000
P6	0.808	0.035	22.762	0.000
P7	0.768	0.035	21.995	0.000
P8	0.790	0.034	23.214	0.000
P10	0.911	0.015	60.340	0.000
P11	0.854	0.025	33.920	0.000
P13	0.914	0.020	44.874	0.000
P14	0.863	0.018	47.297	0.000
DISGUST WITH				
AUTONOMY	0.657	0.037	17.533	0.000
AVOIDANC WITH				
AUTONOMY	0.847	0.021	39.594	0.000
DISGUST	0.736	0.030	24.805	0.000
PRACTICA WITH				
AUTONOMY	0.695	0.037	18.795	0.000
DISGUST	0.850	0.017	49.160	0.000
AVOIDANCE	0.711	0.032	22.199	0.000
Thresholds				
D1$1	1.158	0.047	24.442	0.000
D1$2	1.785	0.069	26.054	0.000
D1$3	2.094	0.088	23.789	0.000
AV1$1	1.470	0.056	26.413	0.000
AV1$2	1.903	0.075	25.380	0.000
AV1$3	2.228	0.100	22.372	0.000
P1$1	1.149	0.047	24.355	0.000
P1$2	1.974	0.079	24.856	0.000
P1$3	2.510	0.133	18.856	0.000
AU1$1	1.581	0.060	26.543	0.000
AU1$2	1.903	0.075	25.380	0.000
AU1$3	2.179	0.095	22.916	0.000
D2$1	1.192	0.048	24.778	0.000
D2$2	1.785	0.069	26.054	0.000
D2$3	2.202	0.097	22.655	0.000
AV2$1	1.457	0.055	26.380	0.000
AV2$2	1.890	0.074	25.467	0.000

AV2$3	2.254	0.102	22.066	0.000
P2$1	1.154	0.047	24.398	0.000
P2$2	1.890	0.074	25.467	0.000
P2$3	2.202	0.097	22.655	0.000
AU2$1	1.285	0.050	25.540	0.000
AU2$2	1.841	0.071	25.768	0.000
AU2$3	2.114	0.090	23.593	0.000
D3$1	0.904	0.043	21.089	0.000
D3$2	1.544	0.058	26.532	0.000
D3$3	1.917	0.076	25.287	0.000
AV3$1	1.326	0.051	25.804	0.000
AV3$2	1.865	0.073	25.627	0.000
AV3$3	2.228	0.100	22.372	0.000
P3$1	1.035	0.045	23.015	0.000
P3$2	1.785	0.069	26.054	0.000
P3$3	2.346	0.112	20.969	0.000
D4$1	1.206	0.048	24.900	0.000
D4$2	1.818	0.070	25.894	0.000
D4$3	2.134	0.091	23.383	0.000
AV4$1	1.397	0.053	26.169	0.000
AV4$2	1.959	0.078	24.973	0.000
AV4$3	2.228	0.100	22.372	0.000
P4$1	1.415	0.054	26.239	0.000
P4$2	2.254	0.102	22.066	0.000
P4$3	2.701	0.166	16.273	0.000
AU4$1	1.483	0.056	26.443	0.000
AU4$2	1.903	0.075	25.380	0.000
AU4$3	2.156	0.093	23.158	0.000
D5$1	1.206	0.048	24.900	0.000
D5$2	1.890	0.074	25.467	0.000
D5$3	2.228	0.100	22.372	0.000
AV5$1	1.266	0.050	25.398	0.000
AV5$2	1.903	0.075	25.380	0.000
AV5$3	2.179	0.095	22.916	0.000
P5$1	1.290	0.050	25.574	0.000
P5$2	1.990	0.080	24.730	0.000
P5$3	2.346	0.112	20.969	0.000
AU5$1	1.566	0.059	26.542	0.000
AU5$2	1.990	0.080	24.730	0.000
AU5$3	2.313	0.108	21.369	0.000
AV6$1	1.509	0.057	26.493	0.000
AV6$2	2.039	0.084	24.305	0.000
AV6$3	2.419	0.121	20.035	0.000
AV7$1	1.445	0.055	26.343	0.000
AV7$2	1.931	0.077	25.189	0.000
AV7$3	2.346	0.112	20.969	0.000
P6$1	1.661	0.063	26.459	0.000
P6$2	2.346	0.112	20.969	0.000
P6$3	2.626	0.152	17.290	0.000
D8$1	1.364	0.052	26.012	0.000
D8$2	2.039	0.084	24.305	0.000
D8$3	2.283	0.105	21.733	0.000
AV8$1	1.628	0.061	26.512	0.000
AV8$2	2.114	0.090	23.593	0.000
AV8$3	2.346	0.112	20.969	0.000
P7$1	1.415	0.054	26.239	0.000
P7$2	1.959	0.078	24.973	0.000
P7$3	2.381	0.116	20.527	0.000
AV9$1	1.476	0.056	26.429	0.000
AV9$2	2.006	0.082	24.597	0.000
AV9$3	2.346	0.112	20.969	0.000
P8$1	1.566	0.059	26.542	0.000
P8$2	2.346	0.112	20.969	0.000
P8$3	2.796	0.186	14.999	0.000
AV10$1	1.331	0.052	25.835	0.000
AV10$2	1.917	0.076	25.287	0.000
AV10$3	2.254	0.102	22.066	0.000

P10$1	1.201	0.048	24.860	0.000
P10$2	1.931	0.077	25.189	0.000
P10$3	2.313	0.108	21.369	0.000
AV12$1	1.129	0.047	24.135	0.000
AV12$2	1.644	0.062	26.489	0.000
AV12$3	2.006	0.082	24.597	0.000
P11$1	1.457	0.055	26.380	0.000
P11$2	2.228	0.100	22.372	0.000
P11$3	2.796	0.186	14.999	0.000
AV13$1	1.347	0.052	25.926	0.000
AV13$2	1.807	0.070	25.950	0.000
AV13$3	2.254	0.102	22.066	0.000
AU6$1	1.439	0.055	26.324	0.000
AU6$2	1.931	0.077	25.189	0.000
AU6$3	2.179	0.095	22.916	0.000
D9$1	1.188	0.048	24.737	0.000
D9$2	1.818	0.070	25.894	0.000
D9$3	2.202	0.097	22.655	0.000
AV14$1	1.588	0.060	26.541	0.000
AV14$2	2.006	0.082	24.597	0.000
AV14$3	2.462	0.126	19.483	0.000
P13$1	1.558	0.059	26.540	0.000
P13$2	2.179	0.095	22.916	0.000
P13$3	2.381	0.116	20.527	0.000
D10$1	0.957	0.044	21.918	0.000
D10$2	1.670	0.063	26.442	0.000
D10$3	2.057	0.085	24.144	0.000
P14$1	1.120	0.047	24.046	0.000
P14$2	1.974	0.079	24.856	0.000
P14$3	2.202	0.097	22.655	0.000
D11$1	1.141	0.047	24.268	0.000
D11$2	1.853	0.072	25.700	0.000
D11$3	2.156	0.093	23.158	0.000

Variances

AUTONOMY	1.000	0.000	999.000	999.000
DISGUST	1.000	0.000	999.000	999.000
AVOIDANCE	1.000	0.000	999.000	999.000
PRACTICAL	1.000	0.000	999.000	999.000

R-SQUARE

Observed Variable	Estimate	S.E.	Two-Tailed Est./S.E.	P-Value	Residual Variance
D1	0.824	0.025	32.694	0.000	0.176
AV1	0.727	0.047	15.608	0.000	0.273
P1	0.740	0.035	20.880	0.000	0.260
AU1	0.811	0.048	16.942	0.000	0.189
D2	0.882	0.020	44.861	0.000	0.118
AV2	0.815	0.037	22.012	0.000	0.185
P2	0.708	0.037	19.186	0.000	0.292
AU2	0.797	0.042	18.817	0.000	0.203
D3	0.822	0.023	35.851	0.000	0.178
AV3	0.838	0.029	28.820	0.000	0.162
P3	0.845	0.027	31.002	0.000	0.155
D4	0.925	0.015	61.682	0.000	0.075
AV4	0.821	0.029	28.611	0.000	0.179
P4	0.641	0.049	13.105	0.000	0.359
AU4	0.839	0.040	20.932	0.000	0.161
D5	0.893	0.016	54.875	0.000	0.107
AV5	0.802	0.028	28.529	0.000	0.198
P5	0.775	0.033	23.366	0.000	0.225
AU5	0.808	0.053	15.282	0.000	0.192
AV6	0.853	0.034	24.868	0.000	0.147
AV7	0.823	0.035	23.427	0.000	0.177

P6	0.652	0.057	11.381	0.000	0.348
D8	0.821	0.029	28.442	0.000	0.179
AV8	0.710	0.054	13.253	0.000	0.290
P7	0.590	0.054	10.997	0.000	0.410
AV9	0.812	0.040	20.331	0.000	0.188
P8	0.625	0.054	11.607	0.000	0.375
AV10	0.872	0.021	41.001	0.000	0.128
P10	0.830	0.028	30.170	0.000	0.170
AV12	0.725	0.034	21.587	0.000	0.275
P11	0.729	0.043	16.960	0.000	0.271
AV13	0.689	0.044	15.586	0.000	0.311
AU6	0.822	0.048	17.030	0.000	0.178
D9	0.869	0.023	37.963	0.000	0.131
AV14	0.646	0.060	10.689	0.000	0.354
P13	0.836	0.037	22.437	0.000	0.164
D10	0.909	0.013	67.525	0.000	0.091
P14	0.744	0.031	23.648	0.000	0.256
D11	0.926	0.013	69.756	0.000	0.074

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
AUTONOMY BY							
AU1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AU2	0.890	0.914	0.927	0.991	1.056	1.068	1.092
AU4	0.918	0.942	0.954	1.017	1.080	1.092	1.116
AU5	0.888	0.914	0.928	0.998	1.068	1.082	1.108
AU6	0.891	0.919	0.933	1.007	1.081	1.095	1.123
DISGUST BY							
D1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
D2	1.003	1.011	1.014	1.035	1.055	1.059	1.066
D3	0.952	0.964	0.969	0.999	1.028	1.034	1.045
D4	1.022	1.031	1.035	1.059	1.084	1.088	1.097
D5	0.999	1.009	1.014	1.041	1.068	1.073	1.083
D8	0.942	0.956	0.962	0.998	1.034	1.041	1.054
D9	0.977	0.989	0.995	1.027	1.059	1.065	1.077
D10	1.008	1.018	1.024	1.051	1.077	1.083	1.093
D11	1.018	1.028	1.034	1.060	1.087	1.092	1.102
AVOIDANC BY							
AV1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AV2	0.957	0.981	0.994	1.058	1.123	1.135	1.159
AV3	0.990	1.010	1.020	1.074	1.127	1.137	1.157
AV4	0.974	0.995	1.006	1.062	1.118	1.129	1.150
AV5	0.960	0.982	0.993	1.050	1.107	1.118	1.140
AV6	0.987	1.010	1.022	1.083	1.144	1.156	1.179
AV7	0.963	0.987	0.999	1.063	1.127	1.140	1.164
AV8	0.868	0.897	0.911	0.988	1.065	1.080	1.109
AV9	0.948	0.974	0.987	1.057	1.126	1.140	1.166
AV10	1.005	1.027	1.038	1.095	1.152	1.163	1.184
AV12	0.907	0.929	0.940	0.999	1.058	1.069	1.091
AV13	0.868	0.893	0.906	0.974	1.041	1.054	1.080
AV14	0.801	0.835	0.852	0.942	1.032	1.049	1.083
PRACTICA BY							
P1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
P2	0.902	0.921	0.930	0.978	1.027	1.036	1.054
P3	0.992	1.010	1.020	1.069	1.118	1.127	1.145
P4	0.834	0.857	0.869	0.931	0.993	1.005	1.028
P5	0.948	0.966	0.975	1.024	1.073	1.082	1.100
P6	0.835	0.860	0.873	0.939	1.006	1.018	1.043
P7	0.788	0.813	0.826	0.893	0.960	0.973	0.998
P8	0.807	0.834	0.847	0.919	0.990	1.004	1.031
P10	0.993	1.009	1.017	1.059	1.102	1.110	1.126
P11	0.907	0.928	0.938	0.993	1.047	1.058	1.078
P13	0.987	1.005	1.015	1.063	1.112	1.121	1.140
P14	0.938	0.953	0.961	1.003	1.045	1.053	1.068
DISGUST WITH							
AUTONOMY	0.442	0.464	0.476	0.537	0.598	0.610	0.633
AVOIDANC WITH							
AUTONOMY	0.553	0.576	0.588	0.651	0.713	0.725	0.748
DISGUST	0.486	0.506	0.516	0.569	0.623	0.633	0.653
PRACTICA WITH							
AUTONOMY	0.440	0.464	0.476	0.538	0.601	0.613	0.636

DISGUST	0.592	0.609	0.618	0.663	0.709	0.718	0.735
AVOIDANCE	0.435	0.456	0.466	0.521	0.576	0.587	0.607

Thresholds

D1$1	1.036	1.065	1.080	1.158	1.236	1.251	1.280
D1$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D1$3	1.867	1.921	1.949	2.094	2.239	2.266	2.321
AV1$1	1.326	1.361	1.378	1.470	1.561	1.579	1.613
AV1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV1$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P1$1	1.028	1.057	1.072	1.149	1.227	1.242	1.271
P1$2	1.770	1.819	1.844	1.974	2.105	2.130	2.179
P1$3	2.167	2.249	2.291	2.510	2.728	2.770	2.852
AU1$1	1.427	1.464	1.483	1.581	1.678	1.697	1.734
AU1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU1$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
D2$1	1.068	1.098	1.113	1.192	1.271	1.287	1.316
D2$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AV2$1	1.315	1.349	1.366	1.457	1.548	1.565	1.599
AV2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
AV2$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P2$1	1.032	1.061	1.076	1.154	1.231	1.246	1.275
P2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
P2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AU2$1	1.156	1.187	1.203	1.285	1.368	1.384	1.415
AU2$2	1.657	1.701	1.723	1.841	1.958	1.981	2.025
AU2$3	1.883	1.938	1.966	2.114	2.261	2.289	2.344
D3$1	0.793	0.820	0.833	0.904	0.974	0.988	1.014
D3$2	1.394	1.430	1.448	1.544	1.640	1.658	1.694
D3$3	1.722	1.768	1.792	1.917	2.041	2.065	2.112
AV3$1	1.194	1.225	1.242	1.326	1.411	1.427	1.458
AV3$2	1.678	1.722	1.745	1.865	1.985	2.008	2.052
AV3$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P3$1	0.919	0.947	0.961	1.035	1.109	1.123	1.151
P3$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
P3$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
D4$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D4$2	1.637	1.680	1.702	1.818	1.933	1.955	1.999
D4$3	1.899	1.955	1.984	2.134	2.284	2.313	2.369
AV4$1	1.260	1.293	1.309	1.397	1.485	1.502	1.535
AV4$2	1.757	1.805	1.830	1.959	2.088	2.113	2.161
AV4$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P4$1	1.276	1.309	1.326	1.415	1.503	1.520	1.554
P4$2	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P4$3	2.274	2.376	2.428	2.701	2.974	3.027	3.129
AU4$1	1.338	1.373	1.390	1.483	1.575	1.593	1.627
AU4$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU4$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396
D5$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D5$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
D5$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
AV5$1	1.138	1.168	1.184	1.266	1.348	1.364	1.394
AV5$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV5$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
P5$1	1.160	1.192	1.207	1.290	1.373	1.389	1.420
P5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
P5$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AU5$1	1.414	1.450	1.469	1.566	1.663	1.681	1.718
AU5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
AU5$3	2.034	2.101	2.135	2.313	2.491	2.525	2.592
AV6$1	1.362	1.397	1.415	1.509	1.603	1.621	1.656
AV6$2	1.823	1.875	1.901	2.039	2.177	2.203	2.255
AV6$3	2.108	2.183	2.221	2.419	2.618	2.656	2.731
AV7$1	1.303	1.337	1.355	1.445	1.535	1.552	1.586
AV7$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
AV7$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P6$1	1.499	1.538	1.558	1.661	1.764	1.784	1.823
P6$2	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P6$3	2.235	2.328	2.376	2.626	2.876	2.924	3.017
D8$1	1.229	1.261	1.277	1.364	1.450	1.466	1.499
D8$2	1.823	1.875	1.901	2.039	2.177	2.203	2.255
D8$3	2.012	2.077	2.110	2.283	2.455	2.488	2.553
AV8$1	1.469	1.507	1.527	1.628	1.729	1.748	1.786
AV8$2	1.883	1.938	1.966	2.114	2.261	2.289	2.344
AV8$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P7$1	1.276	1.309	1.326	1.415	1.503	1.520	1.554
P7$2	1.757	1.805	1.830	1.959	2.088	2.113	2.161
P7$3	2.082	2.154	2.190	2.381	2.572	2.608	2.680
AV9$1	1.332	1.367	1.384	1.476	1.568	1.586	1.620
AV9$2	1.796	1.846	1.871	2.006	2.140	2.165	2.216
AV9$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P8$1	1.414	1.450	1.469	1.566	1.663	1.681	1.718
P8$2	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P8$3	2.315	2.430	2.489	2.796	3.102	3.161	3.276
AV10$1	1.199	1.230	1.247	1.331	1.416	1.432	1.464

AV10$2	1.722	1.768	1.792	1.917	2.041	2.065	2.112
AV10$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P10$1	1.077	1.106	1.122	1.201	1.281	1.296	1.326
P10$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
P10$3	2.034	2.101	2.135	2.313	2.491	2.525	2.592
AV12$1	1.008	1.037	1.052	1.129	1.206	1.220	1.249
AV12$2	1.484	1.522	1.542	1.644	1.746	1.766	1.804
AV12$3	1.796	1.846	1.871	2.006	2.140	2.165	2.216
P11$1	1.315	1.349	1.366	1.457	1.548	1.565	1.599
P11$2	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P11$3	2.315	2.430	2.489	2.796	3.102	3.161	3.276
AV13$1	1.213	1.245	1.262	1.347	1.433	1.449	1.481
AV13$2	1.627	1.670	1.692	1.807	1.921	1.943	1.986
AV13$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
AU6$1	1.298	1.332	1.349	1.439	1.529	1.546	1.579
AU6$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
AU6$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
D9$1	1.064	1.094	1.109	1.188	1.267	1.282	1.312
D9$2	1.637	1.680	1.702	1.818	1.933	1.955	1.999
D9$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AV14$1	1.434	1.471	1.490	1.588	1.687	1.705	1.742
AV14$2	1.796	1.846	1.871	2.006	2.140	2.165	2.216
AV14$3	2.136	2.214	2.254	2.462	2.670	2.710	2.787
P13$1	1.407	1.443	1.462	1.558	1.655	1.673	1.709
P13$2	1.934	1.992	2.022	2.179	2.335	2.365	2.423
P13$3	2.082	2.154	2.190	2.381	2.572	2.608	2.680
D10$1	0.845	0.872	0.885	0.957	1.029	1.043	1.070
D10$2	1.507	1.546	1.566	1.670	1.774	1.793	1.832
D10$3	1.837	1.890	1.916	2.057	2.197	2.224	2.276
P14$1	1.000	1.029	1.044	1.120	1.197	1.212	1.240
P14$2	1.770	1.819	1.844	1.974	2.105	2.130	2.179
P14$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
D11$1	1.020	1.049	1.064	1.141	1.218	1.233	1.262
D11$2	1.667	1.712	1.734	1.853	1.971	1.994	2.039
D11$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396

Variances

AUTONOMY	0.687	0.717	0.732	0.811	0.889	0.905	0.934
DISGUST	0.759	0.775	0.782	0.824	0.865	0.873	0.889
AVOIDANC	0.607	0.636	0.651	0.727	0.804	0.819	0.847
PRACTICA	0.648	0.670	0.681	0.740	0.798	0.809	0.831

CONFIDENCE INTERVALS OF STANDARDIZED MODEL RESULTS

STDYX Standardization

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
AUTONOMY BY							
AU1	0.832	0.848	0.857	0.900	0.944	0.952	0.969
AU2	0.831	0.846	0.854	0.893	0.932	0.939	0.954
AU4	0.859	0.873	0.880	0.916	0.952	0.959	0.972
AU5	0.823	0.841	0.850	0.899	0.947	0.956	0.974
AU6	0.838	0.855	0.863	0.907	0.951	0.959	0.975
DISGUST BY							
D1	0.872	0.880	0.885	0.908	0.931	0.935	0.943
D2	0.912	0.919	0.922	0.939	0.956	0.960	0.966
D3	0.874	0.882	0.886	0.907	0.927	0.931	0.939
D4	0.942	0.946	0.949	0.962	0.975	0.977	0.982
D5	0.923	0.928	0.931	0.945	0.959	0.962	0.967
D8	0.865	0.875	0.880	0.906	0.932	0.937	0.947
D9	0.901	0.908	0.912	0.932	0.952	0.956	0.964
D10	0.935	0.940	0.942	0.954	0.965	0.967	0.972
D11	0.945	0.949	0.951	0.963	0.974	0.976	0.980
AVOIDANC BY							
AV1	0.783	0.799	0.808	0.853	0.898	0.906	0.923
AV2	0.850	0.862	0.869	0.903	0.936	0.943	0.955
AV3	0.875	0.884	0.889	0.916	0.942	0.947	0.957
AV4	0.865	0.875	0.880	0.906	0.932	0.937	0.947
AV5	0.855	0.865	0.870	0.896	0.921	0.926	0.936
AV6	0.876	0.887	0.893	0.924	0.954	0.960	0.971
AV7	0.857	0.869	0.875	0.907	0.939	0.945	0.957
AV8	0.761	0.781	0.791	0.843	0.895	0.905	0.925
AV9	0.844	0.858	0.865	0.901	0.938	0.945	0.958
AV10	0.904	0.911	0.915	0.934	0.952	0.956	0.963
AV12	0.801	0.813	0.819	0.852	0.884	0.890	0.903
AV13	0.762	0.778	0.787	0.830	0.874	0.883	0.899
AV14	0.707	0.730	0.742	0.804	0.865	0.877	0.900
PRACTICA BY							

P1	0.807	0.820	0.826	0.860	0.894	0.900	0.913
P2	0.785	0.798	0.805	0.841	0.877	0.884	0.898
P3	0.881	0.890	0.895	0.919	0.943	0.948	0.957
P4	0.722	0.741	0.750	0.801	0.851	0.860	0.879
P5	0.832	0.844	0.850	0.881	0.912	0.917	0.929
P6	0.716	0.738	0.749	0.808	0.866	0.877	0.899
P7	0.678	0.700	0.711	0.768	0.825	0.836	0.858
P8	0.703	0.724	0.734	0.790	0.846	0.857	0.878
P10	0.872	0.882	0.886	0.911	0.936	0.941	0.950
P11	0.789	0.804	0.812	0.854	0.895	0.903	0.919
P13	0.862	0.875	0.881	0.914	0.948	0.954	0.967
P14	0.816	0.827	0.833	0.863	0.893	0.898	0.910

DISGUST WITH

AUTONOMY	0.561	0.584	0.596	0.657	0.719	0.731	0.754

AVOIDANC WITH

AUTONOMY	0.792	0.805	0.812	0.847	0.883	0.889	0.903
DISGUST	0.659	0.677	0.687	0.736	0.784	0.794	0.812

PRACTICA WITH

AUTONOMY	0.600	0.622	0.634	0.695	0.756	0.767	0.790
DISGUST	0.805	0.816	0.821	0.850	0.878	0.884	0.894
AVOIDANCE	0.628	0.648	0.658	0.711	0.763	0.773	0.793

Thresholds

D1$1	1.036	1.065	1.080	1.158	1.236	1.251	1.280
D1$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D1$3	1.867	1.921	1.949	2.094	2.239	2.266	2.321
AV1$1	1.326	1.361	1.378	1.470	1.561	1.579	1.613
AV1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV1$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P1$1	1.028	1.057	1.072	1.149	1.227	1.242	1.271
P1$2	1.770	1.819	1.844	1.974	2.105	2.130	2.179
P1$3	2.167	2.249	2.291	2.510	2.728	2.770	2.852
AU1$1	1.427	1.464	1.483	1.581	1.678	1.697	1.734
AU1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU1$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
D2$1	1.068	1.098	1.113	1.192	1.271	1.287	1.316
D2$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AV2$1	1.315	1.349	1.366	1.457	1.548	1.565	1.599
AV2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
AV2$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P2$1	1.032	1.061	1.076	1.154	1.231	1.246	1.275
P2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
P2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AU2$1	1.156	1.187	1.203	1.285	1.368	1.384	1.415
AU2$2	1.657	1.701	1.723	1.841	1.958	1.981	2.025
AU2$3	1.883	1.938	1.966	2.114	2.261	2.289	2.344
D3$1	0.793	0.820	0.833	0.904	0.974	0.988	1.014
D3$2	1.394	1.430	1.448	1.544	1.640	1.658	1.694
D3$3	1.722	1.768	1.792	1.917	2.041	2.065	2.112
AV3$1	1.194	1.225	1.242	1.326	1.411	1.427	1.458
AV3$2	1.678	1.722	1.745	1.865	1.985	2.008	2.052
AV3$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P3$1	0.919	0.947	0.961	1.035	1.109	1.123	1.151
P3$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
P3$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
D4$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D4$2	1.637	1.680	1.702	1.818	1.933	1.955	1.999
D4$3	1.899	1.955	1.984	2.134	2.284	2.313	2.369
AV4$1	1.260	1.293	1.309	1.397	1.485	1.502	1.535
AV4$2	1.757	1.805	1.830	1.959	2.088	2.113	2.161
AV4$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P4$1	1.276	1.309	1.326	1.415	1.503	1.520	1.554
P4$2	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P4$3	2.274	2.376	2.428	2.701	2.974	3.027	3.129
AU4$1	1.338	1.373	1.390	1.483	1.575	1.593	1.627
AU4$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU4$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396
D5$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D5$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
D5$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
AV5$1	1.138	1.168	1.184	1.266	1.348	1.364	1.394
AV5$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV5$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
P5$1	1.160	1.192	1.207	1.290	1.373	1.389	1.420
P5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
P5$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AU5$1	1.414	1.450	1.469	1.566	1.663	1.681	1.718
AU5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
AU5$3	2.034	2.101	2.135	2.313	2.491	2.525	2.592
AV6$1	1.362	1.397	1.415	1.509	1.603	1.621	1.656
AV6$2	1.823	1.875	1.901	2.039	2.177	2.203	2.255
AV6$3	2.108	2.183	2.221	2.419	2.618	2.656	2.731

AV7$1	1.303	1.337	1.355	1.445	1.535	1.552	1.586
AV7$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
AV7$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P6$1	1.499	1.538	1.558	1.661	1.764	1.784	1.823
P6$2	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P6$3	2.235	2.328	2.376	2.626	2.876	2.924	3.017
D8$1	1.229	1.261	1.277	1.364	1.450	1.466	1.499
D8$2	1.823	1.875	1.901	2.039	2.177	2.203	2.255
D8$3	2.012	2.077	2.110	2.283	2.455	2.488	2.553
AV8$1	1.469	1.507	1.527	1.628	1.729	1.748	1.786
AV8$2	1.883	1.938	1.966	2.114	2.261	2.289	2.344
AV8$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P7$1	1.276	1.309	1.326	1.415	1.503	1.520	1.554
P7$2	1.757	1.805	1.830	1.959	2.088	2.113	2.161
P7$3	2.082	2.154	2.190	2.381	2.572	2.608	2.680
AV9$1	1.332	1.367	1.384	1.476	1.568	1.586	1.620
AV9$2	1.796	1.846	1.871	2.006	2.140	2.165	2.216
AV9$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P8$1	1.414	1.450	1.469	1.566	1.663	1.681	1.718
P8$2	2.057	2.126	2.162	2.346	2.530	2.565	2.634
P8$3	2.315	2.430	2.489	2.796	3.102	3.161	3.276
AV10$1	1.199	1.230	1.247	1.331	1.416	1.432	1.464
AV10$2	1.722	1.768	1.792	1.917	2.041	2.065	2.112
AV10$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P10$1	1.077	1.106	1.122	1.201	1.281	1.296	1.326
P10$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
P10$3	2.034	2.101	2.135	2.313	2.491	2.525	2.592
AV12$1	1.008	1.037	1.052	1.129	1.206	1.220	1.249
AV12$2	1.484	1.522	1.542	1.644	1.746	1.766	1.804
AV12$3	1.796	1.846	1.871	2.006	2.140	2.165	2.216
P11$1	1.315	1.349	1.366	1.457	1.548	1.565	1.599
P11$2	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P11$3	2.315	2.430	2.489	2.796	3.102	3.161	3.276
AV13$1	1.213	1.245	1.262	1.347	1.433	1.449	1.481
AV13$2	1.627	1.670	1.692	1.807	1.921	1.943	1.986
AV13$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
AU6$1	1.298	1.332	1.349	1.439	1.529	1.546	1.579
AU6$2	1.733	1.780	1.804	1.931	2.057	2.081	2.128
AU6$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
D9$1	1.064	1.094	1.109	1.188	1.267	1.282	1.312
D9$2	1.637	1.680	1.702	1.818	1.933	1.955	1.999
D9$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AV14$1	1.434	1.471	1.490	1.588	1.687	1.705	1.742
AV14$2	1.796	1.846	1.871	2.006	2.140	2.165	2.216
AV14$3	2.136	2.214	2.254	2.462	2.670	2.710	2.787
P13$1	1.407	1.443	1.462	1.558	1.655	1.673	1.709
P13$2	1.934	1.992	2.022	2.179	2.335	2.365	2.423
P13$3	2.082	2.154	2.190	2.381	2.572	2.608	2.680
D10$1	0.845	0.872	0.885	0.957	1.029	1.043	1.070
D10$2	1.507	1.546	1.566	1.670	1.774	1.793	1.832
D10$3	1.837	1.890	1.916	2.057	2.197	2.224	2.276
P14$1	1.000	1.029	1.044	1.120	1.197	1.212	1.240
P14$2	1.770	1.819	1.844	1.974	2.105	2.130	2.179
P14$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
D11$1	1.020	1.049	1.064	1.141	1.218	1.233	1.262
D11$2	1.667	1.712	1.734	1.853	1.971	1.994	2.039
D11$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396

Variances

AUTONOMY	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DISGUST	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AVOIDANC	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PRACTICA	1.000	1.000	1.000	1.000	1.000	1.000	1.000

MODEL MODIFICATION INDICES

Minimum M.I. value for printing the modification index 30.000

	M.I.	E.P.C.	Std E.P.C.	StdYX E.P.C.
ON/BY Statements				
AV5 ON DISGUST / DISGUST BY AV5	34.042	-0.268	-0.243	-0.243
AV5 ON PRACTICA / PRACTICA BY AV5	35.127	-0.282	-0.243	-0.243
AV9 ON DISGUST / DISGUST BY AV9	36.952	0.271	0.246	0.246
AV9 ON PRACTICA / PRACTICA BY AV9	35.534	0.283	0.244	0.244

P11 ON DISGUST /
DISGUST BY P11 34.676 -0.537 -0.487 -0.487

ON Statements

AVOIDANC ON AV5 40.946 0.113 0.132 0.132
AVOIDANC ON AV10 31.974 0.097 0.113 0.113
PRACTICA ON P11 31.721 0.111 0.129 0.129
AU1 ON AU2 35.819 0.180 0.180 0.180
AU2 ON AU1 35.825 0.180 0.180 0.180
AV5 ON P10 33.542 -0.197 -0.197 -0.197
AV5 ON P11 31.860 -0.209 -0.209 -0.209
AV9 ON D8 30.383 0.161 0.161 0.161
AV9 ON P8 30.957 0.192 0.192 0.192

WITH Statements

AU2 WITH AU1 35.819 0.180 0.180 0.915
AV5 WITH AVOIDANC 40.934 0.113 0.132 0.297
AV10 WITH AVOIDANC 31.963 0.097 0.113 0.316
P11 WITH PRACTICA 31.723 0.111 0.129 0.248

DIAGRAM INFORMATION

Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

Diagram output
c:\users\w0001047\desktop\measure invariance results\latest\mod indices\after mods.dgm

Beginning Time: 20:26:43
Ending Time: 20:27:24
Elapsed Time: 00:00:41

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Support: Support@StatModel.com

Appendix J Mplus Four Factors Short-Scale CFA Results

Mplus VERSION 8.6
MUTHEN & MUTHEN
03/18/2022 6:40 PM

OUTPUT SECTIONS

INPUT INSTRUCTIONS

```
TITLE: CFA

DATA: FILE = C:\Users\w0001047\Desktop\Measure Invariance Results\Latest\Original.csv;

VARIABLE:
NAMES ARE age gender return_kit N1 D1 Av1 P1 Au1 D2 Av2 P2 Au2 D3 Av3
P3 Au3 D4 Av4 P4 Au4 D5 Av5 P5 Au5 D6 Av6 D7 Av7 P6 D8 Av8
P7 Av9 P8 Av10 P9 Av11 P10 N2 Av12 P11 Av13 P12 Au6 D9 Av14
P13 D10 P14 N3 D11 D12;

CATEGORICAL ARE D1 Av1 P1 Au1 D2 Av2 P2 Au2 D3 Av3
P3 Au3 D4 Av4 P4 Au4 D5 Av5 P5 Au5;

USEVARIABLES ARE D1 Av1 P1 Au1 D2 Av2 P2 Au2 D3 Av3
P3 Au3 D4 Av4 P4 Au4 D5 Av5 P5 Au5;

MISSING=ALL (999);

MODEL:
Autonomy BY Au1 Au2 Au3 Au4 Au5;
Disgust BY D1 D2 D3 D4 D5;
Avoidance BY Av1 Av2 Av3 Av4 Av5;
Practical BY P1 P2 P3 P4 P5;

! savedata:
!file is ALL4factor.dat;
!save = fscores;

OUTPUT: StdYX; !MODINDICES(all 20);
CINTERVAL;
```

INPUT READING TERMINATED NORMALLY

CFA

SUMMARY OF ANALYSIS

Number of groups 1
Number of observations 1158

Number of dependent variables 20
Number of independent variables 0
Number of continuous latent variables 4

Observed dependent variables

Binary and ordered categorical (ordinal)
D1 AV1 P1 AU1 D2 AV2
P2 AU2 D3 AV3 P3 AU3
D4 AV4 P4 AU4 D5 AV5
P5 AU5

Continuous latent variables
AUTONOMY DISGUST AVOIDANC PRACTICA

Estimator WLSMV
Maximum number of iterations 1000
Convergence criterion 0.500D-04
Maximum number of steepest descent iterations 20
Maximum number of iterations for H1 2000
Convergence criterion for H1 0.100D-03
Parameterization DELTA
Link PROBIT

Input data file(s)
C:\Users\w0001047\Desktop\Measure Invariance Results\Latest\Original.csv

Input data format FREE

SUMMARY OF DATA

Number of missing data patterns 1

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.100

PROPORTION OF DATA PRESENT

Covariance Coverage

	D1	AV1	P1	AU1	D2
D1	1.000				
AV1	1.000	1.000			
P1	1.000	1.000	1.000		
AU1	1.000	1.000	1.000	1.000	
D2	1.000	1.000	1.000	1.000	1.000
AV2	1.000	1.000	1.000	1.000	1.000

P2	1.000	1.000	1.000	1.000	1.000
AU2	1.000	1.000	1.000	1.000	1.000
D3	1.000	1.000	1.000	1.000	1.000
AV3	1.000	1.000	1.000	1.000	1.000
P3	1.000	1.000	1.000	1.000	1.000
AU3	1.000	1.000	1.000	1.000	1.000
D4	1.000	1.000	1.000	1.000	1.000
AV4	1.000	1.000	1.000	1.000	1.000
P4	1.000	1.000	1.000	1.000	1.000
AU4	1.000	1.000	1.000	1.000	1.000
D5	1.000	1.000	1.000	1.000	1.000
AV5	1.000	1.000	1.000	1.000	1.000
P5	1.000	1.000	1.000	1.000	1.000
AU5	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	AV2	P2	AU2	D3	AV3
AV2	1.000				
P2	1.000	1.000			
AU2	1.000	1.000	1.000		
D3	1.000	1.000	1.000	1.000	
AV3	1.000	1.000	1.000	1.000	1.000
P3	1.000	1.000	1.000	1.000	1.000
AU3	1.000	1.000	1.000	1.000	1.000
D4	1.000	1.000	1.000	1.000	1.000
AV4	1.000	1.000	1.000	1.000	1.000
P4	1.000	1.000	1.000	1.000	1.000
AU4	1.000	1.000	1.000	1.000	1.000
D5	1.000	1.000	1.000	1.000	1.000
AV5	1.000	1.000	1.000	1.000	1.000
P5	1.000	1.000	1.000	1.000	1.000
AU5	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	P3	AU3	D4	AV4	P4
P3	1.000				
AU3	1.000	1.000			
D4	1.000	1.000	1.000		
AV4	1.000	1.000	1.000	1.000	
P4	1.000	1.000	1.000	1.000	1.000
AU4	1.000	1.000	1.000	1.000	1.000
D5	1.000	1.000	1.000	1.000	1.000
AV5	1.000	1.000	1.000	1.000	1.000
P5	1.000	1.000	1.000	1.000	1.000
AU5	1.000	1.000	1.000	1.000	1.000

Covariance Coverage

	AU4	D5	AV5	P5	AU5
AU4	1.000				
D5	1.000	1.000			
AV5	1.000	1.000	1.000		
P5	1.000	1.000	1.000	1.000	
AU5	1.000	1.000	1.000	1.000	1.000

UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

D1

Category 1	0.877	1015.000
Category 2	0.086	100.000
Category 3	0.019	22.000

Category 4	0.018	21.000
AV1		
Category 1	0.929	1076.000
Category 2	0.042	49.000
Category 3	0.016	18.000
Category 4	0.013	15.000
P1		
Category 1	0.875	1013.000
Category 2	0.101	117.000
Category 3	0.018	21.000
Category 4	0.006	7.000
AU1		
Category 1	0.943	1092.000
Category 2	0.028	33.000
Category 3	0.014	16.000
Category 4	0.015	17.000
D2		
Category 1	0.883	1023.000
Category 2	0.079	92.000
Category 3	0.023	27.000
Category 4	0.014	16.000
AV2		
Category 1	0.927	1074.000
Category 2	0.043	50.000
Category 3	0.017	20.000
Category 4	0.012	14.000
P2		
Category 1	0.876	1014.000
Category 2	0.095	110.000
Category 3	0.016	18.000
Category 4	0.014	16.000
AU2		
Category 1	0.901	1043.000
Category 2	0.066	77.000
Category 3	0.016	18.000
Category 4	0.017	20.000
D3		
Category 1	0.817	946.000
Category 2	0.122	141.000
Category 3	0.034	39.000
Category 4	0.028	32.000
AV3		
Category 1	0.908	1051.000
Category 2	0.061	71.000
Category 3	0.018	21.000
Category 4	0.013	15.000
P3		
Category 1	0.850	984.000
Category 2	0.113	131.000
Category 3	0.028	32.000
Category 4	0.009	11.000
AU3		
Category 1	0.880	1019.000
Category 2	0.086	100.000
Category 3	0.016	19.000
Category 4	0.017	20.000
D4		
Category 1	0.886	1026.000
Category 2	0.079	92.000
Category 3	0.018	21.000
Category 4	0.016	19.000
AV4		
Category 1	0.919	1064.000
Category 2	0.056	65.000
Category 3	0.012	14.000
Category 4	0.013	15.000
P4		

Category 1	0.921	1067.000
Category 2	0.066	77.000
Category 3	0.009	10.000
Category 4	0.003	4.000
AU4		
Category 1	0.931	1078.000
Category 2	0.041	47.000
Category 3	0.013	15.000
Category 4	0.016	18.000
D5		
Category 1	0.886	1026.000
Category 2	0.085	98.000
Category 3	0.016	19.000
Category 4	0.013	15.000
AV5		
Category 1	0.897	1039.000
Category 2	0.074	86.000
Category 3	0.014	16.000
Category 4	0.015	17.000
P5		
Category 1	0.902	1044.000
Category 2	0.075	87.000
Category 3	0.014	16.000
Category 4	0.009	11.000
AU5		
Category 1	0.941	1090.000
Category 2	0.035	41.000
Category 3	0.013	15.000
Category 4	0.010	12.000

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 86

Chi-Square Test of Model Fit

Value	429.282*
Degrees of Freedom	164
P-Value	0.0000

* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.037	
90 Percent C.I.	0.033	0.042
Probability RMSEA <= .05	1.000	

CFI/TLI

CFI	0.988
TLI	0.986

Chi-Square Test of Model Fit for the Baseline Model

Value	21552.863
Degrees of Freedom	190
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value 0.042

Optimum Function Value for Weighted Least-Squares Estimator

Value 0.12239108D+00

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
AUTONOMY BY				
AU1	1.000	0.000	999.000	999.000
AU2	1.036	0.022	47.439	0.000
AU3	0.967	0.021	46.585	0.000
AU4	0.963	0.029	32.694	0.000
AU5	0.954	0.035	27.405	0.000
DISGUST BY				
D1	1.000	0.000	999.000	999.000
D2	1.038	0.014	75.874	0.000
D3	0.988	0.019	52.230	0.000
D4	1.064	0.016	65.806	0.000
D5	1.033	0.015	69.565	0.000
AVOIDANC BY				
AV1	1.000	0.000	999.000	999.000
AV2	1.061	0.038	28.077	0.000
AV3	1.060	0.030	35.416	0.000
AV4	1.045	0.033	32.120	0.000
AV5	1.015	0.031	32.356	0.000
PRACTICA BY				
P1	1.000	0.000	999.000	999.000
P2	0.996	0.032	30.905	0.000
P3	1.051	0.032	32.925	0.000
P4	0.907	0.040	22.542	0.000
P5	1.004	0.034	29.234	0.000
DISGUST WITH				
AUTONOMY	0.544	0.038	14.491	0.000
AVOIDANC WITH				
AUTONOMY	0.633	0.037	16.912	0.000
DISGUST	0.567	0.036	15.785	0.000
PRACTICA WITH				
AUTONOMY	0.543	0.037	14.566	0.000
DISGUST	0.680	0.027	24.787	0.000
AVOIDANCE	0.520	0.036	14.589	0.000
Thresholds				
D1$1	1.158	0.047	24.442	0.000
D1$2	1.785	0.069	26.054	0.000
D1$3	2.094	0.088	23.789	0.000
AV1$1	1.470	0.056	26.413	0.000
AV1$2	1.903	0.075	25.380	0.000
AV1$3	2.228	0.100	22.372	0.000
P1$1	1.149	0.047	24.355	0.000
P1$2	1.974	0.079	24.856	0.000
P1$3	2.510	0.133	18.856	0.000
AU1$1	1.581	0.060	26.543	0.000

AU1$2	1.903	0.075	25.380	0.000
AU1$3	2.179	0.095	22.916	0.000
D2$1	1.192	0.048	24.778	0.000
D2$2	1.785	0.069	26.054	0.000
D2$3	2.202	0.097	22.655	0.000
AV2$1	1.457	0.055	26.380	0.000
AV2$2	1.890	0.074	25.467	0.000
AV2$3	2.254	0.102	22.066	0.000
P2$1	1.154	0.047	24.398	0.000
P2$2	1.890	0.074	25.467	0.000
P2$3	2.202	0.097	22.655	0.000
AU2$1	1.285	0.050	25.540	0.000
AU2$2	1.841	0.071	25.768	0.000
AU2$3	2.114	0.090	23.593	0.000
D3$1	0.904	0.043	21.089	0.000
D3$2	1.544	0.058	26.532	0.000
D3$3	1.917	0.076	25.287	0.000
AV3$1	1.326	0.051	25.804	0.000
AV3$2	1.865	0.073	25.627	0.000
AV3$3	2.228	0.100	22.372	0.000
P3$1	1.035	0.045	23.015	0.000
P3$2	1.785	0.069	26.054	0.000
P3$3	2.346	0.112	20.969	0.000
AU3$1	1.175	0.048	24.612	0.000
AU3$2	1.829	0.071	25.833	0.000
AU3$3	2.114	0.090	23.593	0.000
D4$1	1.206	0.048	24.900	0.000
D4$2	1.818	0.070	25.894	0.000
D4$3	2.134	0.091	23.383	0.000
AV4$1	1.397	0.053	26.169	0.000
AV4$2	1.959	0.078	24.973	0.000
AV4$3	2.228	0.100	22.372	0.000
P4$1	1.415	0.054	26.239	0.000
P4$2	2.254	0.102	22.066	0.000
P4$3	2.701	0.166	16.273	0.000
AU4$1	1.483	0.056	26.443	0.000
AU4$2	1.903	0.075	25.380	0.000
AU4$3	2.156	0.093	23.158	0.000
D5$1	1.206	0.048	24.900	0.000
D5$2	1.890	0.074	25.467	0.000
D5$3	2.228	0.100	22.372	0.000
AV5$1	1.266	0.050	25.398	0.000
AV5$2	1.903	0.075	25.380	0.000
AV5$3	2.179	0.095	22.916	0.000
P5$1	1.290	0.050	25.574	0.000
P5$2	1.990	0.080	24.730	0.000
P5$3	2.346	0.112	20.969	0.000
AU5$1	1.566	0.059	26.542	0.000
AU5$2	1.990	0.080	24.730	0.000
AU5$3	2.313	0.108	21.369	0.000

Variances

AUTONOMY	0.873	0.033	26.515	0.000
DISGUST	0.833	0.024	34.276	0.000
AVOIDANCE	0.777	0.045	17.327	0.000
PRACTICAL	0.744	0.037	20.097	0.000

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.972E-03
(ratio of smallest to largest eigenvalue)

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Two-Tailed Est./S.E.	P-Value
AUTONOMY BY				
AU1	0.934	0.018	53.030	0.000
AU2	0.968	0.012	82.091	0.000
AU3	0.903	0.015	60.375	0.000
AU4	0.900	0.025	36.127	0.000
AU5	0.891	0.030	30.019	0.000
DISGUST BY				
D1	0.913	0.013	68.553	0.000
D2	0.948	0.009	100.108	0.000
D3	0.902	0.014	62.794	0.000
D4	0.971	0.008	129.219	0.000
D5	0.943	0.009	105.075	0.000
AVOIDANC BY				
AV1	0.881	0.025	34.654	0.000
AV2	0.935	0.020	47.091	0.000
AV3	0.934	0.016	57.417	0.000
AV4	0.921	0.016	56.622	0.000
AV5	0.895	0.017	53.630	0.000
PRACTICA BY				
P1	0.863	0.021	40.194	0.000
P2	0.859	0.022	39.935	0.000
P3	0.906	0.017	52.198	0.000
P4	0.782	0.032	24.160	0.000
P5	0.866	0.021	40.919	0.000
DISGUST WITH				
AUTONOMY	0.637	0.038	16.787	0.000
AVOIDANC WITH				
AUTONOMY	0.769	0.031	25.010	0.000
DISGUST	0.705	0.035	20.221	0.000
PRACTICA WITH				
AUTONOMY	0.674	0.036	18.901	0.000
DISGUST	0.864	0.018	47.369	0.000
AVOIDANCE	0.684	0.037	18.633	0.000
Thresholds				
D1$1	1.158	0.047	24.442	0.000
D1$2	1.785	0.069	26.054	0.000
D1$3	2.094	0.088	23.789	0.000
AV1$1	1.470	0.056	26.413	0.000
AV1$2	1.903	0.075	25.380	0.000
AV1$3	2.228	0.100	22.372	0.000
P1$1	1.149	0.047	24.355	0.000
P1$2	1.974	0.079	24.856	0.000
P1$3	2.510	0.133	18.856	0.000
AU1$1	1.581	0.060	26.543	0.000
AU1$2	1.903	0.075	25.380	0.000
AU1$3	2.179	0.095	22.916	0.000
D2$1	1.192	0.048	24.778	0.000
D2$2	1.785	0.069	26.054	0.000
D2$3	2.202	0.097	22.655	0.000
AV2$1	1.457	0.055	26.380	0.000
AV2$2	1.890	0.074	25.467	0.000
AV2$3	2.254	0.102	22.066	0.000
P2$1	1.154	0.047	24.398	0.000
P2$2	1.890	0.074	25.467	0.000
P2$3	2.202	0.097	22.655	0.000

AU2$1	1.285	0.050	25.540	0.000
AU2$2	1.841	0.071	25.768	0.000
AU2$3	2.114	0.090	23.593	0.000
D3$1	0.904	0.043	21.089	0.000
D3$2	1.544	0.058	26.532	0.000
D3$3	1.917	0.076	25.287	0.000
AV3$1	1.326	0.051	25.804	0.000
AV3$2	1.865	0.073	25.627	0.000
AV3$3	2.228	0.100	22.372	0.000
P3$1	1.035	0.045	23.015	0.000
P3$2	1.785	0.069	26.054	0.000
P3$3	2.346	0.112	20.969	0.000
AU3$1	1.175	0.048	24.612	0.000
AU3$2	1.829	0.071	25.833	0.000
AU3$3	2.114	0.090	23.593	0.000
D4$1	1.206	0.048	24.900	0.000
D4$2	1.818	0.070	25.894	0.000
D4$3	2.134	0.091	23.383	0.000
AV4$1	1.397	0.053	26.169	0.000
AV4$2	1.959	0.078	24.973	0.000
AV4$3	2.228	0.100	22.372	0.000
P4$1	1.415	0.054	26.239	0.000
P4$2	2.254	0.102	22.066	0.000
P4$3	2.701	0.166	16.273	0.000
AU4$1	1.483	0.056	26.443	0.000
AU4$2	1.903	0.075	25.380	0.000
AU4$3	2.156	0.093	23.158	0.000
D5$1	1.206	0.048	24.900	0.000
D5$2	1.890	0.074	25.467	0.000
D5$3	2.228	0.100	22.372	0.000
AV5$1	1.266	0.050	25.398	0.000
AV5$2	1.903	0.075	25.380	0.000
AV5$3	2.179	0.095	22.916	0.000
P5$1	1.290	0.050	25.574	0.000
P5$2	1.990	0.080	24.730	0.000
P5$3	2.346	0.112	20.969	0.000
AU5$1	1.566	0.059	26.542	0.000
AU5$2	1.990	0.080	24.730	0.000
AU5$3	2.313	0.108	21.369	0.000

Variances

AUTONOMY	1.000	0.000	999.000	999.000
DISGUST	1.000	0.000	999.000	999.000
AVOIDANCE	1.000	0.000	999.000	999.000
PRACTICAL	1.000	0.000	999.000	999.000

R-SQUARE

Observed Variable	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Residual Variance
D1	0.833	0.024	34.276	0.000	0.167
AV1	0.777	0.045	17.327	0.000	0.223
P1	0.744	0.037	20.097	0.000	0.256
AU1	0.873	0.033	26.515	0.000	0.127
D2	0.898	0.018	50.054	0.000	0.102
AV2	0.875	0.037	23.545	0.000	0.125
P2	0.738	0.037	19.968	0.000	0.262
AU2	0.937	0.023	41.046	0.000	0.063
D3	0.814	0.026	31.397	0.000	0.186
AV3	0.872	0.030	28.709	0.000	0.128
P3	0.821	0.031	26.099	0.000	0.179
AU3	0.816	0.027	30.187	0.000	0.184
D4	0.944	0.015	64.609	0.000	0.056
AV4	0.848	0.030	28.311	0.000	0.152
P4	0.612	0.051	12.080	0.000	0.388

AU4	0.810	0.045	18.064	0.000	0.190
D5	0.889	0.017	52.537	0.000	0.111
AV5	0.801	0.030	26.815	0.000	0.199
P5	0.749	0.037	20.459	0.000	0.251
AU5	0.794	0.053	15.010	0.000	0.206

CONFIDENCE INTERVALS OF MODEL RESULTS

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
AUTONOMY BY							
AU1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AU2	0.980	0.993	1.000	1.036	1.072	1.079	1.092
AU3	0.913	0.926	0.933	0.967	1.001	1.007	1.020
AU4	0.888	0.906	0.915	0.963	1.012	1.021	1.039
AU5	0.864	0.885	0.896	0.954	1.011	1.022	1.043
DISGUST BY							
D1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
D2	1.003	1.011	1.015	1.038	1.060	1.065	1.073
D3	0.939	0.951	0.957	0.988	1.019	1.025	1.037
D4	1.023	1.032	1.038	1.064	1.091	1.096	1.106
D5	0.995	1.004	1.008	1.033	1.057	1.062	1.071
AVOIDANC BY							
AV1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AV2	0.964	0.987	0.999	1.061	1.123	1.135	1.159
AV3	0.982	1.001	1.010	1.060	1.109	1.118	1.137
AV4	0.961	0.981	0.991	1.045	1.098	1.109	1.129
AV5	0.934	0.954	0.964	1.015	1.067	1.077	1.096
PRACTICA BY							
P1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
P2	0.913	0.933	0.943	0.996	1.049	1.059	1.079
P3	0.968	0.988	0.998	1.051	1.103	1.113	1.133
P4	0.803	0.828	0.841	0.907	0.973	0.986	1.011
P5	0.915	0.936	0.947	1.004	1.060	1.071	1.092
DISGUST WITH							
AUTONOMY	0.447	0.470	0.482	0.544	0.605	0.617	0.640
AVOIDANC WITH							
AUTONOMY	0.537	0.560	0.572	0.633	0.695	0.707	0.730
DISGUST	0.474	0.497	0.508	0.567	0.626	0.637	0.659
PRACTICA WITH							
AUTONOMY	0.447	0.470	0.482	0.543	0.604	0.616	0.639
DISGUST	0.610	0.627	0.635	0.680	0.726	0.734	0.751
AVOIDANCE	0.428	0.450	0.461	0.520	0.579	0.590	0.612
Thresholds							
D1$1	1.036	1.065	1.080	1.158	1.236	1.251	1.280
D1$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D1$3	1.867	1.921	1.949	2.094	2.239	2.266	2.321
AV1$1	1.326	1.361	1.378	1.470	1.561	1.579	1.613
AV1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV1$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P1$1	1.028	1.057	1.072	1.149	1.227	1.242	1.271
P1$2	1.770	1.819	1.844	1.974	2.105	2.130	2.179
P1$3	2.167	2.249	2.291	2.510	2.728	2.770	2.852
AU1$1	1.427	1.464	1.483	1.581	1.678	1.697	1.734
AU1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU1$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
D2$1	1.068	1.098	1.113	1.192	1.271	1.287	1.316
D2$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AV2$1	1.315	1.349	1.366	1.457	1.548	1.565	1.599
AV2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
AV2$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P2$1	1.032	1.061	1.076	1.154	1.231	1.246	1.275
P2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
P2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AU2$1	1.156	1.187	1.203	1.285	1.368	1.384	1.415
AU2$2	1.657	1.701	1.723	1.841	1.958	1.981	2.025
AU2$3	1.883	1.938	1.966	2.114	2.261	2.289	2.344
D3$1	0.793	0.820	0.833	0.904	0.974	0.988	1.014
D3$2	1.394	1.430	1.448	1.544	1.640	1.658	1.694
D3$3	1.722	1.768	1.792	1.917	2.041	2.065	2.112
AV3$1	1.194	1.225	1.242	1.326	1.411	1.427	1.458
AV3$2	1.678	1.722	1.745	1.865	1.985	2.008	2.052
AV3$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P3$1	0.919	0.947	0.961	1.035	1.109	1.123	1.151
P3$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961

P3$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AU3$1	1.052	1.081	1.096	1.175	1.253	1.268	1.298
AU3$2	1.647	1.690	1.713	1.829	1.946	1.968	2.012
AU3$3	1.883	1.938	1.966	2.114	2.261	2.289	2.344
D4$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D4$2	1.637	1.680	1.702	1.818	1.933	1.955	1.999
D4$3	1.899	1.955	1.984	2.134	2.284	2.313	2.369
AV4$1	1.260	1.293	1.309	1.397	1.485	1.502	1.535
AV4$2	1.757	1.805	1.830	1.959	2.088	2.113	2.161
AV4$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P4$1	1.276	1.309	1.326	1.415	1.503	1.520	1.554
P4$2	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P4$3	2.274	2.376	2.428	2.701	2.974	3.027	3.129
AU4$1	1.338	1.373	1.390	1.483	1.575	1.593	1.627
AU4$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU4$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396
D5$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D5$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
D5$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
AV5$1	1.138	1.168	1.184	1.266	1.348	1.364	1.394
AV5$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV5$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
P5$1	1.160	1.192	1.207	1.290	1.373	1.389	1.420
P5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
P5$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AU5$1	1.414	1.450	1.469	1.566	1.663	1.681	1.718
AU5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
AU5$3	2.034	2.101	2.135	2.313	2.491	2.525	2.592

Variances

AUTONOMY	0.788	0.809	0.819	0.873	0.927	0.938	0.958
DISGUST	0.771	0.786	0.793	0.833	0.873	0.881	0.896
AVOIDANC	0.661	0.689	0.703	0.777	0.850	0.864	0.892
PRACTICA	0.649	0.671	0.683	0.744	0.805	0.817	0.839

CONFIDENCE INTERVALS OF STANDARDIZED MODEL RESULTS

STDYX Standardization

	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
AUTONOMY BY							
AU1	0.889	0.900	0.905	0.934	0.963	0.969	0.980
AU2	0.938	0.945	0.949	0.968	0.987	0.991	0.998
AU3	0.865	0.874	0.879	0.903	0.928	0.933	0.942
AU4	0.836	0.851	0.859	0.900	0.941	0.949	0.964
AU5	0.815	0.833	0.842	0.891	0.940	0.949	0.968
DISGUST BY							
D1	0.879	0.887	0.891	0.913	0.935	0.939	0.947
D2	0.923	0.929	0.932	0.948	0.963	0.966	0.972
D3	0.865	0.874	0.878	0.902	0.926	0.930	0.939
D4	0.952	0.957	0.959	0.971	0.984	0.986	0.991
D5	0.920	0.925	0.928	0.943	0.958	0.960	0.966
AVOIDANC BY							
AV1	0.816	0.831	0.839	0.881	0.923	0.931	0.947
AV2	0.884	0.896	0.903	0.935	0.968	0.974	0.986
AV3	0.892	0.902	0.907	0.934	0.961	0.966	0.976
AV4	0.879	0.889	0.894	0.921	0.947	0.953	0.963
AV5	0.852	0.862	0.867	0.895	0.922	0.927	0.938
PRACTICA BY							
P1	0.807	0.820	0.827	0.863	0.898	0.905	0.918
P2	0.804	0.817	0.824	0.859	0.894	0.901	0.914
P3	0.861	0.872	0.878	0.906	0.935	0.940	0.951
P4	0.699	0.719	0.729	0.782	0.836	0.846	0.866
P5	0.811	0.824	0.831	0.866	0.901	0.907	0.920
DISGUST WITH							
AUTONOMY	0.539	0.563	0.575	0.637	0.700	0.712	0.735
AVOIDANC WITH							
AUTONOMY	0.690	0.709	0.719	0.769	0.820	0.829	0.848
DISGUST	0.615	0.636	0.647	0.705	0.762	0.773	0.794
PRACTICA WITH							
AUTONOMY	0.582	0.604	0.615	0.674	0.732	0.744	0.766
DISGUST	0.817	0.828	0.834	0.864	0.894	0.900	0.911
AVOIDANCE	0.590	0.612	0.624	0.684	0.745	0.756	0.779
Thresholds							
D1$1	1.036	1.065	1.080	1.158	1.236	1.251	1.280

D1$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D1$3	1.867	1.921	1.949	2.094	2.239	2.266	2.321
AV1$1	1.326	1.361	1.378	1.470	1.561	1.579	1.613
AV1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV1$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P1$1	1.028	1.057	1.072	1.149	1.227	1.242	1.271
P1$2	1.770	1.819	1.844	1.974	2.105	2.130	2.179
P1$3	2.167	2.249	2.291	2.510	2.728	2.770	2.852
AU1$1	1.427	1.464	1.483	1.581	1.678	1.697	1.734
AU1$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU1$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
D2$1	1.068	1.098	1.113	1.192	1.271	1.287	1.316
D2$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
D2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AV2$1	1.315	1.349	1.366	1.457	1.548	1.565	1.599
AV2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
AV2$3	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P2$1	1.032	1.061	1.076	1.154	1.231	1.246	1.275
P2$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
P2$3	1.952	2.012	2.043	2.202	2.362	2.393	2.453
AU2$1	1.156	1.187	1.203	1.285	1.368	1.384	1.415
AU2$2	1.657	1.701	1.723	1.841	1.958	1.981	2.025
AU2$3	1.883	1.938	1.966	2.114	2.261	2.289	2.344
D3$1	0.793	0.820	0.833	0.904	0.974	0.988	1.014
D3$2	1.394	1.430	1.448	1.544	1.640	1.658	1.694
D3$3	1.722	1.768	1.792	1.917	2.041	2.065	2.112
AV3$1	1.194	1.225	1.242	1.326	1.411	1.427	1.458
AV3$2	1.678	1.722	1.745	1.865	1.985	2.008	2.052
AV3$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P3$1	0.919	0.947	0.961	1.035	1.109	1.123	1.151
P3$2	1.609	1.651	1.672	1.785	1.898	1.919	1.961
P3$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AU3$1	1.052	1.081	1.096	1.175	1.253	1.268	1.298
AU3$2	1.647	1.690	1.713	1.829	1.946	1.968	2.012
AU3$3	1.883	1.938	1.966	2.114	2.261	2.289	2.344
D4$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D4$2	1.637	1.680	1.702	1.818	1.933	1.955	1.999
D4$3	1.899	1.955	1.984	2.134	2.284	2.313	2.369
AV4$1	1.260	1.293	1.309	1.397	1.485	1.502	1.535
AV4$2	1.757	1.805	1.830	1.959	2.088	2.113	2.161
AV4$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
P4$1	1.276	1.309	1.326	1.415	1.503	1.520	1.554
P4$2	1.991	2.054	2.086	2.254	2.422	2.454	2.517
P4$3	2.274	2.376	2.428	2.701	2.974	3.027	3.129
AU4$1	1.338	1.373	1.390	1.483	1.575	1.593	1.627
AU4$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AU4$3	1.916	1.973	2.003	2.156	2.309	2.338	2.396
D5$1	1.081	1.111	1.126	1.206	1.285	1.300	1.330
D5$2	1.699	1.745	1.768	1.890	2.012	2.036	2.081
D5$3	1.971	2.032	2.064	2.228	2.391	2.423	2.484
AV5$1	1.138	1.168	1.184	1.266	1.348	1.364	1.394
AV5$2	1.710	1.756	1.780	1.903	2.027	2.050	2.097
AV5$3	1.934	1.992	2.022	2.179	2.335	2.365	2.423
P5$1	1.160	1.192	1.207	1.290	1.373	1.389	1.420
P5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
P5$3	2.057	2.126	2.162	2.346	2.530	2.565	2.634
AU5$1	1.414	1.450	1.469	1.566	1.663	1.681	1.718
AU5$2	1.782	1.832	1.857	1.990	2.122	2.147	2.197
AU5$3	2.034	2.101	2.135	2.313	2.491	2.525	2.592

Variances

AUTONOMY	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DISGUST	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AVOIDANC	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PRACTICA	1.000	1.000	1.000	1.000	1.000	1.000	1.000

DIAGRAM INFORMATION

Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

Diagram output
c:\users\w0001047\desktop\measure invariance results\latest\short version four factor.dgm

Beginning Time: 18:40:10
Ending Time: 18:40:11
Elapsed Time: 00:00:01

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Appendix K SPSS Disgust Factor Reliability (12-items) Results

Reliability

[DataSet1] C:\Users\Corin\Desktop\Mplus Files\Original.sav

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	1158	100.0
	Excluded[a]	0	.0
	Total	1158	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.954	12

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I feel disgusted at the idea of seeing my stool while collecting it (barrier2_d)	12.92	22.390	.758	.951
I think collecting a stool sample is dirty (barrier6_d)	12.93	22.255	.827	.949
It is unhygienic to store a stool sample in the fridge (barrier10_d)	12.83	21.497	.762	.952
I feel disgusted at the idea of getting close to my stool while collecting it (barrier14_d)	12.93	22.170	.840	.948
I don't want to accidentally touch my own stool (barrier18_d)	12.94	22.441	.833	.949
I would find it embarrassing to store a stool sample in my fridge (barrier22_d)	12.87	21.743	.804	.949
It is embarrassing to send a stool sample to another person for testing (barrier24_d)	13.00	23.532	.732	.952
I'm embarrassed to send a stool sample in the mail (barrier27_d)	12.98	23.256	.742	.951
It is unhygienic to store a stool sample in my house (barrier42_d)	12.93	22.420	.801	.949
Collecting a stool sample is unpleasant (barrier45_d)	12.86	21.565	.840	.948
I feel disgusted at the idea of collecting a stool sample (barrier48_d)	12.92	22.061	.868	.947
I would find it physically challenging to collect a stool sample (barriers49_d)	12.96	23.720	.570	.956

Appendix L SPSS Disgust Factor Reliability (9-items) Results

Reliability Statistics

Cronbach's Alpha	N of Items
.949	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I feel disgusted at the idea of seeing my stool while collecting it (barrier2_d)	9.46	13.253	.772	.945
I think collecting a stool sample is dirty (barrier6_d)	9.47	13.172	.837	.942
It is unhygienic to store a stool sample in the fridge (barrier10_d)	9.36	12.731	.732	.949
I feel disgusted at the idea of getting close to my stool while collecting it (barrier14_d)	9.47	13.089	.855	.941
I don't want to accidentally touch my own stool (barrier18_d)	9.48	13.325	.841	.942
I'm embarrassed to send a stool sample in the mail (barrier27_d)	9.52	14.100	.702	.948
It is unhygienic to store a stool sample in my house (barrier42_d)	9.47	13.402	.780	.944
Collecting a stool sample is unpleasant (barrier45_d)	9.40	12.644	.848	.941
I feel disgusted at the idea of collecting a stool sample (barrier48_d)	9.46	13.027	.878	.939

Appendix M SPSS Avoidance Factor Reliability Results

Reliability Statistics

Cronbach's Alpha	N of Items
.934	14

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I don't think there is a point in doing the screening test when it won't stop me from having cancer (barrier3_av)	14.58	19.501	.636	.931
It would be too late to do anything if they found something (barriers7_av)	14.58	19.242	.705	.929
I would prefer not to know if I have cancer (barrier11_av)	14.55	18.832	.768	.927
I think if the test found something, it would put too much strain on my family (barrier15_av)	14.57	19.058	.758	.927
I don't want to complete the home test kit because I am scared to find out if I have cancer (barrier19_av)	14.54	18.805	.759	.927
I'm not interested in doing the home test kit now, because I'll deal with cancer if and when I have it (barrier23_av)	14.60	19.449	.761	.928
Waiting for the results from the home test kit would be too stressful (barrier25_av)	14.58	19.336	.717	.928
I wouldn't bother with the home test kit because I don't have health insurance to cover treatment (barrier28_av)	14.61	20.001	.625	.931
Thinking about testing for bowel cancer makes me feel old (barrier30_av)	14.59	19.535	.694	.929
I'm worried about the impact it would have on my life if the test found something (barrier32_av)	14.56	18.741	.820	.925
I was not involved in the decision to have a home test kit sent to me (barrier34_av)	14.57	19.677	.553	.933
I don't like the idea of having a colonoscopy if I receive a positive result (barrier37_av)	14.49	18.385	.696	.930
I have more important issues to deal with than bowel cancer screening (barrier39_av)	14.55	19.279	.645	.931
I don't need to do the home test kit because I know there is nothing wrong with me (barrier43_av)	14.61	20.405	.490	.935

Appendix N SPSS Autonomy Factor (6-items) Reliability Results

Reliability Statistics

Cronbach's Alpha	N of Items
.880	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I do not want to give my information to the people involved in this program (barrier5_au)	5.64	3.594	.740	.851
I don't know what will happen to my information once I return the kit (barrier9_au)	5.59	3.394	.751	.848
I am concerned about the privacy of my health information (barrier13_au)	5.57	3.370	.735	.851
I won't do the home test kit because my health care is between me and my doctor (barrier17_au)	5.63	3.571	.724	.853
I don't like being told what to do (barrier21_au)	5.65	3.866	.634	.868
I should be in charge of my health and decide when to do the testing (barrier41_au)	5.63	3.849	.554	.880

Appendix O SPSS Autonomy (5-items) Reliability Results

Reliability Statistics

Cronbach's Alpha	N of Items
.851	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I do not want to give my information to the people involved in this program (barrier5_au)	4.47	2.218	.700	.811
I don't know what will happen to my information once I return the kit (barrier9_au)	4.42	2.118	.665	.821
I won't do the home test kit because my health care is between me and my doctor (barrier17_au)	4.46	2.136	.741	.799
I don't like being told what to do (barrier21_au)	4.48	2.369	.649	.825
I should be in charge of my health and decide when to do the testing (barrier41_au)	4.46	2.345	.570	.844

Appendix P SPSS Practicalities (14-items) Reliability Results

Reliability Statistics

Cronbach's Alpha	N of Items
.920	14

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I feel anxious about not knowing how to properly use the home test kit (barrier4_p)	14.68	15.613	.659	.914
The stool collection stick is too small (barrier8_p)	14.67	15.570	.590	.917
The process of stool collection involves too many steps (barriers12_p)	14.64	15.021	.713	.912
I can't understand exactly what I am supposed to do (barrier16_p)	14.74	16.371	.589	.917
I do not think that I could use the home test kit correctly (barrier20_p)	14.70	15.522	.697	.913
I am worried I might damage the home test kit if I tried to use it (barrier26_p)	14.77	16.664	.561	.918
It would be difficult for me to send the home test kit back in the mail (barrier29_p)	14.72	16.129	.538	.918
It is easy to lose parts of the home test kit, so it can't be completed properly (barrier31_p)	14.77	16.615	.579	.917
The tools in the kit are not designed well enough to make stool sample collection easy (barrier33_p)	14.68	15.511	.672	.914
I think the process of collecting a stool sample and sending it off is too complicated (barrier35_p)	14.68	15.181	.749	.911
The home test kit instructions are too hard to follow (barrier38_p)	14.75	16.159	.689	.914
Collecting a sample using a home test kit is inconvenient (barrier40_p)	14.64	15.126	.675	.914
I wouldn't want to look stupid for not using the home test kit properly (barrier44__p)	14.75	16.076	.651	.915
The tools in the kit are not designed well enough to cleanly collect a stool sample (barrier46_p)	14.67	15.102	.734	.911

Appendix Q SPSS Practicalities (12-items) Reliability Results

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	1158	100.0
	Excluded[a]	0	.0
	Total	1158	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.896	11

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I feel anxious about not knowing how to properly use the home test kit (barrier4_p)	11.16	8.334	.659	.884
The stool collection stick is too small (barrier8_p)	11.15	8.375	.558	.892
I can't understand exactly what I am supposed to do (barrier16_p)	11.22	8.884	.597	.888
I do not think that I could use the home test kit correctly (barrier20_p)	11.18	8.265	.699	.882
I am worried I might damage the home test kit if I tried to use it (barrier26_p)	11.25	9.113	.565	.890
It would be difficult for me to send the home test kit back in the mail (barrier29_p)	11.20	8.685	.548	.891
It is easy to lose parts of the home test kit, so it can't be completed properly (barrier31_p)	11.24	9.090	.576	.890
I think the process of collecting a stool sample and sending it off is too complicated (barrier35_p)	11.16	8.092	.721	.880
The home test kit instructions are too hard to follow (barrier38_p)	11.23	8.742	.692	.884
I wouldn't want to look stupid for not using the home test kit properly (barrier44__p)	11.23	8.668	.657	.885
The process of stool collection involves too many steps (barriers12_p)	11.12	7.970	.686	.883

Appendix R – US Campaign Poster