

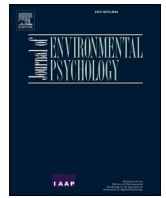
# Home clutter and mental well-being: exploring moderators and the mediating role of home beauty.

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# Home clutter and mental well-being: Exploring moderators and the mediating role of home beauty

Francis Quinn<sup>1</sup>

School of Law and Social Sciences, Robert Gordon University, Garthdee Road, Aberdeen, AB10 7QG, United Kingdom

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## ABSTRACT

Home clutter in non-hoarding populations correlates negatively with psychological well-being. However, mediators (i.e. mechanisms of action) and moderators (i.e. under what conditions or for whom do the effects hold) require further study. A cross-sectional survey of 501 adults from the general population during the COVID pandemic measured home clutter, perceived home beauty, appreciation of beauty, mental well-being, positive and negative affect, life satisfaction and potential moderators including demographics, location of survey completion, intention to declutter, time spent at home, and others. Using partial least-squares structural equation modelling, home clutter predicted more negative affect, life satisfaction and mental well-being. In a second model, these relationships were mediated by perceived home beauty. Relationships between clutter and outcomes were not significantly moderated. Findings point to potential for home conditions to affect psychological functioning, but moderation and mediation findings are exploratory and require replication using longitudinal and/or experimental designs.

## 1. Home clutter and mental well-being: exploring moderators and the mediating role of home beauty

Home may be where the heart is, but when there, it is where the mind is also. Scholars have considered home as having personal and social meanings (Sixsmith, 1986), a “situation for living” and self-identity (Casey, 2009), reflecting the occupant’s self, identity and life story. There may be an emotional bond or place attachment. Thus, at least in Western societies where most current research has been done, home is as much psychological as geographical. Occupants curate their home to regulate cognition or behaviour (e.g. reminders on a noticeboard, a book left out to encourage reading), emotion (e.g. background music, scented candles) or “social snacking” (Gardner et al., 2005: deriving social belonging from reminders of interactions with others, such as memorabilia from social occasions). Some aspects of home curation are about making a claim to an identity seen by self and/or others (Gosling et al., 2002). For example, psychological home refers to cultivating “a sense of belonging in which self-identity is tied to a particular place” (Sigmon et al., 2002, p. 33), through meaning-making about the self there, feelings associated with home, and behaviours to make their home an extension of self, such as curating decor and contents to reflect current and hoped-for selves; this home-as-extended-self predicts mental well-being (Rogers & Hart, 2021; Roster et al., 2016).

### 1.1. Possession clutter at home

People often curate their home with possessions, but possessions can accumulate until number and organisation cause problems. Hoarding is an extreme example, but this article focuses on non-hoarding populations. For example, middle-class Americans whose home tours included more clutter-related words showed less healthy cortisol patterns (a stress hormone) and greater depressed mood (Saxbe & Repetti, 2010). Anecdotal evidence of stress and negative affect in cluttered homes has led to popular interest in decluttering and/or organising possessions, including professional organising; among professional organisers’ clients, Belk et al. (2007) conceptualised clutter as symbolic of house as body, and clutter as dirt/soiling oneself (with clients reporting improvement in their lives after decluttering).

Researchers have examined relationships between home clutter and life satisfaction (indicating subjective well-being) in non-hoarding populations. For example, self-rated clutter predicted lower life satisfaction, and psychological home predicted greater life satisfaction (Roster et al., 2016). This effect of clutter holds for self-rated (but not objectively-rated) clutter (Rogers & Hart, 2021), poor Americans of colour (Prohaska et al., 2018), American women of colour (Crum & Ferrari, 2019a), college students (Crum & Ferrari, 2019b) and adults below and over 64 years (Swanson & Ferrari, 2022). Presence of clutter

E-mail address: [francis.quinn@rgu.ac.uk](mailto:francis.quinn@rgu.ac.uk).

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is distinct from “decluttering”, which is a personal project (with or without professional assistance) to look through possessions to retain/organise or dispose of them, with varying personal meanings and intrinsic and extrinsic motivations (Roster & Ferrari, 2023).

Why might clutter have negative effects on well-being? This has not been examined much. One possibility is that cluttered rooms make it difficult and frustrating to do things we want, such as finding an item or space to do a task, or clutter is perceived as embarrassing to have visitors see. These prosaic consequences must occur in at least very cluttered rooms, but whether these are strong enough to have an impact on well-being outcomes is currently unknown.

Another possibility is that clutter increases complexity of visual scenes, which vary in *perceptual fluency* (the ease with which a scene is processed) which is one type of processing fluency. Processing fluency affects judgments about a stimulus. Perceptual fluency is affected by properties such as figure-ground clarity (Alter & Oppenheimer, 2009), so cluttered rooms should be more demanding to visually process. Improved perceptual fluency for a target increases liking and leads to mild positive affect, because ease of processing is attributed to quality of the stimulus (Reber et al., 1998). The hedonic fluency model (not referring specifically to possession clutter) suggests that more fluently-processed stimuli cause positive affect because they denote places or stimuli that are evolutionarily advantageous leading to better functioning and thus survival (e.g. clearly understood scenes; Winkielman et al., 2003). However research on judgements toward a stimulus (e.g. liking, truthfulness, etc.) has suggested that the various kinds of processing fluency (of which perceptual fluency is one) actually lead to positive or negative judgements via “naïve theories” developed from outcomes the person has learned to associate with that target (Alter & Oppenheimer, 2009). It may be that some people come to associate cluttered rooms with difficulty finding items, anticipated embarrassment, etc. and thus the low perceptual fluency of a cluttered room may lead to more negative judgements, and that differences in learned associations help explain why some people judge the same space as more cluttered than others or are more or less negatively affected by it.

However, according to Rogers and Hart (2021), qualitative studies of how people make sense of their home clutter suggest that individuals may form and negotiate rules and standards (at individual or household level) for how possessions are managed, including storage, display and categorisation and that infringement of these standards results in negative outcomes such as mood. This variation could explain how the same space can vary in how cluttered it is perceived, or different household members vary in how concerned they are by that same space.

However, the reverse possibility cannot be ruled out by existing research: that low well-being causes increased clutter, possibly due to reduced motivation and self-regulation of behaviours such as tidying, due to well-being factors such as stress, negative affect, depression, and other mental health experiences. This is consistent with procrastination as a predictor of clutter accumulation (Ferrari & Roster, 2018). Reciprocal causation (Bandura, 1978) is also possible (low well being leads to increased clutter, which in turn makes well-being worse).

## 1.2. Perceived beauty of the home

As another potential explanation, perceived beauty of the home may be reduced by clutter, especially if cluttered rooms are considered ugly. Humans are sensitive to beauty; for example, appreciating art activates reward-related brain areas, leading to positive affect and subsequently mental well-being, while viewing figurative art may decrease stress (Mastrandea et al., 2019). In aesthetic studies, one contributor is that beautiful scenes are processed more fluently, leading to greater liking and positive affect (see above). Living spaces may benefit from aesthetic value; redecoration focused on aesthetics in care home common rooms significantly improved mental well-being (Weenig & Staats, 2010). However, perceived beauty is a function of not just form but the perceiver’s subjective experience; satisfaction of needs from

self-determination theory predicted perceived room beauty, including childhood homes (Weinstein et al., 2013), suggesting that learned associations are also involved. Clutter may therefore have effects mediated via home beauty (however beauty is perceived by that individual).

However, people may vary in the extent to which they appreciate or even perceive beauty in their surroundings; in positive psychology this has been described as a character strength (Martinez-Marti et al., 2016). The possible mediating effect being explored here is via how beautiful the participant perceives their home to be, rather than their general ability to appreciate beauty. However, those who are more likely to appreciate beauty may perceive the same home as more beautiful, or its perceived beauty may have more of an impact on outcomes such as affect. Therefore, appreciation of beauty was examined as a moderator between the clutter-beauty and each of the beauty-outcome relationships.

### 1.2.1. Well-being outcomes

The well-being outcomes used in previous research with home clutter deserve attention to be paid to them, as not all well-being constructs are the same. The Satisfaction with Life Scale (Diener et al., 1985) has been the most often-used measure, but is only one dimension of well-being. Diener’s (1984) tripartite model of subjective well-being comprises positive affect, negative affect and a cognitive dimension – that latter often operationalised as life satisfaction. It may be that clutter impacts affect differently; As such, it also makes sense to examine clutter’s relationships with positive and negative affect. Rogers and Hart (2021) used Seligman’s PERMA scale which included measures of positive emotion, such as joy, and found it correlated negatively with clutter. PERMA is a model (and accompanying scale) of positive mental well-being (Seligman, 2011). However as positive and negative affect have been shown to be separate and orthogonal (Watson & Tellegen, 1985), a measure of negative affect would be beneficial. Therefore this study comprises a wider set of well-being variables: life satisfaction, positive affect, negative affect and a general measure of mental well-being.

### 1.3. Potential moderators

Associations between clutter and well-being outcomes may have boundary conditions (i.e. they manifest or are stronger under some conditions rather than others). A limited set of moderators have been tested - for example age did not moderate between clutter and well-being (Camilleri et al., 2022). As clutter is an environmental condition, associations may differ depending on time spent at home, or it may be that those who intend to declutter are more strongly affected by clutter’s presence (perhaps as a reminder of their uncompleted ambition). In addition, any effects of home clutter on outcomes such as affect and well-being might be stronger when the person is in the home. For example, negative effects of home clutter might be stronger when a person is at home surrounded by clutter rather than when they are out. As an exploratory part of this study, a range of moderators were analysed. Table 1 below shows the moderators tested and the rationale for each.

### 1.4. The present study

The purpose here was firstly to conceptually replicate previous findings about clutter with a range of well-being outcomes, including positive and negative affect, and mental well-being; this was confirmatory and testing specific hypotheses. Secondly, a more exploratory part of the study examined the mediation effect of home beauty, as well as a range of potential moderators between these relationships to gain evidence of potential boundary conditions that may be explored in future research. This was achieved using partial least-squares structural equation modelling (PLS-SEM) which enables tests of a complex conceptual model where the main interest is prediction and the data are not

**Table 1**  
Exploratory moderators in the study and their rationale.

Moderator	Rationale
Location of completing questionnaire	Participants may be more affected by the presence of clutter on e.g. affect when completing the questionnaire at home vs. elsewhere
Time spent at home on weekdays	Participants who spend more time in their home (e.g. surrounded by clutter) may be more affected than those who spend less time there.
Time spent at home on weekends	As above, and people may spend different amounts of time at home on weekdays compared to weekends due to work.
Intention to declutter	Intenders may be more negatively affected by clutter, or may be less affected because they believe it is temporary due to their planned decluttering
Income	Home clutter may be more a concern of people who are wealthier
Age	Younger or older participants may be more affected by the presence of clutter, and average well-being tends to be higher among older cohorts
Gender	Effects may differ according to gender due to socialisation into gender roles where cultivating the home environment is more or less encouraged
Student status	Many psychological studies use student samples which has been criticised when generalising findings to non-student groups

required to be normally distributed; it has been increasingly used in psychological research (Willaby et al., 2015). Thus this paper mixes exploratory and confirmatory research.

Accordingly, the following hypotheses were examined: (1) Home clutter would show significant path coefficients with positive affect, negative affect, mental well-being and life satisfaction, (2) the relationship between clutter and the four well-being outcomes would be partially mediated by perceived home beauty, and (3) Relationships between clutter and outcomes will be moderated by demographics (age, gender, income, tenure type and student or not), location where questionnaire is completed (home or elsewhere), amount of time spent at home at weekends and weekdays, and intention to reduce clutter/tidy up the home.

## 2. Method

### 2.1. Design

Cross-sectional, correlational study, with data collected using an online survey.

### 2.2. Participants

The only inclusion criteria were age over 16 years and understanding English. The sample numbered 501 (three more provided no data except country of origin and were deleted before analysis), with 80 % women, 19 % men, and 1 % another gender identity, aged 16 to 92 (mean = 33, s. d. = 13), 33 % full-time students, and 28 % living with family of origin and 31 % currently self-isolating due to COVID. Renters comprised 42 %. Household income was evenly split between income bands, with 10 %–15 % of the sample within each band. Most lived in the UK (84 %), or elsewhere in Europe (5 %), Asia (3 %), North America (3 %) and fewer than 1 % in each of South America, Africa, the Middle East and Australasia. Participants were incentivized by a prize draw on completion of the study for one of three £40 Amazon.com gift vouchers.

### 2.3. Measures

All measures were in English with Cronbach's alpha exceeding .8 for all scales, indicating acceptable internal consistency. Also included in the survey (and included in the accompanying dataset) but not used for this article were Cohen et al.'s (1983) 10-item Perceived Stress Scale and

Sigmon et al.'s (2002) Psychological Home Scale.

*Home clutter* was self-rated by the 11-item short version of the Clutter Quality of Life Scale (Roster et al., 2016), on a 7-point Likert scale from strongly disagree to strongly agree, higher scores indicating greater clutter. This is a subset of the 18-item original scale more suitable for research (C. Roster, personal communication, April 28, 2020). Four items measuring liveability of space were used here as a subscale, such as "I can't find things when I need them because of clutter" while other items assess socioemotional impact of clutter, such as "I feel overwhelmed by the clutter in my home". Only the liveability subscale was analysed, as it was the amount of clutter rather than emotional impact that this measure was needed for. An additional, simpler measure was derived from Roster and Ferrari (2020): "How cluttered is your ..." followed by living room, your bedroom, kitchen, and bathroom, with responses on an 11-point scale from 0 ("Not at all cluttered") to 10 ("Extremely cluttered"). The two clutter measures correlated strongly (Spearman's  $\rho = .67, p < .001, N = 501$ ). Alternative measures of clutter are designed for use in hoarding and could lack validity with a non-hoarding population or create a ceiling effect.

*Affect* was measured by Diener et al.'s (2010) Scale of Positive and Negative Experience (SPANE), a 12-item scale assessing positive and negative feelings such as "positive", "negative", "contented", "sad" and "joyful". Its advantages over the PANAS are being sensitive to lower levels of arousal, more general items enabling a shorter list, and greater applicability to non-Western populations. It produces subscales for positive affect (SPANE-P), negative affect (SPANE-N) and affect balance which is negative affect subtracted from positive affect (SPANE-B).

*Mental Well-Being* was measured by the Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS), a 7-item version of the often-used scale, with good psychometric properties and focuses more on functioning than feeling (Test name needed to be capitalised). Participants rate statements on a five-point scale from "none of the time" to "all of the time", such as "I've been dealing with problems well". Total scores were transformed according to the user guide, so individual items were not used as indicators in PLS-SEM and the transformed overall score used instead.

*Life Satisfaction* was measured by the Satisfaction with Life Scale (SWLS; Diener et al., 1985). It has five statements, rated on a 7-point Likert scale from strongly disagree to strongly agree, such as "In most ways my life is close to ideal". Lower scores indicate greater satisfaction; for bivariate correlations the total score was reversed for all analyses (so higher scores = greater satisfaction) but raw items were used as indicators for PLS-SEM models (lower scores = greater satisfaction).

*Home Beauty* was measured by a single item "The interior of my home is beautiful", measured on a 5-point Likert scale from strongly disagree to strongly agree.

*Possible moderators:* Ability to appreciate beauty was assessed by the three beauty items of the Appreciation of Beauty and Excellence Scale (ABES; Martinez-Marti et al., 2016). As well as demographic measures, other measures were created specifically for this study as single items: location where questionnaire was completed ("Where are you completing this questionnaire?", measured as 1 [at home now] or 2 [somewhere else] [home or elsewhere], time spent at home on weekdays ("Currently, on weekdays, how much time do you spend at home?", measured as 1 [most of my time], 2 [some of my time] or 3 [little of my time], [much, some or little] and weekends ("Currently, on weekends, how much time do you spend at home?", same response options as above but combined for analysis as much/some or little as a binary measure), intention to reduce clutter/tidy up the home ("I intend to make a major decluttering of my home (or certain rooms) at some point", measured as 1 [not at all] to 5 [very much]).

### 2.4. Ethics

The study was approved by a departmental research ethics panel at the host university. Participants gave informed consent before

proceeding to the survey questions, including to public deposit of anonymous data.

## 2.5. Procedure

The survey was hosted on JISC Online Surveys and advertised at participant crowdsourcing websites ([www.callforparticipants.com](http://www.callforparticipants.com) and [www.surveycircle.com](http://www.surveycircle.com)), as well as the university's weekly email bulletin to all students and staff. After informed consent, participants completed the measures anonymously, in fixed order, and at debrief they were able to enter the optional prize draw by entering their email address, stored separately. Participation was open from May 2020 to November 2021 which was during the COVID-19 pandemic (see Discussion). Sample size was determined by the maximum that resources would allow, aiming for at least 200 to allow for covariance-based structural equation modelling. Data collection was terminated when no new participants came forward.

## 2.6. Analysis

Data analysis used SPSS 28 and 29, and SmartPLS 4 (Ringle et al., 2024). No variable had more than 1.0 % missing data; prior to analysis, missing data (all variables except for demographics) were imputed using EM imputation with 100 iterations in SPSS 28. All variables (excluding demographics and nominal data) were non-normally distributed according to the Shapiro-Wilk test and did not improve with standard transformations (Tabachnick & Fidell, 2007), so the data were unsuitable for covariance-based structural equation modelling (e.g. using LISREL or AMOS, but possible with PLS-SEM) and bivariate correlations were calculated using Spearman's rho as a non-parametric alternative to Pearson's *r*. Bootstrapping analyses in SmartPLS used 10,000 samples and estimates of predictive power using  $PLS_{predict}$  used the default setting of  $k = 10$  folds and 10 iterations.

## 2.7. Statistical power

For bivariate correlations, post-hoc power analysis using G\*Power 3.1.9.7 (Faul et al., 2007) gave observed power as 99 % to detect  $r_1 = .20$  (Exact test family—Correlation: Bivariate normal model,  $N = 501$ ,  $r_0 = .00$ ,  $\alpha = .05$ ). For PLS-SEM, using the inverse square root method, minimum sample size to detect path coefficients between .11 and .20 ( $\alpha = .01$ ) required  $N = 251$  (Hair et al., 2022).

## 2.8. Data availability

The dataset and materials are available at <https://doi.org/10.5255/UKDA-SN-857279>

## 3. Results

### 3.1. Descriptive statistics

Table 2 below shows mean and standard deviation of the main variables.

### 3.2. Hypothesis 1

The first hypothesis was that home clutter would significantly predict the well-being outcomes. Table 3 shows these intercorrelations, including both clutter measures (a table of intercorrelations between all variables is available as online supplement); all hypothesised correlations were in the expected direction and significantly greater than zero, with small effect sizes.

Clutter Quality of Life (liveability subscale) was used for the PLS-SEM model shown in Fig. 1 and was used in all PLS-SEM models – it is henceforth labelled simply as “Clutter”. The measurement models were

**Table 2**

Mean and standard deviation of the variables in the study.

	Mean	SD	Scale possible range (min to max)
Appreciation of Beauty (ABES subset)	14.43	3.86	3 to 21
Home Beauty	3.14	0.98	1 to 5
Clutter Quality of Life (Liveability subscale)	12.50	5.99	4 to 28
Clutter (Simple Rating in Living Room, Kitchen, Bedroom, Bathroom)	16.22	8.45	0 to 30
Negative Feelings (SPANE-N)	17.10	4.81	6 to 30
Positive Feelings (SPANE-P)	19.84	4.70	6 to 30
SWEMWBS (transformed for analysis)	20.92	3.78	7 to 35
Satisfaction with Life (total score reversed so high scores equal greater satisfaction)	17.42	7.36	5 to 35

Note.  $N = 501$ . SWEMWBS = Short Warwick-Edinburgh Mental Well-Being Scale. SPANE = Scale of Positive and Negative Experience.

**Table 3**

Intercorrelations (Spearman's rho) for home clutter and psychological well-being variables.

	SWEMWBS	Satisfaction with Life (reversed so high scores equal greater satisfaction)	Positive Affect (SPANE positive)	Negative Affect (SPANE negative)
Clutter Quality of Life (Liveability subscale)	-.27**	-.26**	-.22**	.25**
Clutter (Total of Simple Rating in Living Room, Kitchen, Bedroom, Bathroom)	-.28**	-.21**	-.24**	.26**

Note. \* $p < .05$  (two-tailed); \*\* $p < .01$  (two-tailed).  $N = 501$ . SWEMWBS = Short Warwick-Edinburgh Mental Well-Being Scale. SPANE = Scale of Positive and Negative Experience.

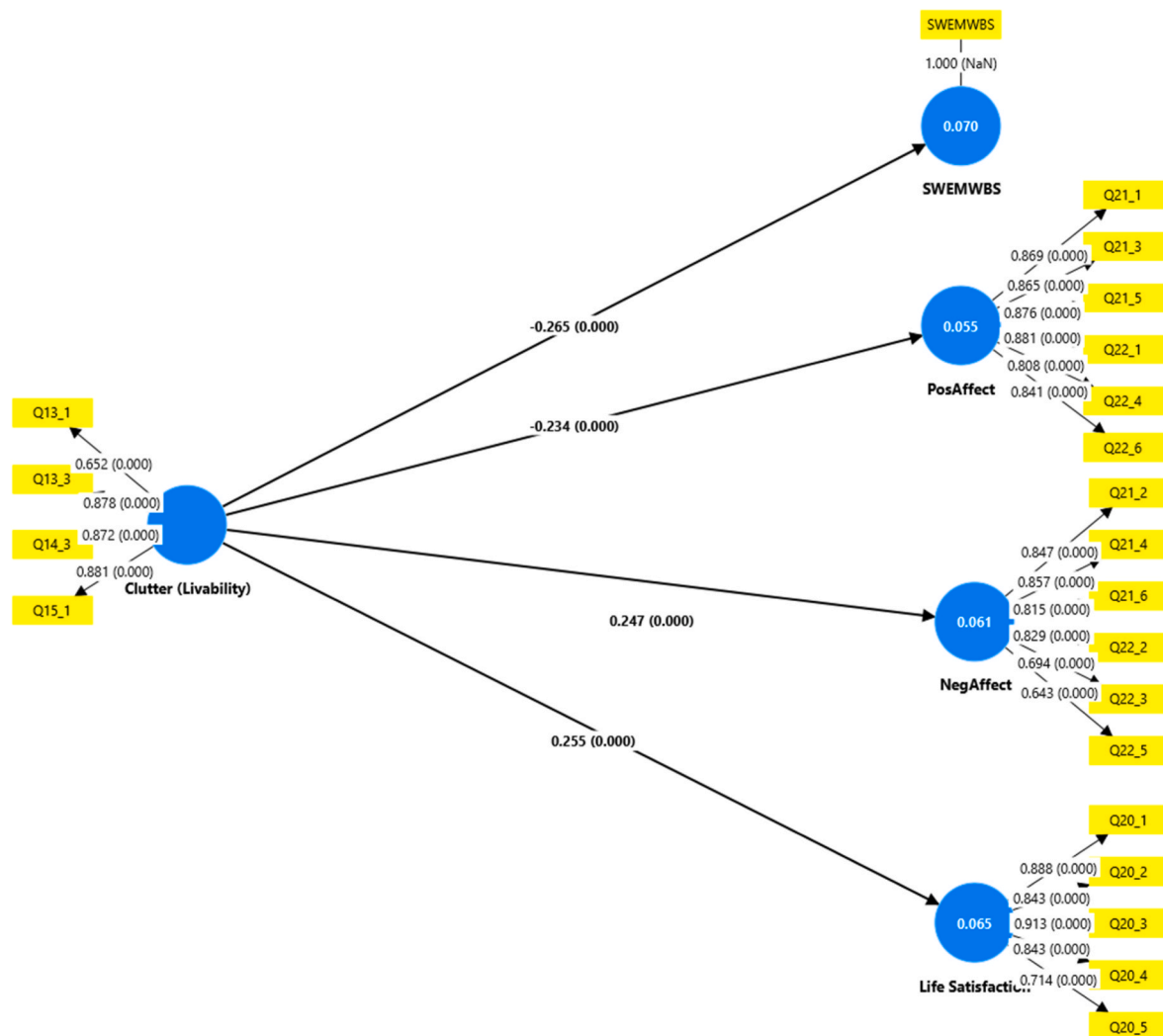
reflective and showed satisfactory reliability and validity (for full output tables see the supplementary file; for all indicators Cronbach's  $\alpha > .84$ , AVE  $> .6$ , HTMT 95 % CI  $< .85$  for all combinations of latent variables, with outer loadings  $> .7$  in most cases except being  $> .64$  for two indicators, and as there was only one endogenous variable, clutter, collinearity was thus not an issue, all suggesting no changes needed to the measurement model; Hair et al., 2022). The structural model showed all hypothesised relationships to be significant at  $p < .001$ . All effect sizes of path coefficients were small ( $f^2 > .02 < .15$ ). Variance explained ( $R^2$ ) was .07 (mental well-being), .06 (positive affect), .06 (negative affect) and .07 (life satisfaction); all  $R^2$  were at  $p < .01$ . Clutter predicted greater negative affect and reduced mental well-being, life satisfaction and positive affect at modest magnitude. For full output tables, see the supplementary file.

### 3.3. Hypothesis 2: beauty as mediator

Table 4 below shows intercorrelations between home beauty and study variables.

To examine the potential mediation effect of home beauty, the path model shown in Fig. 2 was run in SmartPLS. In this model, home beauty was positioned as mediator between clutter and all outcome variables, while appreciation of beauty was set up as moderator between clutter and home beauty, and also between home beauty and outcome variables. Full output for the PLS-SEM analysis can be seen in the online supplement. The reflective measurement model showed all outer loadings were statistically significant ( $p < .001$ ) and above .7 except for three (the lowest being .62); these were retained as other measurement model quality criteria were satisfactory. There was satisfactory





**Fig. 1.** Path model for Hypothesis 1 (values in parentheses are p-values; values in circles are variance explained for that construct as  $R^2$ ). Note that lower scores on the life satisfaction measure indicate greater satisfaction as indicator variables were used rather than a reversed total score.

**Table 4**

Intercorrelations (Spearman's rho) for home beauty with home clutter and psychological well-being variables.

	Home beauty
Clutter Quality of Life (Liveability subscale)	-.37**
Clutter (Total of Simple Rating in Living Room, Kitchen, Bedroom, Bathroom)	-.45**
Appreciation of Beauty (ABES subset)	.25**
Mental well-being (SWEMWBS)	.36**
Life Satisfaction (reversed)	.43**
Positive affect	.40**
Negative affect	-.24**

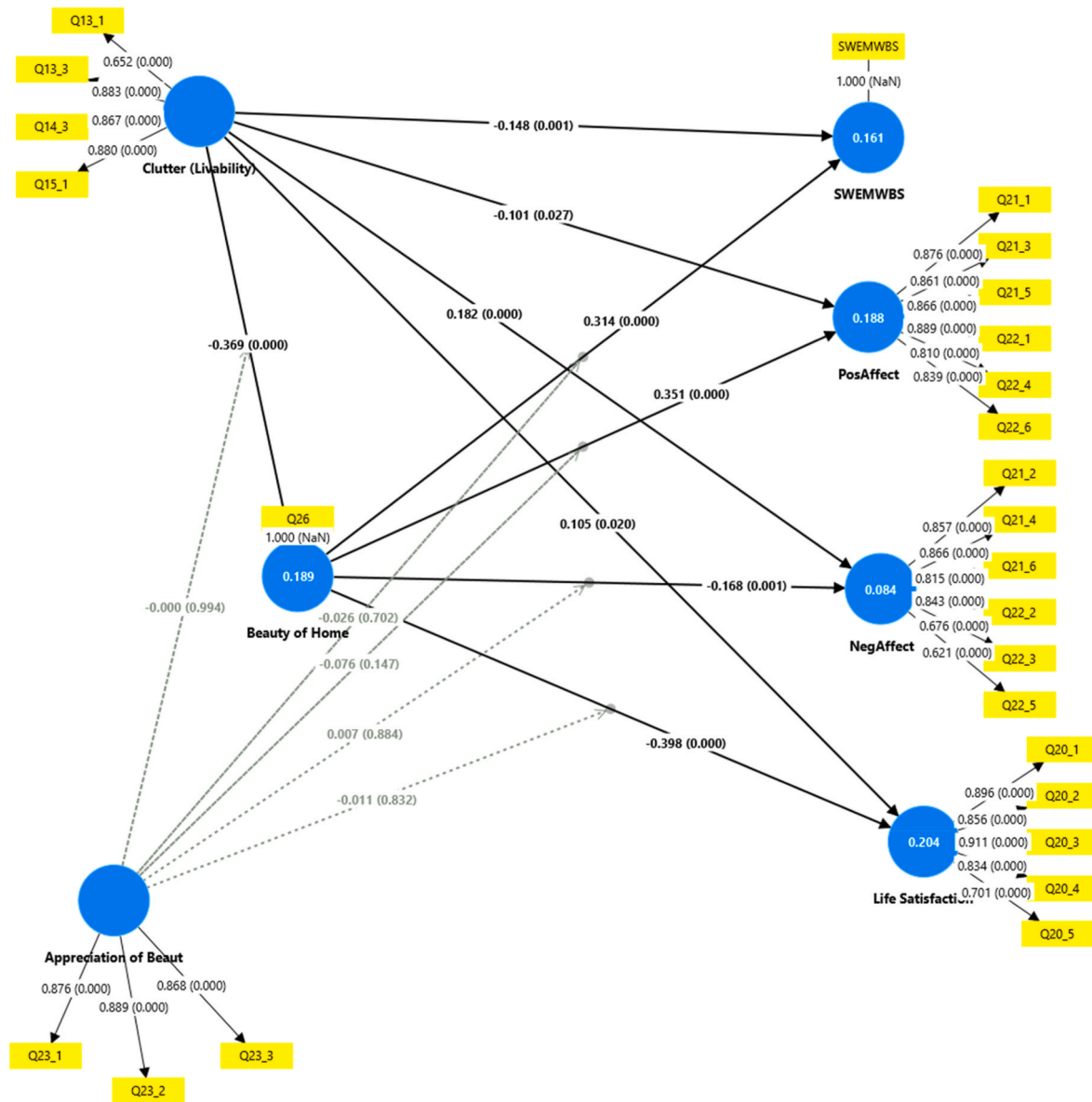
Note. \*\* $p < .01$  (two-tailed).  $N = 501$ . SWEMWBS = Short Warwick-Edinburgh Mental Well-Being Scale. ABES = Appreciation of Beauty and Excellence Scale.

reliability and validity (for all indicators Cronbach's alpha  $> .84$ , AVE  $> .6$ , HTMT upper CI  $< .85$ , suggesting no changes needed to the measurement models; Hair et al., 2022). Variance explained in each predicted variable was  $R^2 = .19$  (home beauty),  $.20$  (life satisfaction),  $.08$  (negative affect),  $.19$  (positive affect), and  $.16$  (mental well-being); all these were statistically significant ( $p < .001$ ). The structural model showed that home beauty acted as a partial mediator between clutter and the outcome variables, with significant path coefficients predicting

home beauty, and significant prediction of all outcomes by home beauty; all indirect effects were significant at  $p < .01$ . The direct pathways between clutter and the outcome variables remained significant but at smaller coefficients than in the previous model, suggesting partial mediation. Appreciation of beauty did not moderate the relationships between clutter and itself and itself and mental well-being, with the interaction not significantly different from zero in either relationship. Most effect sizes of path coefficients were small ( $f^2 > .02 < .15$ ). For full output tables, see the supplementary file.

### 3.4. Hypothesis 3: moderations

The third hypothesis was that relationships between clutter and the four outcomes (mental well-being, positive affect, negative affect and life satisfaction) would be moderated by demographics (age, gender, income, and student or not), location where questionnaire is completed (home or elsewhere), amount of time spent at home at weekends and weekdays, and intention to reduce clutter. These moderators (making a total of 32 potential moderation effects) were tested in a mega-model in SmartPLS using the Hypothesis 2 model as a base (excluding Appreciation of Beauty); moderated mediation via Home Beauty was not examined in this analysis. The measurement model was satisfactory, with outer loadings all significant ( $p < .001$ ) and above  $.7$  except for three indicators all above  $.6$ , all of which were retained. Cronbach's



**Fig. 2.** Path model for Hypothesis 2. Figures in parentheses are p-values and values within outcome variable circles are  $R^2$ . All coefficients are significant except for the moderation effects. Note that lower scores on the life satisfaction measure indicate greater satisfaction. SWEMWBS = Short Warwick-Edinburgh Mental Well-being Scale.

alpha was greater than .84 for all latent variables with more than one indicator, convergent validity was satisfactory (AVE > .6 for all latent variables) and discriminant validity was satisfactory (CI upper bound of HTMT < .85 for all pairs of latent variables). The structural model showed that excluding proposed moderators, clutter predicted home beauty but not the four well-being outcomes, while home beauty significantly predicted all four outcomes. Most moderators did not predict the outcome variables. Significant variance was explained in each endogenous (i.e. predicted) construct ( $p < .001$ ) with  $R^2 = .14$  (home beauty), .27 (life satisfaction), .15 (negative affect), .23 (positive affect) and .22 (mental well-being). The predictive power of this model was weak (PLS<sub>predict</sub>,  $k = 10$ , repetitions = 10) as RMSE was less than the linear model for only one indicator. For full output tables, see the online supplement.

The result of the moderations when tested in the structural model was that the interaction term (which needs to be significant for a moderation to be supported) was significant for only one: time at home on weekends moderating the relationship between clutter and positive

affect (path coefficient of the interaction term = .11,  $p = .022$ ). The effect size ( $f^2$ ) was .01 suggesting a minimal effect (with .2 being seen as a small effect according to Hair et al., 2022). In this structural model, clutter did not predict positive affect directly and this moderating variable was coded as 1 = most time is spent at home, 2 = some and 3 = little. As many p-values were computed and the effect size is below what would be considered small, this does not appear to be likely to be a genuinely significant moderation. As a result, the final model was that as tested in Hypothesis 2 and no additional moderation effects were added.

#### 4. Discussion

The main findings were that clutter significantly predicted more undesirable affect, mental well-being and life satisfaction. A novel finding here was that these relationships were partially mediated by perceived home beauty. However, relationships between clutter and well-being variables were small effects ( $f^2$  of path coefficients being less than .15) while previous studies have found medium effects (e.g. Rogers

& Hart, 2021; Roster et al., 2016). Sampling differences may account for this. For example, a considerable proportion of participants interested in clutter as a topic (Rogers & Hart) or experiencing problems with clutter (Roster et al.) were recruited, while the present study employed a more general sampling approach. The present study's findings are more in line with the effect size of clutter on satisfaction with life found in Prohaska et al. (2018). While the correlations are small according to Cohen (1988), phenomena in social science are often determined by many factors, all of which have a small influence (Götz et al., 2022). Also, "small" effects may accumulate over time as situations where they occur are repeated within individuals' lives, or across many individuals, producing a major outcome (Funder & Ozer, 2019). The effects here could accumulate via repetition as the person is exposed repeatedly and for many hours to their home environment, although habituation may result in the clutter having less effect over time, or counteracting responses of decluttering or tidying (Anvari et al., 2023). Clutter's effects may come in waves or episodes, with negative effects accumulating through repeated exposure during periods when clutter continues to build up, followed by removal of the effect after habituation and/or decluttering, and repetition of the cycle as clutter builds up again later. Longitudinal research (e.g. ecological momentary assessment) could probe these accumulative/contradictory mechanisms. Overall, the results contribute to evidence suggesting modest negative relationships between home clutter and well-being in samples that are white, Hispanic, or black, albeit of probably modest magnitude. What is unclear is that these are causal relationships. It will take a longitudinal or (preferably) experimental study to shine more light on causality. These data are consistent with the possibility that clutter has a causal effect on outcomes but cannot rule out the possibility that lower well-being increases the amount of clutter that accumulates.

#### 4.1. Home beauty as mediator

Tested for the first time in relation to clutter, home beauty partially mediated relationships between clutter and well-being. This suggests that clutter in a home may predict how beautiful it is perceived as, and that beauty predicts well-being outcomes. As outlined in the introduction, one account of what affects perception of beauty involves perceptual fluency, where a visually complex scene is likely to be processed less easily and therefore liked less. Clutter may well contribute to such a more complex scene, altering affect via processing fluency and contributing over repeated exposures to mood, reduced well-being and life satisfaction. However, beauty may also be about items in, design of, structure of, or layout of the home which have come to be appreciated aesthetically, similar to how art (and other aesthetic experiences) may be appreciated via bottom-up perceptual processes, implicit-memory effects such as familiarity and prototypicality, as well as top-down processes of categorisation and expertise in artistic styles as well as interpretations in relation to self and one's own episodic memories (Leder et al., 2004). There is thus considerable potential for non-clutter variables to affect home beauty (e.g. architectural style, quality of maintenance, daylight levels, etc.) and thus have a positive influence on occupant well-being.

Such beauty may also lead to positive affect which affects other aspects of mental well-being. However the mediating effect of home beauty here should be regarded as tentative for two reasons. Firstly, as the psychological role of beauty in the home and in relationship to clutter and psychological home has been little studied, these findings require confirmation and further investigation. Secondly, the measure of home beauty was a single item; in psychometrics multi-item scales are preferred as they tap multiple facets of the concept, allow calculation of internal consistency, and reduce measurement error from varying interpretations of item wording. That a single item was used to measure home beauty suggests a promising effect but there is a need to apply multi-item measures of home beauty for future research to confirm and elaborate on the effects reported here.

#### 4.2. Moderation effects

Turning to Hypothesis 3, under what circumstances, or for what kinds of people, do these effects hold? Prior studies have examined few such boundary conditions. Many moderation analyses were run in the present study, and only one was significant in the mega-model tested in Hypothesis 3; this means that there is a higher risk of Type 1 error (i.e. that a statistically significant finding may be spurious) so with this exploratory part of the study, findings are tentative.

This raises the issue of whether there was sufficient statistical power (even with 501 participants) to detect moderation effects. A further issue is the single-item nature of the moderating variables (see above), while multi-item measures may have greater validity (e.g. tapping numerous facets of a concept) and reliability (internal consistency can be calculated) and reduced measurement error. However, the moderating concepts tested were simple (e.g. being at home or not when questionnaire was completed) and may not have been substantially improved by multi-item measures, which may have appeared redundant to participants.

If lack of statistical power or measurement error is not the key issue with the lack of moderating effects, perhaps this points to universality of the effects of clutter on well-being (or vice versa), albeit an effect of modest size, unchanged no matter where the person is or what sort of person they are, perhaps with the effects requiring a certain minimum amount of time in the home. If so, this could suggest that interventions aimed at decreasing clutter could be worth testing as a potential way to a modest effect on well-being, possibly as part of a wider intervention package.

#### 4.3. Explaining Clutter's effects

Assuming for a moment that the effects of clutter were causal, why would they be mediated by perceived home beauty but unmoderated by any variable tested, or moderated so weakly they do not appear as significant? As a theoretical perspective to inform future research, clutter's effects (at least on affect) may occur because of the complexity of the visual scene in a cluttered room (see introduction).

However, a problem for a hedonic fluency account of the relationship between clutter and affect is that in the present study, greater clutter was associated with negative affect, whereas Winkielman et al. focus on positive affect following greater ease of processing. However, it is conceivable that an environment where owned or desired objects are difficult to immediately identify could be disadvantageous for an individual's functioning (and thus for survival in ancestral environments) or be associated with past negative outcomes by some participants in a "naïve theory", leading to negative affect. Measures of how clutter-free a space is (rather than how cluttered it is) may produce the theorised positive affect. More negative affect may feed into more negative mental well-being and life satisfaction.

Another theoretical direction for future work may be to consider that different clutters reflect different processes of keeping and discarding by which they are created and conceptualised by the occupant, in the context of society; for example, as associated with the past and memory, or with the present and future (Miller, 2018), in different rooms (e.g. a garage vs. a living room or bedroom), or as "behavioural residue" (Gosling et al., 2002) of activities which may even be beneficial to well-being (e.g. items strewn about in pursuing a passion project such as model railway construction, which involves personal growth in learning new skills and forming new relationships). Rather than simply amount of clutter or how difficult it makes finding items, the meaning of different clutters within a home to its occupants may shed more light on clutter's relationship to well-being.

Related to this, Rogers and Hart (2021) argued that negative outcomes related to home clutter are explained by the extent to which the level of home clutter infringes self-set rules or self-standards within each individual about how their spaces should be arranged; when level of clutter exceeds a person's tolerance level and standards for tidiness and



usability, negative affect could be expected; this explained why subjective clutter predicted outcome more negatively than a more objective measure of clutter (and explains why some people are more bothered than others by clutter, and a room one person sees as cluttered may be average to another). Environmental explanations such as processing fluency should better explain negative outcomes when the person is in the environment in question (e.g. at home in a cluttered room) more than when they are in a different environment; infringed self-standards of tidiness, order and usability may have negative effects that remain regardless of the present environment the person is in (e.g. when out of the home).

#### 4.4. Evaluation and future directions

Strengths of this study include adequate statistical power, and the use of valid and reliable psychometric measures for most variables, and the exploratory addition of home beauty as a variable in the model. However, firstly the cross-sectional correlational design limits the extent to which these relationships can be seen as causal; it may be that other unmeasured variables cause both clutter and well-being outcomes (e.g. work stress has been shown to contribute to workplace clutter via decisional procrastination; Roster & Ferrari, 2020) or that low well-being is causal; both pathways could lead to reduced motivation or self-regulation capability for behaviours that manage clutter. The literature on clutter and well-being outcomes has exhausted the possibilities provided by cross-sectional correlational surveys. At this point, longitudinal data would provide clearer insights into not just correlations of clutter and outcomes, but also the process of clutter either accumulating or reducing; if clutter has a causal relationship to well-being outcomes then those outcomes should rise or fall with the clutter. Ecological momentary assessment or N-of-1 studies, capturing clutter of location several times a day (e.g. in cluttered home or out) or level of home clutter (e.g. measured weekly) and mood could be valuable in elucidating any such relationships.

Secondly, self-reported outcomes may suffer from expectancy effects (e.g. participants may expect a cluttered home is associated with negative feelings) or may respond in socially desirable ways even when anonymous (e.g. under-reporting how cluttered the home is). In addition, a space that is “very cluttered” to one person may seem about average to another, making self-ratings of home clutter suboptimal as a measure. While the use of the liveability items from Roster et al.’s (2016) Clutter Quality of Life Scale in these analyses may ameliorate this to some degree as they tend to focus on the perceived impact of clutter (e.g. difficulty finding items) rather than a rating of clutter per se (like the simple ratings of clutter collected in this study but not used in the PLS-SEM analyses), a more objective measure may be of value. This might be especially the case if it is ease of processing of a scene that explains the negative effects of clutter on well-being outcomes such as mood, and was recommended by Roster et al. (2016). To provide a more objective measure Rogers and Hart (2021) used Frost et al.’s (2008) Clutter Image Rating Scale (originally intended for use with hoarding and showing images of three rooms commonly affected by hoarding) with study participants selecting an image provided that best matched the clutter in their home; these scores showed the same pattern of correlations with well-being outcomes as subjectively-measured clutter ratings but with weaker (albeit still statistically significant) effect sizes. Rogers and Hart argued that rather than indicating self-reported measures of clutter are suboptimal, they provide different information as the effects operate via the person’s own criteria about tidiness and what is and is not cluttered to that person, infringing or not on rules imposed by the person (or household), and that it is this which matters in affecting outcomes, implying a useful role for self-rated clutter which objective measures may miss, so a subjective measure should still be included. To move forward on whether wellbeing effects are a response to an immediate environment or result from one’s evaluation of one’s home in terms of personal standards, it would be useful to evaluate clutter not

just objectively and in terms of liveability, but also measure to what extent the person’s home is more cluttered than one would like. Personality may also be one of the criteria that may affect how a person judges the clutter in a space and would be worthwhile to include as a moderator in future research.

A further issue is the need to confirm the findings with home beauty as mediator; future work needs to use a multi-item measure of home beauty capable of showing strong reliability and validity. Finally, however, perhaps independent of the effects of clutter in a space is the effect on a person of decluttering; the act of decluttering may have effects greater than a mere removal of clutter and qualitative data (e.g. with interviews repeated during a process of decluttering) would be of value in examining the lived experience of working through one’s own clutter and how it interacts with the values and meanings formed by an individual or household.

##### 4.4.1. Effect of the COVID pandemic

As the data were collected during the COVID pandemic, this may have affected the results as some participants (at least in the UK) would have spent more time at home even when not self-isolating, and well-being may have been affected by external events (indeed, population mental well-being in the UK was affected during the pandemic and also rose and fell in line with lockdowns and COVID case rates; Office for Health Improvement and Disparities, 2022). During the pandemic, home may have become a more important place in participants’ lives, potentially affecting relationships between variables. Nevertheless, consistencies between the present findings and the pre-COVID literature suggest that COVID experiences may not have fundamentally altered the relationships between study variables.

#### 4.5. Conclusion

In sum, although caution is needed about causality, these findings are consistent with the possibility that home environment could affect well-being for the mind as well as body, and possibly via the effect of perceived beauty of the home. Clutter modestly predicted greater negative affect and less positive affect, lower mental well-being, and lower life satisfaction (in broad agreement with previous findings), and the addition of this research is that these were partially mediated by home beauty and not clearly moderated by any variable tested here. These exploratory findings require replication and future research should address the relationship between home clutter and mental well-being using longitudinal (qualitative or quantitative) or experimental designs to more clearly examine causality.

#### Author Note

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#### Appendix A. Supplementary results

Supplementary results to this article can be found online at <https://doi.org/10.1016/j.jenvp.2025.102672>.

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## Supplementary File for “Home clutter and mental well-being: Exploring moderators and the mediating role of home beauty”

Correlations																
		Clutter Quality of Life (Liveability)	Clutter Quality of Life (Total)	Clutter Quality of Life (Socioemotional Impact of Clutter)	Clutter (Simple Rating in Living Room, Kitchen, Bedroom, Bathroom)	Psychological Home (Total)	Perceived Stress Scale total (PSS-10)	SWEMWBS (transformed for analysis)	Satisfaction with Life (reversed so high scores equal greater satisfaction)	Positive Feelings (SPANE positive)	Negative Feelings (SPANE negative)	Affect Balance (SPANE-B, higher = towards positive)	The interior of my home is beautiful.	I intend to make a major decluttering of my home (or certain rooms) at some point	Most of any clutter in my home is made by others, rather than me	
Spearman's rho	Clutter Quality of Life (Liveability)	Correlation Coefficient	--													
		Sig. (2-tailed)	.													
	N	501														
Clutter Quality of Life (Total)		Correlation Coefficient	.948**	--												
		Sig. (2-tailed)	<.001													
	N	501	501													
Clutter Quality of Life (Socioemotional Impact of Clutter)		Correlation Coefficient	.865**	.977**	--											
		Sig. (2-tailed)	<.001	<.001												
	N	501	501	501												
Clutter (Simple Rating in Living Room, Kitchen, Bedroom, Bathroom)		Correlation Coefficient	.672**	.700**	.683**	--										
		Sig. (2-tailed)	<.001	<.001	<.001											
	N	501	501	501	501											
Psychological Home (Total)		Correlation Coefficient	-.133**	-.138**	-.133**	-.138**	--									
		Sig. (2-tailed)	.003	.002	.003	.002										
	N	501	501	501	501	501										
Perceived Stress Scale total (PSS-10)		Correlation Coefficient	.305**	.337**	.344**	.267**	-.131**	--								
		Sig. (2-tailed)	<.001	<.001	<.001	<.001	.003									
	N	501	501	501	501	501	501									
SWEMWBS (transformed for analysis)		Correlation Coefficient	-.274**	-.307**	-.314**	-.283**	.296**	-.715**	--							
		Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001								
	N	501	501	501	501	501	501	501								
Satisfaction with Life (reversed so high scores equal greater satisfaction)		Correlation Coefficient	-.257**	-.275**	-.274**	-.208**	.273**	-.494**	.568**	--						
		Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001							
	N	501	501	501	501	501	501	501	501							
Positive Feelings (SPANE positive)		Correlation Coefficient	-.222**	-.261**	-.278**	-.238**	.290**	-.649**	.781**	.636**	--					
		Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001						
	N	501	501	501	501	501	501	501	501	501						
Negative Feelings (SPANE negative)		Correlation Coefficient	.253**	.287**	.297**	.255**	-.104*	.771**	-.669**	-.522**	-.633**	--				
		Sig. (2-tailed)	<.001	<.001	<.001	<.001	.020	<.001	<.001	<.001	<.001					
	N	501	501	501	501	501	501	501	501	501	501					
Affect Balance (SPANE-B, higher = towards positive)		Correlation Coefficient	-.259**	-.299**	-.313**	-.267**	.215**	-.784**	.805**	.630**	.895**	-.903**	--			
		Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001				
	N	501	501	501	501	501	501	501	501	501	501	501				
The interior of my home is beautiful.		Correlation Coefficient	-.369**	-.409**	-.415**	-.451**	.468**	-.228**	.364**	.430**	.403**	-.241**	.352**	--		
		Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001			
	N	501	501	501	501	501	501	501	501	501	501	501	501			
I intend to make a major decluttering of my home (or certain rooms) at some point		Correlation Coefficient	.456**	.492**	.490**	.356**	.094*	.180**	-.099*	-.027	-.077	.153**	-.130**	-.074	--	
		Sig. (2-tailed)	<.001	<.001	<.001	<.001	.035	<.001	.027	.548	.085	<.001	.003	.100		
	N	501	501	501	501	501	501	501	501	501	501	501	501	501		
Most of any clutter in my home is made by others, rather than me		Correlation Coefficient	-.007	.048	.083	-.021	-.011	.006	.001	.003	-.006	.072	-.042	-.047	.062	--
		Sig. (2-tailed)	.871	.286	.064	.644	.806	.890	.974	.949	.900	.109	.348	.291	.164	
	N	501	501	501	501	501	501	501	501	501	501	501	501	501	501	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

The remainder of this file contains statistical output for the PLS-SEM analyses for Hypotheses 1 to 3.

### Hypothesis 1 model

#### *Measurement Model:*

Outer loadings (note that  $p < .001$  in all rows)

	Original sample (O)	Sample mean (M)	5.0%	95.0%
<b>Q13_1 &lt;- Clutter (Livability)</b>	0.652	0.650	0.567	0.723
<b>Q13_3 &lt;- Clutter (Livability)</b>	0.878	0.877	0.847	0.902
<b>Q14_3 &lt;- Clutter (Livability)</b>	0.872	0.871	0.842	0.896
<b>Q15_1 &lt;- Clutter (Livability)</b>	0.881	0.881	0.858	0.901
<b>Q20_1 &lt;- Life Satisfaction</b>	0.888	0.887	0.862	0.908
<b>Q20_2 &lt;- Life Satisfaction</b>	0.843	0.842	0.803	0.876
<b>Q20_3 &lt;- Life Satisfaction</b>	0.913	0.912	0.895	0.927
<b>Q20_4 &lt;- Life Satisfaction</b>	0.843	0.842	0.807	0.872
<b>Q20_5 &lt;- Life Satisfaction</b>	0.714	0.712	0.648	0.768
<b>Q21_1 &lt;- PosAffect</b>	0.869	0.868	0.838	0.893
<b>Q21_2 &lt;- NegAffect</b>	0.847	0.845	0.811	0.874
<b>Q21_3 &lt;- PosAffect</b>	0.865	0.864	0.835	0.890
<b>Q21_4 &lt;- NegAffect</b>	0.857	0.855	0.818	0.885
<b>Q21_5 &lt;- PosAffect</b>	0.876	0.876	0.854	0.896
<b>Q21_6 &lt;- NegAffect</b>	0.815	0.814	0.777	0.845
<b>Q22_1 &lt;- PosAffect</b>	0.881	0.880	0.852	0.903
<b>Q22_2 &lt;- NegAffect</b>	0.829	0.828	0.797	0.856
<b>Q22_3 &lt;- NegAffect</b>	0.694	0.694	0.639	0.743
<b>Q22_4 &lt;- PosAffect</b>	0.808	0.808	0.770	0.841
<b>Q22_5 &lt;- NegAffect</b>	0.643	0.642	0.574	0.703
<b>Q22_6 &lt;- PosAffect</b>	0.841	0.840	0.807	0.868
<b>SWEMWBS &lt;- SWEMWBS</b>	1.000	1.000	1.000	1.000

Internal Consistency as Cronbach's alpha (note that  $p < .001$  in all rows)

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>5.0%</b>	<b>95.0%</b>
<b>Clutter (Livability)</b>	0.844	0.844	0.823	0.862
<b>Life Satisfaction</b>	0.896	0.896	0.883	0.908
<b>NegAffect</b>	0.872	0.872	0.856	0.887
<b>PosAffect</b>	0.928	0.928	0.918	0.936
<b>SWEMWBS</b>	1.000	1.000	1.000	1.000

Convergent validity (average variance extracted; note that  $p < .001$  in all rows)

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>5.0%</b>	<b>95.0%</b>
<b>Clutter (Livability)</b>	0.683	0.682	0.654	0.709
<b>Life Satisfaction</b>	0.711	0.709	0.684	0.734
<b>NegAffect</b>	0.616	0.615	0.587	0.643
<b>PosAffect</b>	0.734	0.733	0.707	0.758
<b>SWEMWBS</b>	1.000	1.000	1.000	1.000

Discriminant validity (HTMT)

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>5.0%</b>	<b>95.0%</b>
<b>Life Satisfaction &lt;-&gt; Clutter (Livability)</b>	0.278	0.282	0.199	0.366
<b>NegAffect &lt;-&gt; Clutter (Livability)</b>	0.283	0.284	0.198	0.367
<b>NegAffect &lt;-&gt; Life Satisfaction</b>	0.597	0.597	0.535	0.657
<b>PosAffect &lt;-&gt; Clutter (Livability)</b>	0.251	0.252	0.169	0.334
<b>PosAffect &lt;-&gt; Life Satisfaction</b>	0.699	0.699	0.638	0.755
<b>PosAffect &lt;-&gt; NegAffect</b>	0.710	0.710	0.657	0.760
<b>SWEMWBS &lt;-&gt; Clutter (Livability)</b>	0.282	0.283	0.203	0.361



<b>SWEMWBS &lt;-&gt; Life Satisfaction</b>	0.570	0.570	0.497	0.639
<b>SWEMWBS &lt;-&gt; NegAffect</b>	0.695	0.695	0.652	0.737
<b>SWEMWBS &lt;-&gt; PosAffect</b>	0.792	0.792	0.755	0.826

### *Structural Model*

Collinearity: As there was only one exogenous variable (i.e. clutter) collinearity was not an issue as it only arises with two or more predictor variables (Hair et al., 2022)

Significance of path coefficients (note that lower scores on the Life Satisfaction measure equal greater life satisfaction, so a positive path coefficient implies greater clutter causes lower life satisfaction):

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>Standard deviation (STDEV)</b>	<b>T statistics ( O/STDEV )</b>	<b>P values</b>
<b>Clutter (Livability) -&gt; Life Satisfaction</b>	0.255	0.261	0.044	5.779	0.000
<b>Clutter (Livability) -&gt; NegAffect</b>	0.247	0.254	0.042	5.844	0.000
<b>Clutter (Livability) -&gt; PosAffect</b>	-0.234	-0.240	0.042	5.496	0.000
<b>Clutter (Livability) -&gt; SWEMWBS</b>	-0.265	-0.268	0.043	6.185	0.000

### Explanatory power

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>Standard deviation (STDEV)</b>	<b>T statistics ( O/STDEV )</b>	<b>P values</b>
<b>Life Satisfaction</b>	0.065	0.070	0.023	2.807	0.003

<b>NegAffect</b>	0.061	0.067	0.022	2.822	0.002
<b>PosAffect</b>	0.055	0.059	0.021	2.653	0.004
<b>SWEMWBS</b>	0.070	0.074	0.023	3.060	0.001

Predictive power:

	<b>Q<sup>2</sup>predict</b>	<b>PLS-SEM_RMSE</b>	<b>PLS-SEM_MAE</b>	<b>LM_RMSE</b>	<b>LM_MAE</b>	<b>IA_RMSE</b>	<b>IA_MAE</b>
<b>Q20_1</b>	0.041	1.755	1.532	1.762	1.540	1.791	1.574
<b>Q20_2</b>	0.035	1.643	1.396	1.637	1.384	1.672	1.436
<b>Q20_3</b>	0.062	1.670	1.405	1.672	1.401	1.724	1.469
<b>Q20_4</b>	0.039	1.708	1.426	1.710	1.422	1.742	1.482
<b>Q20_5</b>	0.028	1.810	1.584	1.801	1.568	1.836	1.622
<b>Q21_2</b>	0.040	0.947	0.752	0.953	0.756	0.966	0.778
<b>Q21_4</b>	0.029	1.000	0.809	1.005	0.813	1.015	0.821
<b>Q21_6</b>	0.036	1.023	0.834	1.029	0.841	1.042	0.855
<b>Q22_2</b>	0.033	0.978	0.767	0.982	0.768	0.995	0.745
<b>Q22_3</b>	0.038	1.096	0.916	1.100	0.915	1.117	0.945
<b>Q22_5</b>	0.026	1.028	0.850	1.035	0.852	1.041	0.873
<b>Q21_1</b>	0.018	0.905	0.737	0.908	0.748	0.913	0.767
<b>Q21_3</b>	0.042	0.839	0.688	0.844	0.688	0.857	0.726
<b>Q21_5</b>	0.046	0.847	0.693	0.851	0.691	0.868	0.730
<b>Q22_1</b>	0.022	0.914	0.733	0.914	0.739	0.924	0.762
<b>Q22_4</b>	0.034	0.933	0.726	0.929	0.722	0.949	0.710
<b>Q22_6</b>	0.042	0.960	0.756	0.965	0.761	0.981	0.766
<b>SWEMWBS</b>	0.065	3.657	2.887	3.672	2.897	3.782	3.010

## Hypothesis 2 model

Outer loadings (p<.001 in all rows)

	Original sample (O)	Sample mean (M)	2.5%	97.5%
<b>Q13_1 &lt;- Clutter (Livability)</b>	0.652	0.651	0.555	0.729
<b>Q13_3 &lt;- Clutter (Livability)</b>	0.883	0.882	0.851	0.908
<b>Q14_3 &lt;- Clutter (Livability)</b>	0.867	0.867	0.832	0.896
<b>Q15_1 &lt;- Clutter (Livability)</b>	0.880	0.880	0.855	0.903
<b>Q20_1 &lt;- Life Satisfaction</b>	0.896	0.896	0.876	0.914
<b>Q20_2 &lt;- Life Satisfaction</b>	0.856	0.855	0.819	0.886
<b>Q20_3 &lt;- Life Satisfaction</b>	0.911	0.911	0.894	0.925
<b>Q20_4 &lt;- Life Satisfaction</b>	0.834	0.834	0.793	0.868
<b>Q20_5 &lt;- Life Satisfaction</b>	0.701	0.700	0.633	0.757
<b>Q21_1 &lt;- PosAffect</b>	0.876	0.876	0.846	0.901
<b>Q21_2 &lt;- NegAffect</b>	0.857	0.856	0.819	0.886
<b>Q21_3 &lt;- PosAffect</b>	0.861	0.861	0.829	0.889
<b>Q21_4 &lt;- NegAffect</b>	0.866	0.865	0.827	0.894
<b>Q21_5 &lt;- PosAffect</b>	0.866	0.867	0.839	0.891
<b>Q21_6 &lt;- NegAffect</b>	0.815	0.814	0.770	0.850
<b>Q22_1 &lt;- PosAffect</b>	0.889	0.889	0.860	0.911
<b>Q22_2 &lt;- NegAffect</b>	0.843	0.842	0.807	0.872
<b>Q22_3 &lt;- NegAffect</b>	0.676	0.675	0.602	0.736
<b>Q22_4 &lt;- PosAffect</b>	0.810	0.810	0.772	0.843
<b>Q22_5 &lt;- NegAffect</b>	0.621	0.620	0.527	0.698
<b>Q22_6 &lt;- PosAffect</b>	0.839	0.839	0.808	0.868
<b>Q23_1 &lt;- Appreciation of Beaut</b>	0.876	0.875	0.832	0.910
<b>Q23_2 &lt;- Appreciation of Beaut</b>	0.889	0.887	0.836	0.924
<b>Q23_3 &lt;- Appreciation of Beaut</b>	0.868	0.867	0.824	0.905
<b>Q26 &lt;- Beauty of Home</b>	1.000	1.000	1.000	1.000

<b>SWEMWBS &lt;- SWEMWBS</b>	1.000	1.000	1.000	1.000
<b>Appreciation of Beaut x Clutter (Livability) -&gt; Appreciation of Beaut x Clutter (Livability)</b>	1.000	1.000	1.000	1.000
<b>Appreciation of Beaut x Beauty of Home -&gt; Appreciation of Beaut x Beauty of Home</b>	1.000	1.000	1.000	1.000

Internal consistency as Cronbach's alpha ( $p < .001$  for all rows):

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>2.5%</b>	<b>97.5%</b>
<b>Appreciation of Beaut</b>	0.851	0.851	0.824	0.876
<b>Beauty of Home</b>	1.000	1.000	1.000	1.000
<b>Clutter (Livability)</b>	0.844	0.844	0.818	0.866
<b>Life Satisfaction</b>	0.896	0.896	0.880	0.910
<b>NegAffect</b>	0.872	0.872	0.853	0.889
<b>PosAffect</b>	0.928	0.928	0.915	0.938
<b>SWEMWBS</b>	1.000	1.000	1.000	1.000
<b>Appreciation of Beaut x Clutter (Livability)</b>	0.000	0.000	0.000	0.000

Convergent validity (average variance extracted; note that  $p < .001$  in all rows)

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>2.5%</b>	<b>97.5%</b>
<b>Appreciation of Beaut</b>	0.771	0.769	0.736	0.800
<b>Beauty of Home</b>	1.000	1.000	1.000	1.000
<b>Clutter (Livability)</b>	0.683	0.683	0.649	0.715
<b>Life Satisfaction</b>	0.710	0.710	0.680	0.738
<b>NegAffect</b>	0.617	0.616	0.584	0.647
<b>PosAffect</b>	0.735	0.735	0.703	0.764
<b>SWEMWBS</b>	1.000	1.000	1.000	1.000
<b>Appreciation of Beaut x Clutter (Livability)</b>	0.000	0.000	0.000	0.000

Discriminant validity (HTMT)

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>2.5%</b>	<b>97.5%</b>
<b>Beauty of Home &lt;-&gt; Appreciation of Beaut</b>	0.251	0.251	0.160	0.340
<b>Clutter (Livability) &lt;-&gt; Appreciation of Beaut</b>	0.051	0.079	0.043	0.138
<b>Clutter (Livability) &lt;-&gt; Beauty of Home</b>	0.394	0.395	0.298	0.486
<b>Life Satisfaction &lt;-&gt; Appreciation of Beaut</b>	0.130	0.138	0.067	0.232
<b>Life Satisfaction &lt;-&gt; Beauty of Home</b>	0.459	0.459	0.375	0.539
<b>Life Satisfaction &lt;-&gt; Clutter (Livability)</b>	0.278	0.282	0.183	0.381
<b>NegAffect &lt;-&gt; Appreciation of Beaut</b>	0.078	0.094	0.051	0.158
<b>NegAffect &lt;-&gt; Beauty of Home</b>	0.247	0.247	0.152	0.339
<b>NegAffect &lt;-&gt; Clutter (Livability)</b>	0.283	0.284	0.183	0.384
<b>NegAffect &lt;-&gt; Life Satisfaction</b>	0.597	0.597	0.523	0.667
<b>PosAffect &lt;-&gt; Appreciation of Beaut</b>	0.191	0.192	0.090	0.296
<b>PosAffect &lt;-&gt; Beauty of Home</b>	0.424	0.423	0.333	0.509
<b>PosAffect &lt;-&gt; Clutter (Livability)</b>	0.251	0.252	0.153	0.349
<b>PosAffect &lt;-&gt; Life Satisfaction</b>	0.699	0.699	0.625	0.765
<b>PosAffect &lt;-&gt; NegAffect</b>	0.710	0.710	0.647	0.769
<b>SWEMWBS &lt;-&gt; Appreciation of Beaut</b>	0.115	0.117	0.026	0.227
<b>SWEMWBS &lt;-&gt; Beauty of Home</b>	0.377	0.375	0.285	0.461
<b>SWEMWBS &lt;-&gt; Clutter (Livability)</b>	0.282	0.283	0.187	0.375
<b>SWEMWBS &lt;-&gt; Life Satisfaction</b>	0.570	0.570	0.479	0.651
<b>SWEMWBS &lt;-&gt; NegAffect</b>	0.695	0.695	0.643	0.744
<b>SWEMWBS &lt;-&gt; PosAffect</b>	0.792	0.792	0.748	0.832



### Structural Model

Collinearity: As there was only one exogenous variable (i.e. clutter) collinearity was not an issue as it only arises with two or more predictor variables (Hair et al., 2022)

Significance of path coefficients (note that lower scores on the Life Satisfaction measure equal greater life satisfaction, so a positive path coefficient implies greater clutter causes lower life satisfaction):

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>Standard deviation (STDEV)</b>	<b>T statistics ( O/STDEV )</b>	<b>P values</b>
<b>Appreciation of Beaut -&gt; Beauty of Home</b>	0.224	0.225	0.040	5.547	0.000
<b>Appreciation of Beaut -&gt; Life Satisfaction</b>	-0.018	-0.019	0.047	0.379	0.705
<b>Appreciation of Beaut -&gt; NegAffect</b>	-0.001	-0.003	0.047	0.030	0.976
<b>Appreciation of Beaut -&gt; PosAffect</b>	0.078	0.080	0.045	1.733	0.083
<b>Appreciation of Beaut -&gt; SWEMWBS</b>	0.028	0.030	0.055	0.514	0.607
<b>Beauty of Home -&gt; Life Satisfaction</b>	-0.398	-0.397	0.045	8.918	0.000
<b>Beauty of Home -&gt; NegAffect</b>	-0.168	-0.167	0.053	3.191	0.001
<b>Beauty of Home -&gt; PosAffect</b>	0.351	0.349	0.050	7.056	0.000
<b>Beauty of Home -&gt; SWEMWBS</b>	0.314	0.310	0.053	5.875	0.000
<b>Clutter (Livability) -&gt; Beauty of Home</b>	-0.369	-0.370	0.042	8.831	0.000
<b>Clutter (Livability) -&gt; Life Satisfaction</b>	0.105	0.109	0.045	2.336	0.020
<b>Clutter (Livability) -&gt; NegAffect</b>	0.182	0.188	0.050	3.667	0.000
<b>Clutter (Livability) -&gt; PosAffect</b>	-0.101	-0.105	0.046	2.208	0.027
<b>Clutter (Livability) -&gt; SWEMWBS</b>	-0.148	-0.153	0.045	3.295	0.001
<b>Appreciation of Beaut x Beauty of Home -&gt; Life Satisfaction</b>	-0.011	-0.010	0.050	0.212	0.832
<b>Appreciation of Beaut x Beauty of Home -&gt; NegAffect</b>	0.007	0.007	0.047	0.146	0.884

<b>Appreciation of Beaut x Beauty of Home -&gt; PosAffect</b>	-0.076	-0.076	0.052	1.450	0.147
<b>Appreciation of Beaut x Beauty of Home -&gt; SWEMWBS</b>	-0.026	-0.026	0.069	0.382	0.702
<b>Appreciation of Beaut x Clutter (Livability) -&gt; Beauty of Home</b>	-0.000	0.000	0.046	0.008	0.994

Explanatory Power (R2)

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>Standard deviation (STDEV)</b>	<b>T statistics ( O/STDEV )</b>	<b>P values</b>
<b>Beauty of Home</b>	0.189	0.197	0.033	5.780	0.000
<b>Life Satisfaction</b>	0.204	0.214	0.035	5.804	0.000
<b>NegAffect</b>	0.084	0.095	0.025	3.306	0.001
<b>PosAffect</b>	0.188	0.197	0.037	5.066	0.000
<b>SWEMWBS</b>	0.161	0.172	0.035	4.641	0.000

Predictive Power:

	<b>Q<sup>2</sup>predict</b>	<b>PLS-SEM_RMSE</b>	<b>PLS-SEM_MAE</b>	<b>LM_RMSE</b>	<b>LM_MAE</b>	<b>IA_RMSE</b>	<b>IA_MAE</b>
<b>Q26</b>	0.174	0.887	0.697	0.884	0.699	0.976	0.771
<b>Q20_1</b>	0.040	1.756	1.524	1.759	1.533	1.791	1.574
<b>Q20_2</b>	0.027	1.649	1.398	1.641	1.385	1.672	1.436
<b>Q20_3</b>	0.065	1.667	1.400	1.669	1.396	1.724	1.469
<b>Q20_4</b>	0.052	1.696	1.412	1.702	1.408	1.742	1.482
<b>Q20_5</b>	0.037	1.802	1.576	1.779	1.524	1.836	1.622
<b>Q21_2</b>	0.040	0.947	0.751	0.956	0.758	0.966	0.778
<b>Q21_4</b>	0.027	1.001	0.808	1.012	0.817	1.015	0.821

<b>Q21_6</b>	0.034	1.024	0.836	1.035	0.845	1.042	0.855
<b>Q22_2</b>	0.032	0.979	0.769	0.985	0.773	0.995	0.745
<b>Q22_3</b>	0.031	1.100	0.919	1.104	0.916	1.117	0.945
<b>Q22_5</b>	0.027	1.027	0.851	1.038	0.855	1.041	0.873
<b>Q21_1</b>	0.030	0.899	0.732	0.905	0.742	0.913	0.767
<b>Q21_3</b>	0.056	0.833	0.681	0.835	0.675	0.857	0.726
<b>Q21_5</b>	0.074	0.835	0.686	0.839	0.677	0.868	0.730
<b>Q22_1</b>	0.034	0.908	0.734	0.908	0.739	0.924	0.762
<b>Q22_4</b>	0.053	0.924	0.723	0.923	0.727	0.949	0.710
<b>Q22_6</b>	0.046	0.958	0.758	0.962	0.762	0.981	0.766
<b>SWEMWBS</b>	0.068	3.651	2.883	3.683	2.904	3.782	3.010

Mediation (Home Beauty as mediating variable): Indirect effects

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>Standard deviation (STDEV)</b>	<b>T statistics ( O/STDEV )</b>	<b>P values</b>
<b>Appreciation of Beaut -&gt; Life Satisfaction</b>	-0.089	-0.089	0.019	4.749	0.000
<b>Appreciation of Beaut -&gt; NegAffect</b>	-0.038	-0.038	0.014	2.768	0.006
<b>Appreciation of Beaut -&gt; PosAffect</b>	0.079	0.078	0.017	4.543	0.000
<b>Appreciation of Beaut -&gt; SWEMWBS</b>	0.070	0.070	0.018	3.952	0.000
<b>Clutter (Livability) -&gt; Life Satisfaction</b>	0.147	0.147	0.023	6.251	0.000
<b>Clutter (Livability) -&gt; NegAffect</b>	0.062	0.062	0.020	3.030	0.002
<b>Clutter (Livability) -&gt; PosAffect</b>	-0.130	-0.129	0.023	5.600	0.000
<b>Clutter (Livability) -&gt; SWEMWBS</b>	-0.116	-0.114	0.022	5.208	0.000
<b>Appreciation of Beaut x Clutter (Livability) -&gt; Life Satisfaction</b>	0.000	-0.000	0.019	0.008	0.994
<b>Appreciation of Beaut x Clutter (Livability) -&gt; NegAffect</b>	0.000	-0.000	0.008	0.008	0.994

<b>Appreciation of Beaut x Clutter (Livability) -&gt; PosAffect</b>	-0.000	0.000	0.016	0.008	0.994
<b>Appreciation of Beaut x Clutter (Livability) -&gt; SWEMWBS</b>	-0.000	0.000	0.015	0.008	0.994

Moderation (Appreciation of Beauty as moderator)

As shown below, none of the interaction products between moderator and home beauty were significant for any of the outcome variables. Therefore no moderation has occurred.

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>Standard deviation (STDEV)</b>	<b>T statistics ( O/STDEV )</b>	<b>P values</b>
<b>Appreciation of Beaut x Beauty of Home -&gt; Life Satisfaction</b>	-0.011	-0.010	0.050	0.212	0.832
<b>Appreciation of Beaut x Beauty of Home -&gt; NegAffect</b>	0.007	0.007	0.047	0.146	0.884
<b>Appreciation of Beaut x Beauty of Home -&gt; PosAffect</b>	-0.076	-0.076	0.052	1.450	0.147
<b>Appreciation of Beaut x Beauty of Home -&gt; SWEMWBS</b>	-0.026	-0.026	0.069	0.382	0.702
<b>Appreciation of Beaut x Clutter (Livability) -&gt; Beauty of Home</b>	-0.000	0.000	0.046	0.008	0.994

### Hypothesis 3 (test of moderations)

#### *Measurement Model*

Outer loadings (p<.001 in all rows)

	Original sample (O)	Sample mean (M)	2.5%	97.5%
Age <- Age	1.000	1.000	1.000	1.000
Gender_Binary <- Gender	1.000	1.000	1.000	1.000
Income <- Income	1.000	1.000	1.000	1.000
Q13_1 <- Clutter (Livability)	0.652	0.651	0.556	0.729
Q13_3 <- Clutter (Livability)	0.883	0.882	0.851	0.908
Q14_3 <- Clutter (Livability)	0.867	0.867	0.832	0.896
Q15_1 <- Clutter (Livability)	0.880	0.880	0.855	0.903
Q20_1 <- Life Satisfaction	0.895	0.894	0.874	0.912
Q20_2 <- Life Satisfaction	0.858	0.857	0.823	0.886
Q20_3 <- Life Satisfaction	0.909	0.909	0.891	0.924
Q20_4 <- Life Satisfaction	0.839	0.839	0.801	0.871
Q20_5 <- Life Satisfaction	0.697	0.697	0.631	0.753
Q21_1 <- PosAffect	0.877	0.877	0.847	0.901
Q21_2 <- NegAffect	0.862	0.861	0.830	0.888
Q21_3 <- PosAffect	0.859	0.859	0.825	0.887
Q21_4 <- NegAffect	0.874	0.873	0.838	0.900
Q21_5 <- PosAffect	0.866	0.867	0.839	0.891
Q21_6 <- NegAffect	0.831	0.830	0.792	0.861
Q22_1 <- PosAffect	0.890	0.890	0.862	0.912
Q22_2 <- NegAffect	0.840	0.839	0.807	0.866
Q22_3 <- NegAffect	0.662	0.662	0.594	0.720
Q22_4 <- PosAffect	0.809	0.808	0.769	0.842
Q22_5 <- NegAffect	0.596	0.599	0.509	0.677



<b>Q22_6 &lt;- PosAffect</b>	0.842	0.841	0.810	0.869
<b>Q24rounded &lt;- Intention to Declutter</b>	1.000	1.000	1.000	1.000
<b>Q26 &lt;- Beauty of Home</b>	1.000	1.000	1.000	1.000
<b>Q27rounded &lt;- Location of Doing Survey</b>	1.000	1.000	1.000	1.000
<b>Q29rounded &lt;- Time at Home - Weekends</b>	1.000	1.000	1.000	1.000
<b>SWEMWBS &lt;- SWEMWBS</b>	1.000	1.000	1.000	1.000
<b>Student_status &lt;- Student_status</b>	1.000	1.000	1.000	1.000
<b>TimeHomeWeekdaysBinary &lt;- Time at Home - Weekdays</b>	1.000	1.000	1.000	1.000
<b>Age x Clutter (Livability) -&gt; Age x Clutter (Livability)</b>	1.000	1.000	1.000	1.000
<b>Income x Clutter (Livability) -&gt; Income x Clutter (Livability)</b>	1.000	1.000	1.000	1.000
<b>Time at Home - Weekends x Clutter (Livability) -&gt; Time at Home - Weekends x Clutter (Livability)</b>	1.000	1.000	1.000	1.000
<b>Gender x Clutter (Livability) -&gt; Gender x Clutter (Livability)</b>	1.000	1.000	1.000	1.000
<b>Intention to Declutter x Clutter (Livability) -&gt; Intention to Declutter x Clutter (Livability)</b>	1.000	1.000	1.000	1.000
<b>Location of Doing Survey x Clutter (Livability) -&gt; Location of Doing Survey x Clutter (Livability)</b>	1.000	1.000	1.000	1.000
<b>Student_status x Clutter (Livability) -&gt; Student_status x Clutter (Livability)</b>	1.000	1.000	1.000	1.000
<b>Time at Home - Weekdays x Clutter (Livability) -&gt; Time at Home - Weekdays x Clutter (Livability)</b>	1.000	1.000	1.000	1.000

Internal Consistency as Cronbach's alpha (note that  $p < .001$  in all rows)

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>2.5%</b>	<b>97.5%</b>
<b>Age</b>	1.000	1.000	1.000	1.000
<b>Beauty of Home</b>	1.000	1.000	1.000	1.000
<b>Clutter (Livability)</b>	0.844	0.844	0.818	0.866
<b>Gender</b>	1.000	1.000	1.000	1.000
<b>Income</b>	1.000	1.000	1.000	1.000
<b>Intention to Declutter</b>	1.000	1.000	1.000	1.000

<b>Life Satisfaction</b>	0.896	0.896	0.880	0.910
<b>Location of Doing Survey</b>	1.000	1.000	1.000	1.000
<b>NegAffect</b>	0.872	0.872	0.853	0.889
<b>PosAffect</b>	0.928	0.928	0.915	0.938
<b>SWEMWBS</b>	1.000	1.000	1.000	1.000
<b>Student_status</b>	1.000	1.000	1.000	1.000
<b>Time at Home - Weekdays</b>	1.000	1.000	1.000	1.000
<b>Time at Home - Weekends</b>	1.000	1.000	1.000	1.000

Convergent validity (average variance extracted; note that  $p < .001$  in all rows)

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>2.5%</b>	<b>97.5%</b>
<b>Age</b>	1.000	1.000	1.000	1.000
<b>Beauty of Home</b>	1.000	1.000	1.000	1.000
<b>Clutter (Livability)</b>	0.683	0.683	0.649	0.715
<b>Gender</b>	1.000	1.000	1.000	1.000
<b>Income</b>	1.000	1.000	1.000	1.000
<b>Intention to Declutter</b>	1.000	1.000	1.000	1.000
<b>Life Satisfaction</b>	0.710	0.710	0.680	0.738
<b>Location of Doing Survey</b>	1.000	1.000	1.000	1.000
<b>NegAffect</b>	0.616	0.616	0.583	0.647
<b>PosAffect</b>	0.735	0.735	0.703	0.764
<b>SWEMWBS</b>	1.000	1.000	1.000	1.000
<b>Student_status</b>	1.000	1.000	1.000	1.000
<b>Time at Home - Weekdays</b>	1.000	1.000	1.000	1.000
<b>Time at Home - Weekends</b>	1.000	1.000	1.000	1.000
<b>Gender x Clutter (Livability)</b>	0.000	0.000	0.000	0.000
<b>Time at Home - Weekdays x Clutter (Livability)</b>	0.000	0.000	0.000	0.000
<b>Student_status x Clutter (Livability)</b>	0.000	0.000	0.000	0.000
<b>Age x Clutter (Livability)</b>	0.000	0.000	0.000	0.000

Discriminant validity (HTMT)

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>2.5%</b>	<b>97.5%</b>
<b>Beauty of Home &lt;-&gt; Age</b>	0.099	0.100	0.014	0.184
<b>Clutter (Livability) &lt;-&gt; Age</b>	0.041	0.065	0.021	0.143
<b>Clutter (Livability) &lt;-&gt; Beauty of Home</b>	0.394	0.395	0.298	0.486
<b>Gender &lt;-&gt; Age</b>	0.057	0.061	0.003	0.148
<b>Gender &lt;-&gt; Beauty of Home</b>	0.058	0.062	0.003	0.147
<b>Gender &lt;-&gt; Clutter (Livability)</b>	0.105	0.107	0.032	0.200
<b>Income &lt;-&gt; Age</b>	0.148	0.149	0.061	0.234
<b>Income &lt;-&gt; Beauty of Home</b>	0.081	0.082	0.007	0.167
<b>Income &lt;-&gt; Clutter (Livability)</b>	0.031	0.056	0.020	0.114
<b>Income &lt;-&gt; Gender</b>	0.020	0.039	0.001	0.107
<b>Intention to Declutter &lt;-&gt; Age</b>	0.082	0.084	0.007	0.169
<b>Intention to Declutter &lt;-&gt; Beauty of Home</b>	0.057	0.063	0.003	0.150
<b>Intention to Declutter &lt;-&gt; Clutter (Livability)</b>	0.472	0.472	0.381	0.558
<b>Intention to Declutter &lt;-&gt; Gender</b>	0.056	0.061	0.003	0.144
<b>Intention to Declutter &lt;-&gt; Income</b>	0.080	0.081	0.007	0.170
<b>Life Satisfaction &lt;-&gt; Age</b>	0.109	0.118	0.064	0.194
<b>Life Satisfaction &lt;-&gt; Beauty of Home</b>	0.459	0.459	0.375	0.539
<b>Life Satisfaction &lt;-&gt; Clutter (Livability)</b>	0.278	0.282	0.183	0.381
<b>Life Satisfaction &lt;-&gt; Gender</b>	0.094	0.098	0.033	0.185
<b>Life Satisfaction &lt;-&gt; Income</b>	0.249	0.249	0.160	0.338
<b>Life Satisfaction &lt;-&gt; Intention to Declutter</b>	0.041	0.063	0.031	0.122
<b>Location of Doing Survey &lt;-&gt; Age</b>	0.079	0.080	0.006	0.164
<b>Location of Doing Survey &lt;-&gt; Beauty of Home</b>	0.027	0.047	0.002	0.128
<b>Location of Doing Survey &lt;-&gt; Clutter (Livability)</b>	0.025	0.057	0.019	0.122
<b>Location of Doing Survey &lt;-&gt; Gender</b>	0.000	0.035	0.001	0.098
<b>Location of Doing Survey &lt;-&gt; Income</b>	0.045	0.053	0.002	0.132
<b>Location of Doing Survey &lt;-&gt; Intention to Declutter</b>	0.020	0.041	0.002	0.114
<b>Location of Doing Survey &lt;-&gt; Life Satisfaction</b>	0.044	0.061	0.025	0.127

<b>NegAffect &lt;-&gt; Age</b>	0.225	0.225	0.136	0.312
<b>NegAffect &lt;-&gt; Beauty of Home</b>	0.247	0.247	0.152	0.339
<b>NegAffect &lt;-&gt; Clutter (Livability)</b>	0.283	0.284	0.183	0.384
<b>NegAffect &lt;-&gt; Gender</b>	0.035	0.061	0.026	0.121
<b>NegAffect &lt;-&gt; Income</b>	0.124	0.133	0.064	0.216
<b>NegAffect &lt;-&gt; Intention to Declutter</b>	0.146	0.147	0.057	0.241
<b>NegAffect &lt;-&gt; Life Satisfaction</b>	0.597	0.597	0.523	0.667
<b>NegAffect &lt;-&gt; Location of Doing Survey</b>	0.030	0.056	0.023	0.121
<b>PosAffect &lt;-&gt; Age</b>	0.115	0.118	0.047	0.204
<b>PosAffect &lt;-&gt; Beauty of Home</b>	0.424	0.423	0.333	0.509
<b>PosAffect &lt;-&gt; Clutter (Livability)</b>	0.251	0.252	0.153	0.349
<b>PosAffect &lt;-&gt; Gender</b>	0.078	0.083	0.022	0.173
<b>PosAffect &lt;-&gt; Income</b>	0.194	0.194	0.102	0.283
<b>PosAffect &lt;-&gt; Intention to Declutter</b>	0.056	0.071	0.026	0.154
<b>PosAffect &lt;-&gt; Life Satisfaction</b>	0.699	0.699	0.625	0.765
<b>PosAffect &lt;-&gt; Location of Doing Survey</b>	0.025	0.052	0.023	0.112
<b>PosAffect &lt;-&gt; NegAffect</b>	0.710	0.710	0.647	0.769
<b>SWEMWBS &lt;-&gt; Age</b>	0.216	0.216	0.129	0.299
<b>SWEMWBS &lt;-&gt; Beauty of Home</b>	0.377	0.375	0.285	0.461
<b>SWEMWBS &lt;-&gt; Clutter (Livability)</b>	0.282	0.283	0.187	0.375
<b>SWEMWBS &lt;-&gt; Gender</b>	0.019	0.037	0.001	0.104
<b>SWEMWBS &lt;-&gt; Income</b>	0.131	0.131	0.039	0.222
<b>SWEMWBS &lt;-&gt; Intention to Declutter</b>	0.087	0.090	0.007	0.188
<b>SWEMWBS &lt;-&gt; Life Satisfaction</b>	0.570	0.570	0.479	0.651
<b>SWEMWBS &lt;-&gt; Location of Doing Survey</b>	0.002	0.041	0.002	0.114
<b>SWEMWBS &lt;-&gt; NegAffect</b>	0.695	0.695	0.643	0.744
<b>SWEMWBS &lt;-&gt; PosAffect</b>	0.792	0.792	0.748	0.832
<b>Student_status &lt;-&gt; Age</b>	0.489	0.489	0.429	0.546
<b>Student_status &lt;-&gt; Beauty of Home</b>	0.023	0.041	0.002	0.113
<b>Student_status &lt;-&gt; Clutter (Livability)</b>	0.012	0.049	0.015	0.111

<b>Student_status &lt;-&gt; Gender</b>	0.051	0.056	0.002	0.134
<b>Student_status &lt;-&gt; Income</b>	0.235	0.235	0.150	0.319
<b>Student_status &lt;-&gt; Intention to Declutter</b>	0.034	0.046	0.002	0.122
<b>Student_status &lt;-&gt; Life Satisfaction</b>	0.059	0.070	0.021	0.152
<b>Student_status &lt;-&gt; Location of Doing Survey</b>	0.109	0.110	0.019	0.203
<b>Student_status &lt;-&gt; NegAffect</b>	0.161	0.169	0.095	0.250
<b>Student_status &lt;-&gt; PosAffect</b>	0.066	0.078	0.033	0.151
<b>Student_status &lt;-&gt; SWEMWBS</b>	0.149	0.149	0.059	0.238
<b>Time at Home - Weekdays &lt;-&gt; Age</b>	0.090	0.091	0.013	0.163
<b>Time at Home - Weekdays &lt;-&gt; Beauty of Home</b>	0.069	0.070	0.005	0.148
<b>Time at Home - Weekdays &lt;-&gt; Clutter (Livability)</b>	0.050	0.064	0.022	0.129
<b>Time at Home - Weekdays &lt;-&gt; Gender</b>	0.079	0.081	0.005	0.188
<b>Time at Home - Weekdays &lt;-&gt; Income</b>	0.036	0.046	0.002	0.125
<b>Time at Home - Weekdays &lt;-&gt; Intention to Declutter</b>	0.016	0.032	0.001	0.088
<b>Time at Home - Weekdays &lt;-&gt; Life Satisfaction</b>	0.073	0.079	0.025	0.156
<b>Time at Home - Weekdays &lt;-&gt; Location of Doing Survey</b>	0.248	0.247	0.100	0.397
<b>Time at Home - Weekdays &lt;-&gt; NegAffect</b>	0.028	0.059	0.028	0.109
<b>Time at Home - Weekdays &lt;-&gt; PosAffect</b>	0.037	0.053	0.016	0.125
<b>Time at Home - Weekdays &lt;-&gt; SWEMWBS</b>	0.027	0.039	0.002	0.106
<b>Time at Home - Weekdays &lt;-&gt; Student_status</b>	0.022	0.041	0.002	0.115
<b>Time at Home - Weekends &lt;-&gt; Age</b>	0.071	0.074	0.004	0.155
<b>Time at Home - Weekends &lt;-&gt; Beauty of Home</b>	0.040	0.050	0.002	0.129
<b>Time at Home - Weekends &lt;-&gt; Clutter (Livability)</b>	0.036	0.058	0.019	0.126
<b>Time at Home - Weekends &lt;-&gt; Gender</b>	0.053	0.059	0.002	0.151
<b>Time at Home - Weekends &lt;-&gt; Income</b>	0.005	0.035	0.001	0.096
<b>Time at Home - Weekends &lt;-&gt; Intention to Declutter</b>	0.062	0.063	0.004	0.140
<b>Time at Home - Weekends &lt;-&gt; Life Satisfaction</b>	0.041	0.061	0.025	0.119
<b>Time at Home - Weekends &lt;-&gt; Location of Doing Survey</b>	0.316	0.317	0.199	0.435
<b>Time at Home - Weekends &lt;-&gt; NegAffect</b>	0.080	0.088	0.035	0.165
<b>Time at Home - Weekends &lt;-&gt; PosAffect</b>	0.075	0.082	0.027	0.164

<b>Time at Home - Weekends &lt;-&gt; SWEMWBS</b>	0.052	0.057	0.003	0.133
<b>Time at Home - Weekends &lt;-&gt; Student_status</b>	0.074	0.076	0.005	0.166
<b>Time at Home - Weekends &lt;-&gt; Time at Home - Weekdays</b>	0.295	0.294	0.148	0.433

### *Structural Model*

Collinearity: As there was only one exogenous variable (i.e. clutter) collinearity was not an issue as it only arises with two or more predictor variables (Hair et al., 2022)

Significance of path coefficients (note that lower scores on the Life Satisfaction measure equal greater life satisfaction, so a positive path coefficient implies greater clutter causes lower life satisfaction):

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>Standard deviation (STDEV)</b>	<b>T statistics ( O/STDEV )</b>	<b>P values</b>
<b>Age -&gt; Life Satisfaction</b>	-0.048	-0.051	0.046	1.039	0.299
<b>Age -&gt; NegAffect</b>	-0.156	-0.155	0.048	3.241	0.001
<b>Age -&gt; PosAffect</b>	0.058	0.056	0.049	1.166	0.244
<b>Age -&gt; SWEMWBS</b>	0.129	0.130	0.050	2.556	0.011
<b>Beauty of Home -&gt; Life Satisfaction</b>	-0.374	-0.373	0.044	8.411	0.000
<b>Beauty of Home -&gt; NegAffect</b>	-0.158	-0.161	0.050	3.149	0.002
<b>Beauty of Home -&gt; PosAffect</b>	0.360	0.360	0.049	7.404	0.000
<b>Beauty of Home -&gt; SWEMWBS</b>	0.297	0.293	0.051	5.824	0.000
<b>Clutter (Livability) -&gt; Beauty of Home</b>	-0.373	-0.375	0.043	8.712	0.000
<b>Clutter (Livability) -&gt; Life Satisfaction</b>	0.310	0.323	0.298	1.039	0.299
<b>Clutter (Livability) -&gt; NegAffect</b>	0.027	0.055	0.285	0.096	0.924
<b>Clutter (Livability) -&gt; PosAffect</b>	0.210	0.181	0.274	0.765	0.444
<b>Clutter (Livability) -&gt; SWEMWBS</b>	0.190	0.167	0.259	0.732	0.464
<b>Gender -&gt; Life Satisfaction</b>	-0.150	-0.152	0.106	1.407	0.160
<b>Gender -&gt; NegAffect</b>	0.097	0.102	0.126	0.774	0.439
<b>Gender -&gt; PosAffect</b>	0.100	0.093	0.122	0.821	0.412
<b>Gender -&gt; SWEMWBS</b>	-0.026	-0.031	0.103	0.253	0.800

<b>Income -&gt; Life Satisfaction</b>	-0.214	-0.216	0.044	4.854	0.000
<b>Income -&gt; NegAffect</b>	-0.074	-0.073	0.046	1.590	0.112
<b>Income -&gt; PosAffect</b>	0.158	0.158	0.044	3.585	0.000
<b>Income -&gt; SWEMWBS</b>	0.077	0.078	0.044	1.727	0.084
<b>Intention to Declutter -&gt; Life Satisfaction</b>	-0.064	-0.062	0.045	1.416	0.157
<b>Intention to Declutter -&gt; NegAffect</b>	0.046	0.048	0.051	0.898	0.369
<b>Intention to Declutter -&gt; PosAffect</b>	-0.001	-0.002	0.050	0.027	0.979
<b>Intention to Declutter -&gt; SWEMWBS</b>	0.012	0.013	0.056	0.219	0.827
<b>Location of Doing Survey -&gt; Life Satisfaction</b>	0.142	0.151	0.163	0.872	0.383
<b>Location of Doing Survey -&gt; NegAffect</b>	0.011	0.008	0.189	0.057	0.954
<b>Location of Doing Survey -&gt; PosAffect</b>	-0.121	-0.128	0.170	0.710	0.478
<b>Location of Doing Survey -&gt; SWEMWBS</b>	-0.064	-0.065	0.174	0.366	0.714
<b>Student_status -&gt; Life Satisfaction</b>	-0.021	-0.026	0.106	0.196	0.845
<b>Student_status -&gt; NegAffect</b>	0.157	0.164	0.113	1.389	0.165
<b>Student_status -&gt; PosAffect</b>	-0.001	-0.003	0.105	0.013	0.989
<b>Student_status -&gt; SWEMWBS</b>	-0.153	-0.153	0.110	1.401	0.161
<b>Time at Home - Weekdays -&gt; Life Satisfaction</b>	-0.098	-0.108	0.253	0.388	0.698
<b>Time at Home - Weekdays -&gt; NegAffect</b>	-0.033	-0.047	0.253	0.131	0.896
<b>Time at Home - Weekdays -&gt; PosAffect</b>	0.066	0.084	0.259	0.254	0.800
<b>Time at Home - Weekdays -&gt; SWEMWBS</b>	0.013	0.020	0.214	0.059	0.953
<b>Time at Home - Weekends -&gt; Life Satisfaction</b>	-0.043	-0.043	0.040	1.068	0.285
<b>Time at Home - Weekends -&gt; NegAffect</b>	-0.084	-0.082	0.046	1.856	0.063
<b>Time at Home - Weekends -&gt; PosAffect</b>	0.067	0.065	0.046	1.472	0.141
<b>Time at Home - Weekends -&gt; SWEMWBS</b>	0.055	0.051	0.043	1.286	0.199
<b>Income x Clutter (Livability) -&gt; Life Satisfaction</b>	-0.016	-0.018	0.042	0.367	0.713
<b>Income x Clutter (Livability) -&gt; NegAffect</b>	-0.013	-0.016	0.043	0.310	0.757
<b>Income x Clutter (Livability) -&gt; PosAffect</b>	-0.030	-0.027	0.042	0.710	0.478

<b>Income x Clutter (Livability) -&gt; SWEMWBS</b>	0.002	0.004	0.042	0.044	0.965
<b>Intention to Declutter x Clutter (Livability) -&gt; Life Satisfaction</b>	0.076	0.079	0.040	1.912	0.056
<b>Intention to Declutter x Clutter (Livability) -&gt; NegAffect</b>	0.000	-0.001	0.042	0.008	0.994
<b>Intention to Declutter x Clutter (Livability) -&gt; PosAffect</b>	-0.057	-0.056	0.043	1.327	0.185
<b>Intention to Declutter x Clutter (Livability) -&gt; SWEMWBS</b>	0.040	0.040	0.049	0.835	0.404
<b>Time at Home - Weekends x Clutter (Livability) -&gt; Life Satisfaction</b>	0.022	0.022	0.048	0.453	0.651
<b>Time at Home - Weekends x Clutter (Livability) -&gt; NegAffect</b>	0.080	0.082	0.051	1.583	0.114
<b>Time at Home - Weekends x Clutter (Livability) -&gt; PosAffect</b>	-0.107	-0.108	0.047	2.296	0.022
<b>Time at Home - Weekends x Clutter (Livability) -&gt; SWEMWBS</b>	-0.063	-0.063	0.050	1.259	0.208
<b>Location of Doing Survey x Clutter (Livability) -&gt; Life Satisfaction</b>	-0.226	-0.221	0.163	1.386	0.166
<b>Location of Doing Survey x Clutter (Livability) -&gt; NegAffect</b>	-0.095	-0.105	0.156	0.610	0.542
<b>Location of Doing Survey x Clutter (Livability) -&gt; PosAffect</b>	0.245	0.250	0.139	1.762	0.078
<b>Location of Doing Survey x Clutter (Livability) -&gt; SWEMWBS</b>	0.157	0.159	0.170	0.922	0.356
<b>Gender x Clutter (Livability) -&gt; Life Satisfaction</b>	-0.033	-0.034	0.113	0.293	0.769
<b>Gender x Clutter (Livability) -&gt; NegAffect</b>	-0.203	-0.201	0.130	1.559	0.119
<b>Gender x Clutter (Livability) -&gt; PosAffect</b>	0.067	0.074	0.128	0.528	0.598



<b>Gender x Clutter (Livability) -&gt; SWEMWBS</b>	-0.023	-0.020	0.116	0.198	0.843
<b>Time at Home - Weekdays x Clutter (Livability) -&gt; Life Satisfaction</b>	-0.101	-0.105	0.286	0.355	0.723
<b>Time at Home - Weekdays x Clutter (Livability) -&gt; NegAffect</b>	0.329	0.304	0.292	1.126	0.260
<b>Time at Home - Weekdays x Clutter (Livability) -&gt; PosAffect</b>	-0.363	-0.349	0.266	1.366	0.172
<b>Time at Home - Weekdays x Clutter (Livability) -&gt; SWEMWBS</b>	-0.338	-0.329	0.241	1.401	0.161
<b>Student_status x Clutter (Livability) -&gt; Life Satisfaction</b>	-0.099	-0.113	0.109	0.905	0.366
<b>Student_status x Clutter (Livability) -&gt; NegAffect</b>	-0.021	-0.022	0.108	0.193	0.847
<b>Student_status x Clutter (Livability) -&gt; PosAffect</b>	-0.089	-0.078	0.108	0.825	0.409
<b>Student_status x Clutter (Livability) -&gt; SWEMWBS</b>	-0.065	-0.054	0.112	0.579	0.563
<b>Age x Clutter (Livability) -&gt; Life Satisfaction</b>	-0.046	-0.049	0.043	1.055	0.291
<b>Age x Clutter (Livability) -&gt; NegAffect</b>	0.011	0.012	0.051	0.218	0.828
<b>Age x Clutter (Livability) -&gt; PosAffect</b>	-0.004	-0.001	0.049	0.072	0.942
<b>Age x Clutter (Livability) -&gt; SWEMWBS</b>	-0.041	-0.037	0.045	0.900	0.368

Explanatory power ( $R^2$ )

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>Standard deviation (STDEV)</b>	<b>T statistics ( O/STDEV )</b>	<b>P values</b>
<b>Beauty of Home</b>	0.139	0.142	0.032	4.352	0.000
<b>Life Satisfaction</b>	0.272	0.302	0.037	7.386	0.000

<b>NegAffect</b>	0.154	0.189	0.034	4.582	0.000
<b>PosAffect</b>	0.227	0.258	0.036	6.274	0.000
<b>SWEMWBS</b>	0.215	0.246	0.037	5.819	0.000

Predictive power

	<b>Q<sup>2</sup>predict</b>	<b>PLS-SEM_RMSE</b>	<b>PLS-SEM_MAE</b>	<b>LM_RMSE</b>	<b>LM_MAE</b>	<b>IA_RMSE</b>	<b>IA_MAE</b>
<b>Q26</b>	0.133	0.908	0.725	0.904	0.719	0.976	0.771
<b>Q20_1</b>	0.032	1.762	1.481	1.734	1.492	1.791	1.574
<b>Q20_2</b>	0.051	1.629	1.324	1.581	1.320	1.672	1.436
<b>Q20_3</b>	0.048	1.682	1.346	1.643	1.359	1.724	1.469
<b>Q20_4</b>	0.052	1.697	1.350	1.662	1.362	1.742	1.482
<b>Q20_5</b>	0.003	1.833	1.604	1.801	1.560	1.836	1.622
<b>Q21_2</b>	0.041	0.947	0.753	0.939	0.746	0.966	0.778
<b>Q21_4</b>	0.021	1.004	0.801	0.991	0.800	1.015	0.821
<b>Q21_6</b>	0.050	1.016	0.821	1.005	0.816	1.042	0.855
<b>Q22_2</b>	0.028	0.981	0.772	0.975	0.772	0.995	0.745
<b>Q22_3</b>	0.029	1.101	0.908	1.105	0.914	1.117	0.945
<b>Q22_5</b>	-0.013	1.048	0.855	1.044	0.858	1.041	0.873
<b>Q21_1</b>	-0.006	0.916	0.743	0.902	0.738	0.913	0.767
<b>Q21_3</b>	0.018	0.850	0.686	0.846	0.689	0.857	0.726
<b>Q21_5</b>	0.048	0.847	0.683	0.846	0.682	0.868	0.730
<b>Q22_1</b>	0.006	0.921	0.734	0.907	0.727	0.924	0.762
<b>Q22_4</b>	0.013	0.943	0.743	0.927	0.739	0.949	0.710
<b>Q22_6</b>	0.040	0.961	0.759	0.955	0.748	0.981	0.766
<b>SWEMWBS</b>	0.055	3.678	2.831	3.624	2.795	3.782	3.010

Moderations: Path coefficients and p-values for moderation effects, shown as interaction terms

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>Standard deviation (STDEV)</b>	<b>T statistics ( O/STDEV )</b>	<b>P values</b>
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<b>Income x Clutter (Livability) -&gt; Life Satisfaction</b>	-0.016	-0.018	0.042	0.367	0.713
<b>Income x Clutter (Livability) -&gt; NegAffect</b>	-0.013	-0.016	0.043	0.310	0.757
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