

# Chapter 13

## Life and Workplace Satisfaction and Behaviour Change Ability—An Empirical Study in Japan



Kazuo Nishimura and Tadashi Yagi

**Abstract** This paper analyzes the attributes that would cause behaviour change based on responses to questions about behaviour change, examines how satisfaction with their life is associated with the respondents' behaviour change, and determines whether there would be any difference in their levels of satisfaction between those who can change their behaviour and those who cannot. Behaviour change has been studied in diverse fields and has gradually been attracting attention. However, we have yet to see much research that discusses the dependent attributes of people's behaviour change or to what extent behaviour change influences people's sense of satisfaction in life. In this research, we conducted a factor analysis of responses to surveys to identify behaviour change and examined the dependency of the obtained factors on age, sex, positive thinking, and the degree of self-determination. We also analyzed how behaviour change is associated with life and workplace satisfaction. Our findings revealed that sex, positive thinking, and the degree of self-determination affected all three behaviour change factors. Positive thinking had a positive effect on all three factors, while male dummy had a negative impact on all three factors. The self-determination index positively affected persistence in learning and malleability, but it had a negative impact on receptivity. Age affected only malleability, while male dummy had a positive impact. We have also examined how a person's ability to change their behaviour affected their satisfaction level in their life and workplace. Our findings showed that malleability, among the behaviour change abilities, played an important role in enhancing the satisfaction level in a person's life, and demonstrated a statistically significant positive effect on health, stress, income, and relationship with their partner. With regard to the satisfaction level in the workplace, the behaviour change abilities (persistence in learning, malleability, receptivity) had common effects on satisfaction with work environment, job discretion, peers at work, perception of doing a good job, their immediate supervisor, and job security; persistence in learning and malleability had a positive effect, whereas receptivity had a

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negative impact. On all these items, the strongest impact was made by persistence in learning, and a relatively weak effect was made by receptivity.

**Keywords** Behavior change · Persistence in learning · Malleability · Receptivity · Life satisfaction · Workplace satisfaction

## 1 Introduction

The term “behaviour change” was originally used in the medical field, where it referred to a change in a patient’s behaviour prompted by a medical professional. The prompting by the medical professional, however, is a trigger, not an enforcement. Unless patients accept the guidance given by the medical professional and change their way of thinking, their behaviour will not change. The spontaneity of behaviour change can be a concept applicable to a broad range of fields. Thus, we define the term “behaviour change” as “any spontaneous change in a person’s behaviour prompted by a trigger of some sort”, which we use to analyze a more universal range of behaviour changes. In economics, for instance, “behaviour change” may include the impact of advertisement on consumer behaviour or a change in consumer behaviour caused by a change in government policy such as an increase in consumption tax.

The feasibility of behaviour change may differ depending on individuals. For example, among those who wish to stop smoking for health reasons, some can while others cannot.

This chapter analyzes the attributes that would cause behaviour change based on responses to questions about behaviour change, examines how satisfaction with their life is associated with the respondents’ behaviour change, and determines whether there would be any difference in their levels of satisfaction between those who can change their behaviour and those who cannot.

Studies on behaviour change have mainly been conducted on subjects such as control of drug use and smoking, elimination of obesity, and prevention of lifestyle-related diseases. Research in behavioural economics uses the concept of hyperbolic discounts, which explains that people’s inability to change their behaviour stems from their desire for immediate rewards over higher-value delayed rewards (Fudenberg and Levine 2006; Gruber and Köszegi 2001; O’Donoghue and Rabin 1999).

In the past, behaviour change has been explained by the goal-setting theory (Edwin 1968), which argues that setting a clear goal rather than an ambiguous one and a difficult goal rather than an easy one, will bring higher motivation and better results. The transtheoretical model of behaviour change (see Prochaska et al. 1992) also discusses that it is necessary to make an appropriate approach for each of the five stages (that is, precontemplation, contemplation, preparation for action, action, and maintenance) to promote behaviour change.

More recent theories on behaviour change include the social-psychological behavioral theory (Goffman 2006) and the choice architecture theory (Loewenstein et al. 2015; Thaler and Sunstein 2008; Vlaev et al. 2016). The former tries to understand

behaviour change in the context of social relationships, whereas the latter provides a method using nudges to change people's behaviour in a predictable manner without intervention.

As explained above, behaviour change has been studied in diverse fields and has gradually been attracting attention. However, we have yet to see much research that discusses the dependent attributes of people's behaviour change or to what extent behaviour change influences people's sense of satisfaction in life.

In this research, we conducted a factor analysis of responses to surveys to identify behaviour change and examined the dependency of the obtained factors on age, sex, positive thinking, and the degree of self-determination. We also analyzed how behaviour change is associated with life and workplace satisfaction.

Section 2 of this chapter gives an outline of the survey data. In Sect. 3, we extracted the factors that constitute behaviour change by factor analysis and, in Sect. 4, we analyzed relationships between the ability to change behaviour and positive thinking, the degree of self-determination, and other items. In Sect. 5, we analyzed how behaviour change ability is related to the levels of life and workplace satisfaction. Section 6 summarizes our conclusion.

## 2 Outline of the Data

The data used in this study were obtained from the "Internet Survey on Living Environment and Happiness" and the "Additional Survey" to the "Internet Survey on Living Environment and Happiness" conducted through Rakuten Insight (former Rakuten Research) as part of the "Fundamental Research for Economic Growth and Productivity Improvement in Japan" at the Research Institute of Economy, Trade and Industry. The first survey was conducted from February 8, 2018, to February 13, 2018, and the additional survey from August 23, 2018, to September 3, 2018. These surveys were conducted on male and female individuals aged 20–69 years across Japan by allocating the number of samples to be collected according to sex, age, and the population composition of each prefecture.

In the first survey, the number of surveys delivered was 933,329; 33,598 responses were collected, for a response rate of 3.6%. In the additional survey, the number of surveys delivered was 20,005, and 16,000 responses were collected, for a response rate of 80%. We checked the collected samples for inconsistency and other faults and extracted only the data with high reliability. As a consequence, the number of collected samples used in our analysis totalled 20,005.

Data characteristics are summarized as follows. The sample size of the data set used in this study was 20,005, of which 3335 did not respond to the question about annual household income. Accordingly, the number of effective observations used in the analysis was 16,670. The number of non-responses to the question about annual personal income was 2359, resulting in 17,646 effective observations. The sample size, however, was reduced to 16,000, if we used the questions to which responses

were obtained in the additional survey. The distribution by sex was 50.2% males and 49.8% females, indicating a nearly equal number of male and female respondents.

### 3 Extraction of Behaviour Change Variables

In the additional survey, we asked questions about the extent of actions that the respondent would take with regard to behaviour change. We then extracted attributes that characterize behaviour change using principal component analysis based on the responses given using a five-point Likert scale.

Table 1 shows that three factors with eigenvalues greater than 1 are extracted by factor analysis (principal components method). It indicates that the first principal factor has the strongest explanatory power.

In Table 2, the questions that are closely related to the same principal factors are arranged together. The interpretation of the principal factors is given from the questions belonging to the same principal factors. Since the first principal factor has a strong correlation with the four questions asking the respondents whether they can persistently study or can properly learn if required at work, it can be interpreted as “persistence in learning”. The second principal factor has a strong correlation with the four questions asking the respondents whether they can voluntarily change their behaviour or can voluntarily take actions. This ability to take action has been named “malleability”. Meanwhile, the third principal factor has been named “receptivity”, since it has a strong correlation with the three questions asking the respondents whether they accept external prompting such as an influence of advertisements to take actions. In this chapter, accordingly, we interpret each of the extracted principal factors as “persistence in learning”, “malleability”, and “receptivity”.

Figure 1 shows the size of each of the three principal factors that constitute behaviour change ability by sex. Males exhibit higher persistence in learning, whereas females score higher in malleability. Receptivity is significantly higher for females.

### 4 Effects of the Degree of Self-Determination and Positive Thinking on Behaviour Change Ability

Since persistence in learning, for example, is considered to have a strong correlation with the conscientiousness of respondents, we can assume that the ability to change behaviour may be affected to some extent by the personality of respondents. Therefore, we included the Big Five personality traits, that is, conscientiousness, openness to experience, neuroticism, extraversion, and disagreeableness in the explanatory variable. We conducted a multiple regression analysis to identify the impact of attribute information such as personality factors, age, and sex, as well as of

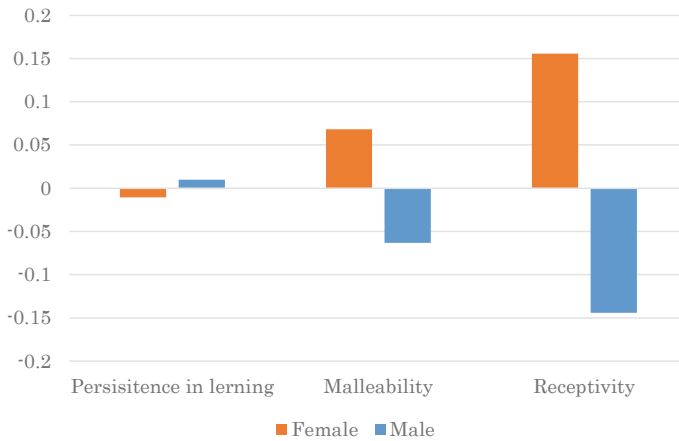
**Table 1** Results of factor analysis (principal component methods)

| Factor | Initial eigenvalues      |               |              |              | Sums of squared loadings after extraction |               |              |       | Sums of squared loadings after rotation |       |               |  |
|--------|--------------------------|---------------|--------------|--------------|---|---------------|--------------|-------|---|-------|---------------|--|
|        | Sums of squared loadings |               | Cumulative % |              | Sums of squared loadings after extraction |               | Cumulative % |       | Sums of squared loadings after rotation |       | Cumulative %  |  |
|        | Total                    | % of Variance | Total        | Cumulative % | Total                                     | % of Variance | Cumulative % | Total | % of Variance                           | Total | % of Variance |  |
| 1      | 4.545                    | 37.874        | 4.545        | 37.874       | 4.545                                     | 37.874        | 37.874       | 3.441 | 28.677                                  | 3.441 | 28.677        |  |
| 2      | 1.532                    | 12.764        | 1.532        | 50.639       | 1.532                                     | 12.764        | 50.639       | 2.071 | 17.262                                  | 2.071 | 45.939        |  |
| 3      | 1.05                     | 8.753         | 1.05         | 59.391       | 1.05                                      | 8.753         | 59.391       | 1.614 | 13.452                                  | 1.614 | 59.391        |  |
| 4      | 0.87                     | 7.247         |              | 66.638       |   |               |              |       |   |       |               |  |

**Table 2** Interpretation of principal factors (correlation with questions and factors)

| Question  | Persistence<br>(in learning) | Malleability | Receptivity |
|---|------------------------------|--------------|-------------|
| I can persistently study if I need to understand mathematical formulas for work, or other purposes  | 0.901                        | 0.144        | 0.093       |
| I can persistently study if I have to read mathematical books outside of your area of expertise for work or other reasons   | 0.894                        | 0.142        | 0.098       |
| I can persist in learning the manuals I need to learn on the job  | 0.869                        | 0.191        | 0.123       |
| I can learn English and other languages when I need to learn them for work or other reasons   | 0.692                        | 0.165        | 0.284       |
| If required to get up early in the morning for work or other reasons, I can go to bed early the night before  | 0.605                        | 0.353        | -0.001      |
| I can change my habits if I judge them to be bad  | 0.273                        | 0.682        | 0.065       |
| I do things that I hear are good for my health  | 0.122                        | 0.649        | 0.358       |
| I use stairs instead of escalators at railway stations  | 0.073                        | 0.649        | 0.018       |
| If a special tax is to be imposed on one of my luxury items (e.g. alcohol or cigarettes) on the grounds that it is bad for health, and the price increases by 20%, I will reduce my purchase of the item considerably | 0.154                        | 0.594        | 0.129       |
| I tend to buy goods influenced by advertisements  | -0.078                       | -0.021       | 0.805       |
| I read books recommended by my friends  | 0.299                        | 0.14         | 0.671       |
| I will make a donation if requested to do so for solving starvation problems in developing countries  | 0.125                        | 0.402        | 0.503       |

Note Highlighted cells indicate the questions those have strong correlation with factors



**Fig. 1** Difference in behaviour change ability between males and females

positive thinking and the degree of self-determination on the formation of the three behaviour change abilities.

Positive thinking was found as a factor that contributed to generating a sense of happiness and that the degree of self-determination was an important factor for determining a sense of happiness in our earlier survey on happiness (Nishimura and Yagi 2019).

The degree of positive thinking was determined by extracting the factors via factor analysis, adopting the principal factor method, and using 18 questions selected from the list of questions used by Hills and Argyle (2002). Table 3 shows the explanatory power of the factors extracted by factor analysis in terms of percentage of variance and cumulative percentage of initial eigenvalues.

In the principal factor analysis, the percentage of variance was equal to the cumulative percentage, since there was only one factor. Table 4 gives the correlation coefficients between the responses to each of the 18 questions and the factor.

In this survey, we asked the questions: “Who decided on the high school you would attend?” and “Who decided on the university you would attend?” The respondents answered these questions by selecting the most appropriate answer from five choices: (1) I followed the suggestions of people around me, although the school was not my choice at all; (2) I followed the suggestions of people around me, although I was not very willing to attend that school; (3) I am not sure; (4) I decided as I wished, to some extent; and (5) I decided as I wished. From those who did not go on to university, we also obtained responses as to the degree of self-determination when they decided to go to vocational school or junior college and when they decided not to go to university. The average scores on a 5-point scale were: 4.35 for those who did not graduate from university, 3.85 for graduates of low-difficulty universities, 4.09 for graduates of medium-difficulty universities, and 4.41 for graduates of high-difficulty

**Table 3** Extraction sums of squared loadings

| Factor | Initial eigenvalues |               | Extraction sums of squared loadings |               | Rotation sums of squared loadings |               |
|--------|---------------------|---------------|-------------------------------------|---------------|-----------------------------------|---------------|
|        | Total               | % of Variance | Total                               | % of Variance | Total                             | % of Variance |
| 1      | 9.974               | 34.392        | 9.449                               | 32.584        | 6.593                             | 22.735        |
|        |                     | 34.392        |                                     | 32.584        |                                   | 22.735        |



**Table 4** Factor matrix after rotation

|   | Positive thinking |
|---|-------------------|
| I can have a positive influence on things     | 0.7               |
| I always encourage other people               | 0.688             |
| I always work on things earnestly             | 0.684             |
| I can enjoy almost anything                   | 0.66              |
| I can see beautiful elements in things        | 0.657             |
| I am very active                              | 0.656             |
| Life is wonderful                             | 0.647             |
| Life is very fruitful                         | 0.645             |
| I feel I can challenge anything               | 0.63              |
| I am kind to almost everybody                 | 0.619             |
| I laugh a lot                                 | 0.583             |
| I am very happy                               | 0.531             |
| I am quite satisfied with my life             | 0.51              |
| I can find time to do what I want to do       | 0.449             |
| I am often feeling good and in a merry mood   | 0.444             |
| It is not difficult for me to make a decision | 0.433             |
| I have an agile mind and am very careful      | 0.421             |
| I am very much interested in other people     | 0.406             |

universities. Those who did not graduate from university showed that their degree of self-determination was similar to the high degree of difficulty they experienced.

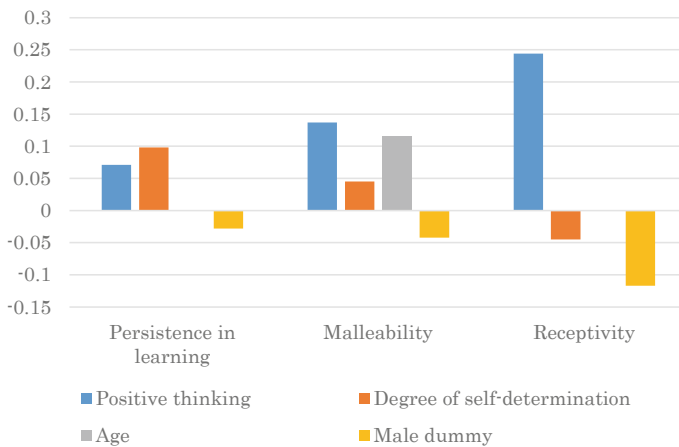
We also asked the question: “Did you decide on your first job by yourself? Please choose the one that best applies to your case.” The respondents answered this question by selecting one answer from the following six choices: (1) I followed the suggestions of people around me, although it was not my choice at all; (2) I followed the suggestions of people around me, although I was not very willing to join the company; (3) I am not sure; (4) I decided as I wished, to some extent; (5) I decided as I wished; and (6) I have never been employed. We dealt with those who chose answer (6) as missing values.

We conducted a factor analysis of the questions about self-determination at three stages: “advancing from junior high school to high school”, “going to university from high school”, and “first employment” to create self-determination factors. We call the factor score (the value computed by the factor analysis) the self-determination index.

Table 5 shows the results of a multivariable regression analysis of the effects of personality factors, age, sex, positive thinking, and the degree of self-determination on behaviour change ability. Figure 2 shows to what extent the ability of behaviour change is explained by positive thinking, the degree of self-determination, and age when effects of personality factors are deleted.

**Table 5** Analysis of factors determining behaviour change ability (standardized coefficient)

|                          | Persistence in learning |         | Malleability         |         | Receptivity          |         |
|--------------------------|-------------------------|---------|----------------------|---------|----------------------|---------|
|                          | Standard coefficient    | p-value | Standard coefficient | p-value | Standard coefficient | p-value |
| Conscientiousness        | 0.187                   | 0.000   | 0.062                | 0.003   | -0.092               | 0.000   |
| Openness to experience   | 0.09                    | 0.000   | 0.032                | 0.079   | 0.043                | 0.017   |
| Neuroticism              | -0.145                  | 0.000   | -0.009               | 0.553   | 0.109                | 0.000   |
| Extraversion             | 0.006                   | 0.732   | 0.01                 | 0.603   | 0.047                | 0.012   |
| Disagreeableness         | -0.035                  | 0.021   | -0.082               | 0.000   | 0.005                | 0.721   |
| Positive thinking        | 0.071                   | 0.005   | 0.137                | 0.000   | 0.244                | 0.000   |
| Self-determination index | 0.098                   | 0.000   | 0.045                | 0.003   | -0.045               | 0.003   |
| Age                      | -0.015                  | 0.326   | 0.116                | 0.000   | -0.01                | 0.509   |
| Male dummy               | -0.028                  | 0.06    | -0.042               | 0.007   | -0.117               | 0.000   |



**Fig. 2** Analysis of factors determining behaviour change ability

Factors that affected persistence in learning were positive thinking, the degree of self-determination, and the male dummy variable (hereafter referred to as “male dummy”). While positive thinking and the degree of self-determination had a positive effect, the male dummy variable had a negative impact. The intensity of the effect in descending order was: self-determination index, positive thinking, and male dummy variable.

Meanwhile, the factors that affected malleability were positive thinking, the degree of self-determination, age, and male dummy variable. Positive thinking, the degree of self-determination, and age had a positive impact, whereas male dummy variable had a negative impact. The intensity of the effect in descending order was: positive

thinking, age, degree of self-determination, and male dummy variable. Factors that affected receptivity, on the other hand, were positive thinking, the degree of self-determination, and male dummy. Positive thinking had a positive effect, while the degree of self-determination and male dummy had a negative impact. The intensity of the effect in descending order was: positive thinking, male dummy variable, and degree of self-determination.

Positive thinking affected all three abilities of behaviour change in a positive way, showing an overwhelmingly strong impact, especially on receptivity. This suggests that those with a positive thinking attitude flexibly accept advice from others and that they are willing to change their behavioural patterns.

While the degree of self-determination also affected all three behaviour change abilities, it had a negative impact solely on receptivity. This suggests that those with a high degree of self-determination are unwilling to take advice from others.

Age had an effect only on malleability, which indicates that the possibility to change behaviour patterns increases with age.

Male dummy negatively affected all three behaviour change abilities, suggesting that females have a higher ability to change their behaviour than males.

## **5 Behaviour Change, Health, and Satisfaction in Life and the Workplace**

### **5.1 Survey Items**

In this survey, we asked about health conditions, stress, satisfaction in life, and satisfaction in the workplace using the questions below:

- i. How are your current health conditions? Choices for answer: (1) bad, (2) fairly bad, (3) neither bad nor good, (4) fairly good, and (5) good.
- ii. How do you rate the overall level of stress you feel in your daily life? Please select the option closest to your level of stress from the following numbers (0) to (10). Choices for answer: (0) no stress and (10) Feeling severe stress.
- iii. To what extent are you satisfied with the following aspects of your life? Item 1: household income/revenue; Item 2: household assets/savings; Item 3: relationship with your spouse (husband or wife) or boyfriend/girlfriend. Choices for answer: (1) dissatisfied, (2) fairly dissatisfied, (3) neither dissatisfied nor satisfied, (4) fairly satisfied, and (5) satisfied.
- iv. To what extent are you satisfied with your current work in terms of the following items? Item 1: work environment; Item 2: discretion in ways to carry out your work; Item 3: co-workers; Item 4: recognition of doing a good job; Item 5: your immediate superior; Item 6: responsibility given to you; Item 7: your wage/salary; Item 8: opportunities for you to use your abilities; Item 9: relationships between the management and employees; Item 10: opportunities for

your promotion; Item 11: the way your organization is operated; Item 12: attention paid to your proposals; Item 13: your working hours; and Item 14: your job security. Choices for answer: (1) dissatisfied, (2) fairly dissatisfied, (3) neither dissatisfied nor satisfied, (4) fairly satisfied, and (5) satisfied

Based on the answers to these questions, we aimed to clarify how the degree of behaviour change ability affects the satisfaction level in a person's health, life, and workplace, using a multiple regression analysis. This analysis included the Big Five personality traits as explanatory variables to eliminate personality factors.

## ***5.2 Effects on Health and Satisfaction in Life***

As shown in Table 6, malleability had the strongest impact other than age on health conditions. This suggests that those who can change their life habits as required for achieving better health are able to maintain their good health.

Figure 3 shows behavior change abilities and satisfaction with health and life. With regard to stress, our findings showed that stress decreases with age and that males felt less stress than females did. Higher malleability led to less stress and higher receptivity caused more stress. These findings suggest that those who can think flexibly and change their behaviour are able to reduce stress and that those who are liable to be influenced by others feel more stress.

All three behaviour change abilities positively affected the level of satisfaction with household income; those who had higher behaviour change abilities showed a higher level of satisfaction with their income.

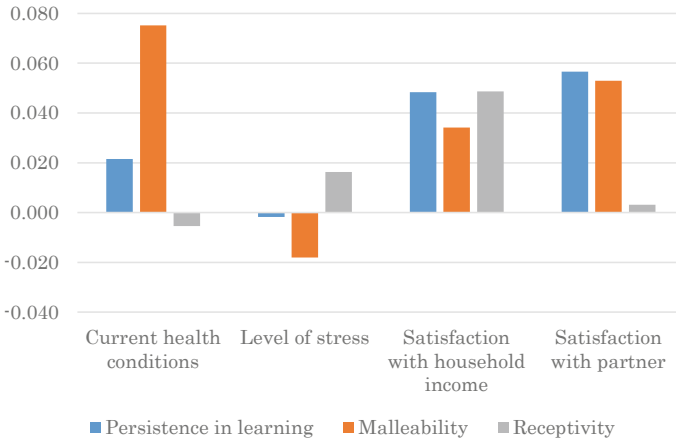
With respect to satisfaction with their partner, while receptivity among the behaviour change abilities had no effect on it, persistence in learning and malleability did have an impact. This indicates that those who understand their partner and can change their behaviour to improve their relationship feel a high level of satisfaction with their partner. Our findings also suggest that those who are liable to be influenced by others may increase their dissatisfaction with their partner, failing to feel satisfied with their partner

## ***5.3 Effects on Satisfaction in Workplace***

Tables 7 and 8, and Figs. 4 and 5 show the effects of behaviour change abilities on a person's satisfaction in the workplace. There is a common impact of ability to change behaviours on satisfaction with the work environment, job discretion, peers at work, perception of doing a good job, immediate supervisors, and job security, with persistence in learning and malleability having a positive impact and receptivity having a negative effect. On each of these items, the strongest impact was made by persistence in learning, and a relatively weak effect by receptivity. This indicates

**Table 6** Multiple regression analysis of effects on health and satisfaction in life Results (standardized coefficient)

|                         | Current health conditions |         | Level of stress          |         | Satisfaction with household income |         | Satisfaction with the partner |         |
|-------------------------|---------------------------|---------|--------------------------|---------|------------------------------------|---------|-------------------------------|---------|
|                         | Standardized coefficient  | p-value | Standardized coefficient | p-value | Standardized coefficient           | p-value | Standardized coefficient      | p-value |
|                         | Age                       | -0.136  | 0.000                    | -0.108  | 0.000                              | 0.031   | 0.000                         | 0.038   |
| Male dummy              | -0.009                    | 0.218   | -0.058                   | 0.000   | -0.019                             | 0.015   | 0.066                         | 0.000   |
| Conscientiousness       | 0.119                     | 0.000   | -0.016                   | 0.030   | 0.052                              | 0.000   | 0.082                         | 0.000   |
| Openness to experience  | 0.021                     | 0.006   | -0.077                   | 0.000   | 0.022                              | 0.006   | 0.015                         | 0.083   |
| Neuroticism             | -0.164                    | 0.000   | 0.204                    | 0.000   | -0.127                             | 0.000   | -0.050                        | 0.000   |
| Extraversion            | 0.233                     | 0.000   | -0.206                   | 0.000   | 0.131                              | 0.000   | 0.156                         | 0.000   |
| Disagreeableness        | -0.135                    | 0.000   | 0.209                    | 0.000   | -0.057                             | 0.000   | -0.118                        | 0.000   |
| Persistence in learning | 0.022                     | 0.006   | -0.002                   | 0.820   | 0.048                              | 0.000   | 0.057                         | 0.000   |
| Malleability            | 0.075                     | 0.000   | -0.018                   | 0.016   | 0.034                              | 0.000   | 0.053                         | 0.000   |
| Receptivity             | -0.005                    | 0.477   | 0.016                    | 0.029   | 0.049                              | 0.000   | 0.003                         | 0.718   |



**Fig. 3** Behaviour change abilities and satisfaction with health and life

that those who have higher persistence and can transform their behaviour in the right direction have a higher level of satisfaction in the workplace and that those who are more liable to be influenced by others have a lower level of satisfaction.

## 6 Conclusion

In this study, we broke down behaviour change into three factors (that is, persistence in learning, malleability, and receptivity) based on the data from surveys, to analyze the ability of people to change their behaviour. We then studied how each of these factors is dependent on sex, age, positive thinking, and the degree of self-determination. Our findings revealed that sex, positive thinking, and the degree of self-determination affected all three behaviour change factors. Positive thinking had a positive effect on all three factors, while male dummy had a negative impact on all three factors. The self-determination index positively affected persistence in learning and malleability, but it had a negative impact on receptivity. Age affected only malleability, while male dummy had a positive impact.

We have also examined how a person’s ability to change their behaviour affected their satisfaction level in their life and workplace. Our findings showed that malleability, among the behavior change abilities, played an important role in enhancing the satisfaction level in a person’s life, and demonstrated a statistically significant positive effect on health, stress, income, and relationship with their partner. With regard to the satisfaction level in the workplace, the behaviour change abilities (persistence in learning, malleability, receptivity) had common effects on satisfaction with work environment, job discretion, peers at work, perception of doing a good job, their immediate supervisor, and job security; persistence in learning and malleability

**Table 7** Results of multiple regression analysis of effects on satisfaction in the workplace (1) (standardized coefficient)

|                         | The work environment     |         | Job discretion           |         | Peers at work            |         | Perception of doing a good job |         | Immediate supervisors    |         |
|-------------------------|--------------------------|---------|--------------------------|---------|--------------------------|---------|--------------------------------|---------|--------------------------|---------|
|                         | Standardized coefficient | p-value | Standardized coefficient | p-value | Standardized coefficient | p-value | Standardized coefficient       | p-value | Standardized coefficient | p-value |
| Age                     | 0.040                    | 0.000   | 0.081                    | 0.000   | -0.002                   | 0.832   | 0.065                          | 0.000   | -0.033                   | 0.001   |
| Male dummy              | -0.006                   | 0.532   | -0.006                   | 0.549   | -0.019                   | 0.044   | -0.029                         | 0.001   | 0.012                    | 0.208   |
| Conscientiousness       | 0.113                    | 0.000   | 0.146                    | 0.000   | 0.105                    | 0.000   | 0.189                          | 0.000   | 0.079                    | 0.000   |
| Openness to experience  | 0.026                    | 0.006   | 0.067                    | 0.000   | 0.030                    | 0.001   | 0.087                          | 0.000   | 0.039                    | 0.000   |
| Neuroticism             | -0.053                   | 0.000   | -0.054                   | 0.000   | 0.009                    | 0.357   | -0.080                         | 0.000   | -0.017                   | 0.076   |
| Extraversion            | 0.135                    | 0.000   | 0.163                    | 0.000   | 0.210                    | 0.000   | 0.225                          | 0.000   | 0.146                    | 0.000   |
| Disagreeableness        | -0.080                   | 0.000   | -0.060                   | 0.000   | -0.143                   | 0.000   | -0.120                         | 0.000   | -0.100                   | 0.000   |
| Persistence in learning | 0.077                    | 0.000   | 0.080                    | 0.000   | 0.072                    | 0.000   | 0.070                          | 0.000   | 0.072                    | 0.000   |
| Malleability            | 0.043                    | 0.000   | 0.031                    | 0.001   | 0.049                    | 0.000   | 0.037                          | 0.000   | 0.033                    | 0.000   |
| Receptivity             | -0.007                   | 0.444   | -0.031                   | 0.001   | -0.023                   | 0.013   | -0.016                         | 0.078   | -0.011                   | 0.234   |

**Table 8** Results of multiple regression analysis of the effects on satisfaction in the workplace (2) (standardized coefficient)

|                         | Given responsibility     |         | Wage/Salary              |         | Opportunities to use abilities |         | Opportunities for promotion |         | Job security             |         |
|-------------------------|--------------------------|---------|--------------------------|---------|--------------------------------|---------|-----------------------------|---------|--------------------------|---------|
|                         | Standardized coefficient | p-value | Standardized coefficient | p-value | Standardized coefficient       | p-value | Standardized coefficient    | p-value | Standardized coefficient | p-value |
| Age                     | 0.048                    | 0.000   | 0.035                    | 0.000   | 0.056                          | 0.000   | -0.020                      | 0.037   | -0.052                   | 0.000   |
| Male dummy              | -0.010                   | 0.271   | -0.015                   | 0.110   | -0.015                         | 0.111   | 0.047                       | 0.000   | 0.074                    | 0.000   |
| Conscientiousness       | 0.162                    | 0.000   | 0.029                    | 0.003   | 0.128                          | 0.000   | 0.036                       | 0.000   | 0.103                    | 0.000   |
| Openness to experience  | 0.057                    | 0.000   | 0.016                    | 0.106   | 0.036                          | 0.000   | 0.032                       | 0.001   | -0.028                   | 0.003   |
| Neuroticism             | -0.060                   | 0.000   | -0.079                   | 0.000   | -0.055                         | 0.000   | -0.069                      | 0.000   | -0.031                   | 0.001   |
| Extraversion            | 0.171                    | 0.000   | 0.117                    | 0.000   | 0.157                          | 0.000   | 0.118                       | 0.000   | 0.137                    | 0.000   |
| Disagreeableness        | -0.102                   | 0.000   | -0.049                   | 0.000   | -0.086                         | 0.000   | -0.064                      | 0.000   | -0.078                   | 0.000   |
| Persistence in learning | 0.090                    | 0.000   | 0.053                    | 0.000   | 0.068                          | 0.000   | 0.039                       | 0.000   | 0.071                    | 0.000   |
| Malleability            | 0.046                    | 0.000   | 0.016                    | 0.091   | 0.032                          | 0.001   | 0.017                       | 0.070   | 0.051                    | 0.000   |
| Receptivity             | -0.020                   | 0.033   | 0.026                    | 0.006   | -0.028                         | 0.002   | 0.007                       | 0.442   | -0.010                   | 0.297   |



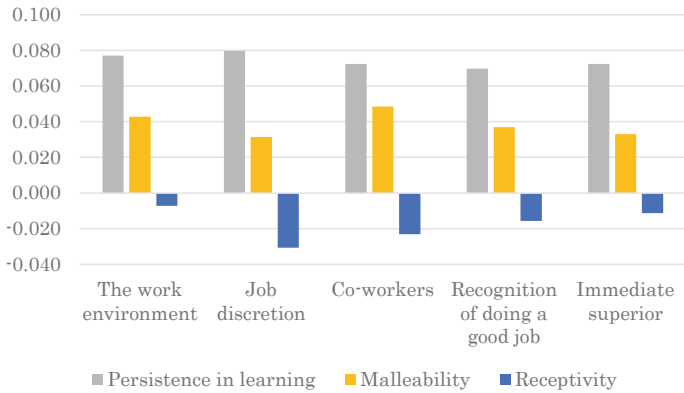


Fig. 4 Behaviour change abilities and satisfaction in the workplace (1)

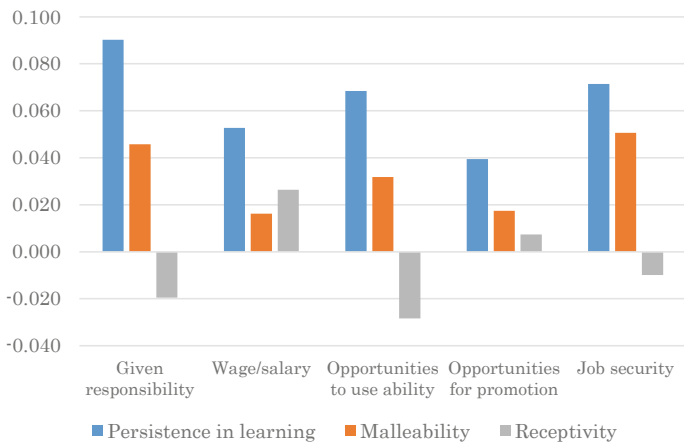


Fig. 5 Behaviour change abilities and satisfaction in the workplace (2)

had a positive effect, whereas receptivity had a negative impact. On all these items, the strongest impact was made by persistence in learning, and a relatively weak effect was made by receptivity.

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