

Sustainable Consumption in Terms of Subjective Well-being in Asia

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Abstract

This study presents an overview of our research on the association between consumption and subjective well-being (SWB) to suggest implications for sustaining SWB within the context of environmentally sustainable consumption. Future environmental burdens, such as reaching planetary boundaries, require us to suppress overconsumption. For developed countries, where the population consumes disproportionately more resources, considering how to sustain SWB even if people reduce their consumption levels is necessary. For developing countries, where people are increasing consumption as their economies develop, considering how to realize high SWB while considering future environmental restraints is imperative. Therefore, for both developed and developing countries, improving SWB-per-unit consumption is important. We conducted five surveys in rural and urban Vietnam and Japan from 2016 to 2021. Our estimation results suggest the following: (1) Paying attention to relational consumption rather than material consumption is important; (2) for material consumption, a sharing economy based on strong social capital is efficient; and (3) for material consumption, individuals who take better care of their possessions exhibit increased SWB-per-unit material consumption. We conclude that having individuals develop an attachment to material goods and value social capital is requisite for improving SWB through material and relational consumption.

Key words: material consumption, relational consumption, subjective well-being, sustainable consumption

1. Introduction

If developing countries could emulate the current consumption patterns of developed countries, the entire world would be on equal footing regarding consumer behavior. However, this scenario could exacerbate the increasing global environmental burden. Furthermore, if consumption levels in developed countries are not reduced, existing problems will only be aggravated. To realize sustainable global consumption (as advocated in the ongoing discourse on planetary boundaries), developed countries' current consumption levels and developing countries' expected future consumption levels must be reduced.

In this study, we investigated whether a lifestyle providing optimal and sustainable utility to consumers

would be feasible for developed and developing countries. If such a lifestyle can be clearly defined, a viable consensus on sustainable consumption may be realized. Moreover, establishing that an increase in consumption is not necessarily correlated with an increase in subjective well-being (SWB) may suppress rampant consumption.

2. Method

Given the limit on the absolute level of material consumption implied by planetary boundaries, individuals in developed countries must consider how to decrease their absolute level of material consumption. As shown in Fig. 1, if the current relationship between consumption and SWB in developed countries corresponds to Path B, a decrease in consumption could lead to significant

decrease in their SWB. Therefore, a move from Path B to Path A is required, as indicated by the arrow in Fig. 1. Conversely, in developing countries, individuals expect SWB improvements to accompany economic growth. To suppress overconsumption and keep consumption levels below planetary boundaries, we need to improve individuals' SWB-per-unit consumption. This could be achieved by changing from Path B to Path A. This would enable consumption within planetary boundaries to avert deterioration in SWB when consumption levels increase along with economic growth. Therefore, a move from Path B to Path A is also needed for developing countries. Thus, to realize Path A, increasing SWB-per-unit consumption is necessary, as represented by the arrow in Fig. 1.

To this end, one important task is classifying consumption. If individuals experience a higher degree of SWB by consuming one product rather than another at the same cost, they will achieve greater SWB. Studies have reported that social capital exerts a significantly positive influence on SWB. Further, Bjørnskov (2003) reports that social capital affects happiness to a greater degree compared to income at least in developed countries. Thus, relational goods or consumption may exert a significant influence on SWB. Essentially, by engaging in consumption involving social interaction, the consumer may simultaneously experience greater satisfaction related to social capital and a corresponding increase in SWB.

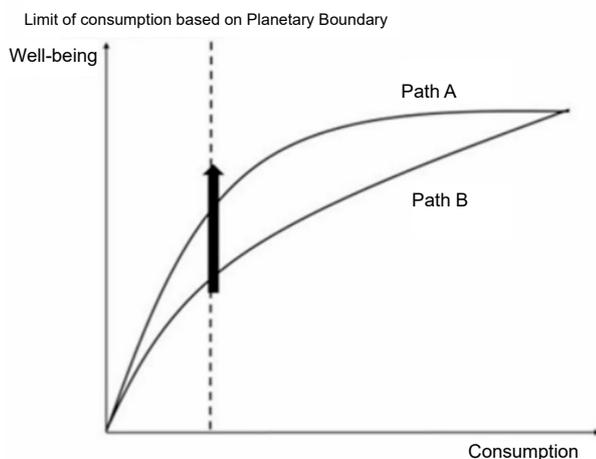


Fig. 1 Effect of decreasing or increasing consumption levels on SWB based on planetary boundaries. Source: Tsurumi et al. (2021a).

Because the environmental load from relational consumption is not necessarily insubstantial, we must be careful not to equate an increase in consumption with a decrease in environmental load. However, if the correlation between the completely solitary consumption of goods and an increase in SWB can at least be affirmed as difficult to establish, we can begin investigating whether such goods should be unwelcome in the future. We have focused not only on the total amount of consumption expenditure and types of consumption (i.e., material and relational consumption) but also on individuals' various ways of thinking and beliefs, which include the principle that it is best to lead a simple life with minimal material possessions, belief in the Confucian teaching that "a contented mind is a perpetual feast," Maslow's hierarchy of needs (Love), environmental ethics, and attachment to material goods. These beliefs can affect the relationship between consumption and SWB and whether high SWB can be achieved through reduced consumption.

To examine the relationship between consumption and SWB, we present the following equation:

$$SWB_i^k = \varphi_1 + f(\text{consumption}_i) + \sum_j \alpha_j X_{ij} + \varepsilon \quad \dots (1)$$

where i represents the individual and k represents the SWB indicator of type k , with k being any of the following five types: the Cantril Ladder, life satisfaction, subjective happiness, affect balance and *eudaimonia*. φ_1 is a constant. The main independent variable, consumption_i , represents consumption of i (total consumption or both material and relational consumption). X_{ij} represents control variables used in prior SWB studies (i.e., age, gender, level of subjective health, education, marriage and having children). Furthermore, as consumption expenditure is reported per household, we also control for the number of people in the household. Finally, α_j represents coefficients, and ε is the uncorrelated error term. To identify the different functional forms of consumption clearly, we utilized nonparametric functions for consumption. Regarding the other explanatory variables, we accounted for parametric functions and applied a semiparametric regression. Five surveys were conducted from 2017 to 2021, as shown in Table 1.

Table 1 Our original surveys.

	Survey period	Methods	Country/region	Observations
Survey 1	March 2017	Internet survey	Japan (nationwide)	N = 13,690 (valid responses: 9,635)
Survey 2	March 2018	Internet survey	Vietnam (urban area)	N = 2,218 (valid responses: 1,370)
Survey 3	March 2019	Face-to-face survey	Vietnam (rural area: Thieu Ngoc)	N = 2,052 (valid responses: 1,921)
Survey 4	March 2020 (follow-up survey of survey 3)	Face-to-face survey	Vietnam (rural area: Thieu Ngoc and Darsal)	Thieu Ngoc: N = 1,824 (valid responses 1,250), Darsal: N = 3,043 (valid responses 2,435)
Survey 5	November 2020, March 2021 (follow-up survey to Survey 1)	Internet survey	Japan (nationwide)	November 2020 (N = 2,500; valid responses: 1,639), March 2021 (N = 3,214; valid responses: 2,748)

Table 2 Main survey questions.

		Survey question
SWB	<i>Cantril ladder</i>	Please imagine a ladder with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you, while the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say that you stand at this time? Responses are given on an integer scale from 0 to 10.
	<i>Life satisfaction</i>	Overall, how satisfied are you with your life? Responses are given on an integer scale from 1 (“not at all satisfied”) to 5 (“completely satisfied”).
	<i>Subjective happiness</i>	Overall, how happy are you with your life? Responses are given on an integer scale from 1 (“unhappy”) to 5 (“very happy”).
	<i>Eudaimonia</i>	Overall, to what extent do you feel that the things you do in your life are worthwhile? Responses are given on an integer scale from 0 (“not at all worthwhile”) to 10 (“completely worthwhile”).
	<i>Affect balance (within a week)</i>	How often have you felt or experienced the following feelings or actions? Please answer in terms of a week. Positive affect: pleasure, enjoyment, smile. Negative affect: anger, sadness. Four-step evaluation; 4 = “often,” 3 = “sometimes,” 2 = “rarely,” and 1 = “not at all.” A balance of five affect categories derived from the average values of positive affect categories minus those of negative affect categories.
	<i>Household income (US\$)</i>	Please tell us your yearly household income.
	<i>Total consumption (US\$)</i>	Approximately, how much does your household spend monthly on consumption?
	<i>Material consumption (US\$)</i>	What is the average monthly amount spent in your household to purchase “goods” (electrical appliances, furniture, clothes, shoes, publications and other sundries, excluding expenditure related to housing, cars and bikes)?
	<i>Relational consumption (US\$)</i>	What is the average monthly amount spent in your household on “consumption relating to interactions with your family, relatives, friends and acquaintances” (e.g., travel, gifts, dining with them in your own home or outside, excluding expenditure related to housing, cars and bikes)?

Table 3 Our five analyses

	Theme	Data	Publication
Analysis 1	Relationship between consumption and SWB in Japan	Survey 1	Tsurumi et al. (2020b)
Analysis 2	Effects of “way of thinking and belief” on the relationship between consumption and SWB in Japan	Survey 1	Tsurumi et al. (2020a)
Analysis 3	Relationship between consumption and SWB in urban and rural Vietnam	Surveys 2, 3, and 4	Tsurumi et al. (2021b)
Analysis 4	Effects of attachment to material goods on the relationship between consumption and SWB: Evidence from rural Vietnam	Survey 4	Tsurumi et al. (2020c)
Analysis 5	Relationship between consumption and SWB in Japan: Comparison of before and during the COVID-19 pandemic	Surveys 1 and 5	Tsurumi et al. (2021a; 2021c)

Table 2 presents the main survey questions. We conducted five types of analyses, which are summarized in Table 3. We present an overview of their results in the next chapter.

3. Results

3.1 Analysis 1: Relationship between Consumption and SWB in Japan (Tsurumi et al., 2020b)

Figure 2 presents simplified estimation results for the relationship between monthly household total consumption expenditure and SWB. We found that total consumption contributed to life evaluation (life satisfaction and the Cantril ladder), while emotional well-being (affect balance) had a certain threshold. The definitions of total monthly household consumption expenditure and SWB are presented in Table 2. Figure 2 implies that increasing total consumption could improve individuals’ life evaluation, which makes mitigating

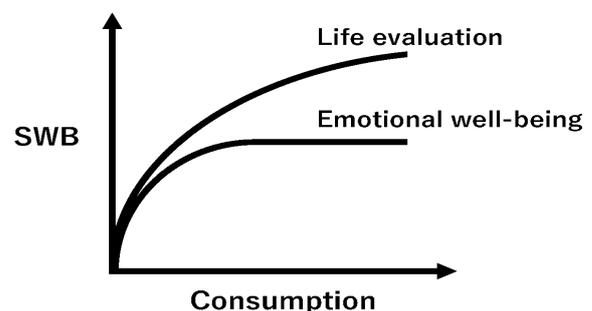


Fig. 2 Consumption and SWB (Japan). Based on the results of Tsurumi et al. (2020b).

Note: Vertical line corresponds to life evaluation (life satisfaction and the Cantril ladder) and emotional well-being (affect balance).

rampant consumption difficult.

Figure 3 shows simplified estimation results of the relationship between material consumption and SWB, and that between relational consumption and SWB. The definitions of both material consumption and relational

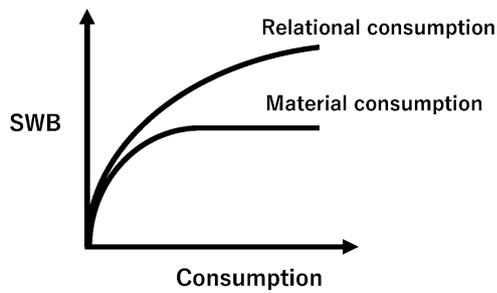


Fig. 3 Relational and material consumption and SWB (Japan). Based on the results of Tsurumi et al. (2020b). Note: Vertical line corresponds to both life evaluation and emotional well-being.

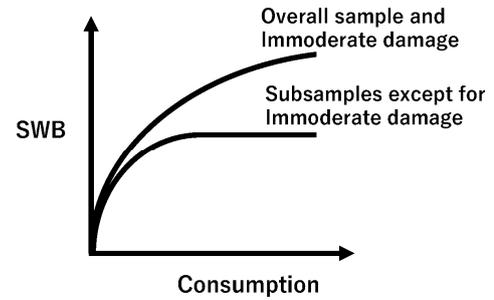


Fig. 4 Consumption and SWB in Japan (Overall sample and subsamples). Based on the results of Tsurumi et al. (2020a). Note: Vertical line corresponds to life evaluation (life satisfaction).

Table 4 Definitions of subsamples.

Subsample	Definitions
Subsample A	Which of the following statements best describes your “ideal life”? Please select all options (as many as you wish) describing your ideal life (sample selection “Living a simple life with minimal material possessions”: N = 2752).
Subsample B	Question: “A contented mind is a perpetual feast” is a Confucian teaching. Basically, “Human desires are endless, but a person who is satisfied living within his means and does not crave for more is happy and rich. A person who is pleased with today and has no complaints about the present is blessed with a life of contentment.” Do you believe in this teaching? (sample selection “I believe in it”: N = 3,541)
Subsample C	Regarding Maslow’s hierarchy of needs, how satisfied are your needs at stage 3 (Love)? (sample selection: “Satisfied”)
Subsample D-1, D-2, D-3, and D-4	Please tell us whether you agree with the following: D-1. Irreversibility: Once destroyed, the natural environment can never be restored to its prior state (sample selection “Agree”: N = 3,027). D-2. Intergenerational equity: We must pass on to future generations the natural and cultural legacy we have received from prior generations (sample selection “Agree”: N = 2,967). D-3. Intergenerational equity (with the cost of sacrifices): Even at the cost of sacrifices from our generation, we must leave behind a natural environment in good shape for future generations (sample selection “Agree”: N=1,836). D-4. Immoderate damage: If things go on this way, there will be enormous environmental destruction and disasters in the future (sample selection “Agree”: N = 3,438). Sources: Ekins et al. (2003) and Ekins (2014)

consumption are shown in Table 2. We found that relational consumption contributed to all measures of SWB without clear upper bounds. In contrast, material consumption contributed to all measures of SWB only up to certain thresholds.

3.2 Analysis 2: Effects of “Way of Thinking and Belief” on Relationship between Consumption and SWB in Japan (Tsurumi et al., 2020a)

In Analysis 2, we investigated the relationship between consumption and SWB using the subsamples shown in Table 4. This study aimed to investigate whether belief or environmental ethics affect the relationship between consumption and SWB.

Figure 4 presents simplified estimation results. The results show that, although there are no SWB (life satisfaction) satiation thresholds for total consumption among people in Japan on average, there are satiation thresholds among some subsamples. A simplified SWB (life satisfaction) satiation point for these subsamples, exclusive of “Subsample D-4: Immoderate damage,” is illustrated in Fig. 4. The implication is that those subsamples have no incentive for increasing their total

consumption after a certain threshold, which may suppress overconsumption.

No satiation threshold exists for individuals who have environmental ethics concerns, such as fear of causing “immoderate damage.” Thus, we need to acknowledge that, even if we merely recognize the gravity of environmental problems (i.e., “immoderate damage”), changing our relationship between consumption and SWB is difficult. Additionally, our estimation results imply that individuals who professed to fulfill Maslow’s hierarchy of needs (Love) may be connected with those who place great importance on future generations’ wellbeing. Thus, the concepts of irreversibility and intergenerational equity could be similar to the concept of granting great importance to social capital or future generations, which may also suppress overconsumption.

3.3 Analysis 3: Relationship between Consumption and SWB in Urban and Rural Vietnam (Tsurumi et al., 2021c)

Analyses 1 and 2 suggest that (1) in Japan, total consumption contributes to better life evaluations without clear upper bounds; (2) however, a SWB saturation point

for total consumption among individuals who have “certain ways of thinking and belief” exclusive of belief in “immoderate damage” is evident in Fig. 4; (3) relational consumption contributes to all SWB measures with no clear upper bounds, while material consumption contributes to all SWB measures only up to certain thresholds.

The above results, however, may be specific to developed countries. Therefore, Analysis 3 reveals the relationship between material and relational consumption and SWB in rural and urban Vietnam. The simplified estimation results for urban Vietnam shown in Fig. 5 suggest that neither the relationship between material consumption and SWB nor the relationship between relational consumption and SWB has any statistically significant correlation. This may imply that SWB saturation exists concerning material consumption even in developing countries. Moreover, it may imply that people in urban Vietnam place little importance on social capital. Conversely, the simplified estimation results in rural Vietnam shown in Fig. 6, suggest that relational consumption contributes to SWB without clear bounds. This finding implies that people in rural Vietnam place greater importance on social capital.

We also found a negative correlation between material consumption and SWB. Our additional analysis shows that individuals who exhibited a high frequency of bartering have relatively high SWB. Overall, our estimation results imply that SWB saturation vis-à-vis material consumption can be observed even in developing

countries’ rural areas. Additionally, our results show that relational consumption and material consumption can significantly increase individuals’ SWB if they have strong connections with their neighbors or if they engage in bartering. Our findings imply that a sharing economy with strong social capital could be key to sustainable consumption.

3.4 Analysis 4: Effects of Attachment to Material Goods on Relationship between Consumption and SWB: Evidence from Rural Vietnam (Tsurumi et al., 2020c)

In Analysis 3, we found that increased material consumption was not associated with increased SWB in rural Vietnam. If an increase in material consumption diminishes SWB (as with economic development), economic growth could have a negative effect on SWB. Thus, considering how to increase SWB through material consumption is necessary. Some individuals tend to use the same material goods more extensively than others. These particular individuals consume fewer material inputs, other things being equal. In Analysis 4, we investigate whether these individuals are happier. To examine individuals’ characteristics, we asked the following: “Please select all applicable items. – I want to utilize “goods” and look after them for as long as possible (attachment dummy = 1: applicable; attachment dummy = 0: not applicable).” We then divided our sample into Group A (with attachment) and Group B (without attachment). Group A corresponded to “attachment dummy=1” and Group B corresponded to “attachment dummy=0.”

Figure 7 shows simplified estimation results. We found that for Group A (individuals who take better care of their possessions), increased consumption is linked to increased SWB (life satisfaction), whereas for Group B (individuals who do not take good care of their possessions), increased consumption is linked to decreased SWB. This implies that a lifestyle wherein individuals take better care of their possessions increases SWB-per-unit consumption. This finding also has a useful policy implication for developing countries, who can improve their SWB by promoting economic growth alongside responsible consumption.

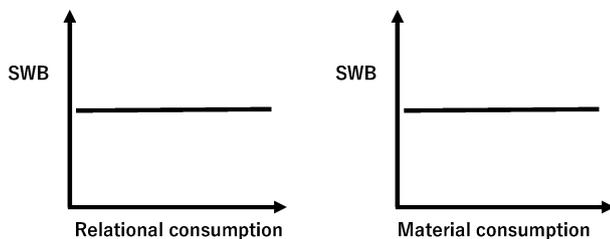


Fig. 5 Relational and material consumption and SWB (urban area in Vietnam). Based on the results of Tsurumi et al. (2021a). Note: Vertical line corresponds to life evaluation and emotional well-being.

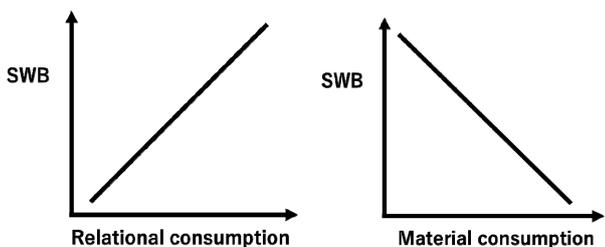


Fig. 6 Relational and material consumption and SWB (rural area in Vietnam). Based on the results of Tsurumi et al. (2021a). Note: Vertical line corresponds to life evaluation and emotional well-being.

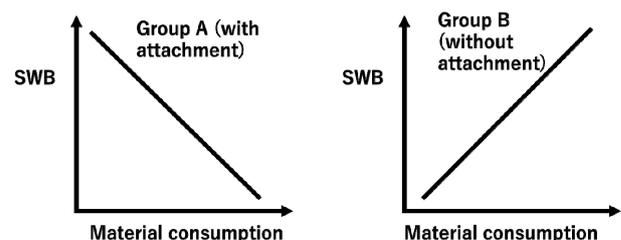


Fig. 7 Material consumption and SWB (rural area in Vietnam). Based on the results of Tsurumi et al. (2020c). Note: Vertical line corresponds to life satisfaction.

3.5 Analysis 5: Relationship between Consumption and SWB in Japan: Comparison of Before and During the COVID-19 Pandemic (Tsurumi et al., 2021b; Tsurumi et al., 2021c)

The COVID-19 pandemic may have had a great impact on relational consumption because people have been required to spend more time indoors. Analysis 5 investigated the pandemic's impact on SWB.

Figure 8 shows descriptive statistics on SWB (life satisfaction and affect balance) and consumption (material and relational consumption) before and during the COVID-19 pandemic in Japan. Both life evaluation (life satisfaction) and emotional well-being (affect balance) significantly decreased from November 2019 to November 2020. Regarding consumption, although material consumption exhibited little change, relational consumption dramatically decreased. Further, we investigated the determinants of SWB change before and during the COVID-19 pandemic. We utilized two-period datasets: dataset A corresponded to Survey 5, which covered 2019 and 2020 for the same respondents, whereas dataset B corresponded to surveys 1 and 5 for the same respondents, comprising both March 2016 and 2020. The first-differences estimations were applied in the regression. We obtained similar estimation results between Dataset A and Dataset B. The results show that, for both life evaluation and emotional well-being, approximately 50% of the decrease in SWB can be explained by a decrease in relational consumption after controlling for the effect of concerns surrounding infection rates in individuals' residential area. This implies that relational consumption is the main

determinant of SWB and that the COVID-19 pandemic had negative effects on SWB mainly by decreasing relational consumption.

4. Conclusions

This study presents an overview of our research regarding the relationship between consumption and SWB. Analyses 1 to 5 suggest that the key factors to improving SWB-per-unit consumption under the constraint of planetary boundaries are as follows: (1) paying attention to relational consumption, rather than material consumption is important; (2) for material consumption, having a sharing economy based on strong social capital is efficient; and (3) for material consumption, individuals who take better care of their possessions exhibit increased SWB-per-unit material consumption. Significantly, relational consumption did not contribute to SWB in urban Vietnam. Our survey data suggest that people in urban Vietnam place relatively less importance on social capital than people in rural Vietnam and Japan. For people in rural Vietnam, where strong social capital exists, and for people in Japan, where people tend to recognize the importance of social capital after experiencing social capital losses related to urbanization, relational consumption is key to improving SWB-per-unit consumption. People in urban areas in developing countries need to place greater importance on social capital to improve their SWB-per-unit consumption. Additionally, improving SWB through material consumption requires placing greater importance on attachment to material goods once again, so they are

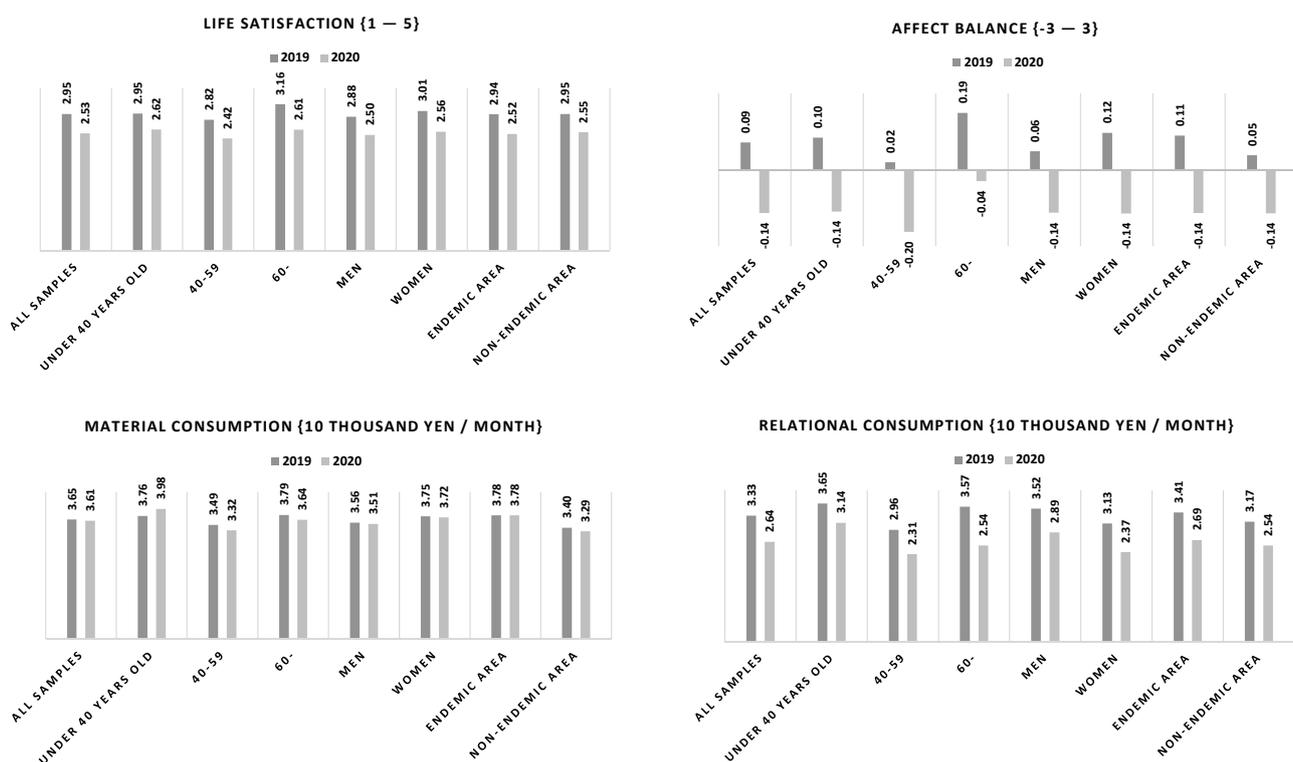


Fig. 8 Consumption and SWB before and during the COVID-19 pandemic (Japan). Source: Tsurumi et al. (2021b).

preserved longer rather than being quickly discarded. Thus, reestablishing individuals' attachment to social capital and material goods is necessary.

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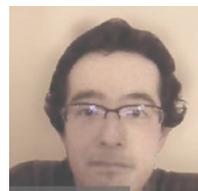
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