

# The impact of knowledge brokering and role crafting on work engagement: a two-wave panel survey of older Japanese workers

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## Abstract

**Purpose** – This study aimed to investigate the mechanisms of knowledge brokering and role crafting structures that promote the active engagement of older workers at work.

**Design/methodology/approach** – The respondents were workers in Japan aged 55–64 years. A two-wave panel survey was conducted. The first and second survey waves included 1,527 and 1,467 respondents, respectively.

**Findings** – The results showed that knowledge brokering positively influenced work engagement directly and indirectly. In the three dimensions of role crafting, cognitive and task crafting had a positive effect on work engagement.

**Research limitations/implications** – This study focused on older workers in Japan. Therefore, it is necessary to verify whether the same effect is observed in countries other than Japan or among younger workers.

**Practical implications** – On an individual level, older workers should aim to keep acquiring new information inside and outside the organisation. On an organisational level, it is effective to increase opportunities for older workers to craft their work according to the socioemotional selectivity and selection optimisation and compensation theories.

**Originality/value** – This study reveals that knowledge brokering and cognitive crafting in role crafting have an important influence on the work engagement of older workers. Additionally, this study clarifies the impact of job crafting on older workers not only from the perspective of resource crafting to achieve person-job fit but also from the perspective of reframing perceptions through cognitive crafting in role crafting. These findings enable a clearer understanding of the relationship between role crafting and knowledge brokering, as well as the socioemotional selectivity and selection optimisation and compensation theories.

**Keywords** Job crafting, Role crafting, Cognitive crafting, Relational crafting, Knowledge brokering, Work engagement, Selection optimisation and compensation theory, Socioemotional selectivity theory

**Paper type** Research paper

With the rapidly ageing global population, the number of older workers is growing and organisations are challenged to keep older workers actively engaged in their work (Kanfer and Ackerman, 2004; Wong and Tetrick, 2017). As Drabe *et al.* (2015) and Stamov-Roßnagel and Biemann (2012) highlight, the structures of active engagement in the workplace of older and younger workers differ.

In an ageing society, understanding the characteristics of older workers' active engagement should be prioritised. Existing studies have mostly attempted to characterise

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the active engagement of older workers at work according to the concept of job crafting (Kooij *et al.*, 2015, 2022; Lichtenthaler and Fischbach, 2016; Nagy *et al.*, 2019). Job crafting refers to the process wherein individuals take initiative to create their jobs. As originally proposed, job crafting suggests that individuals proactively craft work in three dimensions, namely task, relational and cognitive crafting (Wrzesniewski and Dutton, 2001).

Existing research, however, has described the characteristics of older workers' active engagement at work in a different way compared with the original job crafting proposed by Wrzesniewski and Dutton (2001). For example, some studies have only focused on task crafting among the three dimensions of the original job crafting (Lichtenthaler and Fischbach, 2016; Nagy *et al.*, 2019), while others have proposed a new job crafting framework (Kooij *et al.*, 2015, 2022). The explanations provided by these existing studies are significant in that they have successfully interpreted job crafting according to the characteristics of older workers.

However, there is a concern that explaining older workers' active engagement in work solely in terms of task crafting or reinterpretation of job crafting may overlook the significance of the original job crafting framework. This is because the original job crafting captures task, relational and cognitive crafting as three dimensions in unison (Wrzesniewski and Dutton, 2001). Moreover, cognitive and relational crafting have a high affinity with ageing theories, namely the socioemotional selectivity theory (SST) (Carstensen, 1995; Carstensen and Mikels, 2005) and selection optimisation and compensation (SOC) theory (Baltes, 1997; Baltes and Baltes, 1990; Freund and Baltes, 2002; Kanfer and Ackerman, 2004).

According to SST, older workers perceive a shorter time horizon than younger workers, placing more emphasis on emotionally meaningful jobs. SOC theory does not view older workers as merely having their abilities diminished. In human development, loss and gain are inseparable. Therefore, SOC theory aims to maximise gain and minimise loss and proposes three strategies to address age-related change. SST and SOC theory are considered to be consistent with relational and cognitive crafting within job crafting because of the emphasis of ageing theories on interpersonal and cognitive change in response to age-related changes.

This study therefore attempts to explain the relationship between active engagement at work and cognitive and relational crafting among older workers, which has been overlooked in existing research, by combining SST and SOC theory with the concept of knowledge brokering. Knowledge brokering refers to the fresh and unfamiliar knowledge that individuals introduce from outside an organisation (Ishiyama, 2016). This not only contributes to the organisation but also expands the individual's perspective. In this context, individuals who engage in knowledge brokering seek to actively integrate diversity rather than simply acknowledge it and accept its differences for what they are (Asplund and Ulfvengren, 2021; Ishiyama, 2016; Moore *et al.*, 2019). This feature of knowledge brokering, which involves interacting with diverse others and reframing (reconsidering fixed ideas from a new perspective) cognition to integrate diversity, is assumed to be highly related to the relationship between interacting with others and cognitive change in SST and SOC theory and relational and cognitive crafting in job crafting. Therefore, elucidating the impact of knowledge brokering on relational and cognitive crafting in older workers would help to show the existence of realistic mechanisms for the SST and SOC theories.

Thus, this study aimed to empirically examine the reality of mechanisms of knowledge brokering and job crafting structures with SST and the SOC theory that promote the active engagement of older workers. In particular, the significance of this study lies in the fact that relational and cognitive crafting, rather than task crafting, in the original job crafting can explain its congruence with knowledge brokering and ageing theories.

## Theoretical background

### *Job crafting*

The three dimensions of job crafting—task, relational and cognitive crafting (Wrzesniewski and Dutton, 2001)—were initially difficult to operationalise quantitatively. In response, Tims and Bakker (2010) proposed focusing on task crafting because relational and cognitive crafting are harder to quantify; thus, Tims *et al.*'s (2012) job crafting scale focused on task crafting. Crafting tasks allows workers to adjust to their person-job fit independently. The development of this scale has led to several quantitative studies on job crafting (Rudolph *et al.*, 2017).

Bruning and Campion (2018) organised the research stream and classified job crafting into two defined categories. They referred to role crafting as the original concept of Wrzesniewski and Dutton (2001) and resource crafting as a concept that relies on Tims and Bakker (2010) and Tims *et al.* (2012). Resource crafting involves the same concept as task crafting because it is an elaborate scaling of the three role crafting dimensions, focusing only on task crafting.

Research on job crafting has predominantly focused on resource crafting that has been successfully scaled (Bruning and Campion, 2018; Zhang and Parker, 2019). Similarly, research regarding the impact of job crafting on the roles of older people is developing, mainly through resource crafting (Lichtenthaler and Fischbach, 2016; Nagy *et al.*, 2019). Research on older workers according to relational and cognitive crafting is limited (e.g. Wong and Tetrick, 2017).

### *Relationship between role crafting and SST and SOC theory*

Traditional theories on ageing have focused on whether older people should expand or reduce their activities. Conversely, the distinctive feature of SOC theory is that it presents an older person's strategy for successful ageing. Particularly, older people redefine and specify their goals according to their own situation (selection), optimise the functioning of their chosen goals (optimisation) and deliberately compensate for what they are no longer able to do (compensation) (Baltes, 1997; Baltes and Baltes, 1990; Freund and Baltes, 2002; Kanfer and Ackerman, 2004). SST similarly presents ideas that are not limited to the expansion and reduction of activities for older people. It posits that people change their emotions, self-concept and information-seeking behaviours depending on the length of their lifespan. When people feel that their remaining time in life is short, they seek only valuable information based on their self-concept, focus more on meaningful emotions and place greater emphasis on intimacy in their interpersonal relationships (Carstensen, 1995; Carstensen and Mikels, 2005).

Role crafting, as discussed by Wrzesniewski and Dutton (2001), was conceptualised using Gergen's (1994) emphasis on an individual's world of experience and Salancik and Pfeffer's (1978) social information processing perspective on the relationship between jobs and people.

A typical example is Wrzesniewski and Dutton's (2001) study involving two groups of hospital cleaners. The first group performed only minimal duties and hated their jobs, whereas the second group performed hospital-wide duties, interacted with various hospital stakeholders and liked their jobs. The second group of cleaners understood the meaning of work in terms of wholeness and reframed the relationship between work and people. Steger and Dik (2010) stated that the meaningfulness of work is generated when one's comprehension of the self and their organisation and purpose are linked.

In comparison to these characteristics of role crafting, SST and SOC theory imply that the meaning of an individual's work changes with age, alongside their interpersonal relationships. Given the close connection between the meaning of work and cognitive crafting and between changes in interpersonal relationships and relational crafting, role crafting may explain the changes in older workers relying on SST and SOC theory.

Prior studies have attempted to find a connection with the SOC theory by establishing a new job crafting framework. For example, [Kooij et al. \(2022\)](#) found that in view of the SOC theory, accommodative (selection), utilisation (compensation) and developmental (optimisation) crafting were effective for older workers. However, it can be said that an association with SST and SOC theory existed in the original job crafting, that is, role crafting.

### *Knowledge brokering*

Individuals who engage in knowledge brokering are known as knowledge brokers. Knowledge brokers are not satisfied with activities within the workplace and are willing to actively engage in activities inside and outside the workplace, thereby acquiring diverse knowledge ([Ishiyama, 2016](#); [Wenger, 1998, 2000](#)). They assume membership in multiple communities of practice ([Ishiyama, 2016](#); [Wenger, 1998, 2000](#)), which are groups in which knowledge is created informally based on members' expertise and passion ([Lave and Wenger, 1991](#); [Wenger, 1998, 2000](#)). Examples of knowledge integration based on communities of practice include engineers, site supervisors and main contractors ([Gherardi and Nicolini, 2002](#)); school teachers, researchers and industry members ([Moore et al., 2019](#)); and safety engineers ([Asplund and Ulfvengren, 2021](#)).

### **Hypothesis development**

[Kooij et al. \(2020\)](#) used work engagement to measure the active engagement of older workers at work. Work engagement is a work-related and fulfilling psychological state; as an academically robust concept, it is the focus of considerable research ([Schaufeli and Bakker, 2010](#); [Schaufeli et al., 2006](#)). Therefore, in setting the hypotheses for this study, the author used work engagement as the dependent variable, knowledge brokering as the independent variable and role crafting as the mediating variable; this was done to examine how knowledge brokering and role crafting affect work engagement in older workers.

According to [Ishiyama \(2016\)](#), knowledge brokering is characterised by an attitude of actively integrating diversity and creating new value rather than simply acknowledging diversity and accepting differences as they are. SST prioritises emotionally meaningful goals for older adults. In older adults, memory performance is also higher for emotionally meaningful information ([Carstensen and Mikels, 2005](#)). According to SOC theory, older adults switch their goals from growth to maintenance and coping with loss ([Baltes and Baltes, 1990](#)).

The abovementioned characteristics of older workers involve them switching their values, goals and actions from the past and working towards new ones. Knowledge brokers also embody these characteristics by actively integrating diverse values; it is easy for them to switch their past values and create new goals. Therefore, the characteristics of knowledge brokers were considered consistent with the strategies indicated by SST and SOC theory, and this was likely to increase work engagement.

*H1.* Knowledge brokering is positively related to work engagement.

While job crafting occurs in the workplace and its antecedents have been studied with a focus on factors within the workplace ([Bruning and Campion, 2018](#); [Zhang and Parker, 2019](#)), knowledge brokering encourages contact with diverse people inside and outside the workplace. Performing knowledge brokering allows for the acquisition of knowledge and information from outside a diverse organisation, which would increase tolerance for people with different values ([Ishiyama, 2016](#); [Wenger, 1998, 2000](#)). This feature of knowledge brokering is considered to lead to relational crafting, as it extends the scope of interactions with others at work to outside the organisation and also encourages relationship building with people of heterogeneous values.

*H2a.* Knowledge brokering is positively related to relational crafting.

Cognitive reframing, an effect of knowledge brokering, may not always occur within the workplace, as it may be influenced by fresh knowledge and information from outside. In [Berg et al. \(2013\)](#), cognitive reframing is considered to be cognitive crafting itself. Furthermore, [Berg et al.](#) suggest that three methods are useful for generating cognitive reframing: expanding perceptions, focusing on perceptions and linking perceptions. Of the three methods, the acquisition of fresh knowledge and information from outside as an effect of knowledge brokering is considered essential for expanding and linking perceptions. In other words, when older workers acquire fresh knowledge and information from outside through knowledge brokering, this leads to an expansion and linking of their perceptions, which is thought to give rise to cognitive crafting.

*H2b.* Knowledge brokering is positively related to cognitive crafting.

In contrast to relational and cognitive crafting, knowledge brokers' willingness to actively integrate diverse values does not include content that is directly connected to task crafting. However, although a relationship between knowledge brokering and task crafting cannot be assumed, task crafting is thought to have a positive effect on work engagement.

As noted earlier, resource (task) crafting has been scaled and research has been accumulating. The results of past studies show that employees have an incentive to work healthily by aligning the job resources and demands with their own ([Bruning and Campion, 2018](#)). This mechanism of improving person-job fit by aligning job resources and demands in a way that is comfortable for employees would be common among older workers. Indeed, existing studies have shown that resource (task) crafting promotes active engagement at work for older workers ([Kooij et al., 2015](#); [Nagy et al., 2019](#)).

*H3a.* Task crafting is positively related to work engagement.

Relational crafting has been overlooked in job crafting research ([Rofcanin et al., 2019](#); [Rudolph et al., 2017](#)). A rare study on relational crafting conducted by [Rofcanin et al. \(2019\)](#) found that crafting to expand the quality and quantity of relationships had a positive impact on work engagement.

The effects of relational crafting noted by [Rofcanin et al.](#) are also shown in the original job crafting. As noted above, [Wrzesniewski and Dutton's \(2001\)](#) case study showed that hospital cleaners who performed relational crafting interacted with diverse hospital stakeholders more than those who did not, and this interaction led them to like their jobs. Relational crafting, which improves the quality and quantity of such work interactions, is considered to have characteristics that improve work engagement.

*H3b.* Relational crafting is positively related to work engagement.

Cognitive crafting has also been overlooked in job crafting research ([Zhang and Parker, 2019](#)). However, based on SST and SOC theory, older workers undergo a cognitive change to focus on meaningful emotions. For example, [Kooij et al. \(2015\)](#) pointed out that in SOC theory, it is important for older workers to reset their goals. For them, resetting work goals with an emphasis on meaningful emotions would be nothing less than setting meaningful job goals. Older workers' work-related motivations switch to intrinsic ones for contributing to the younger generation and society ([Kooij et al., 2015](#)). Thus, they look for meaningful work that contributes to society. This is consistent with the theory of job meaningfulness that emphasises individual growth as well as contribution to others and society ([Rosso et al., 2010](#); [Steger et al., 2012](#)). Additionally, the key concept of job meaningfulness comes into play in cognitive crafting ([Bruning and Campion, 2018](#)). Thus, cognitive crafting is thought to improve work engagement because it fosters job meaningfulness among older workers.

*H3c.* Cognitive crafting is positively related to work engagement.

As proposed in *H2*, knowledge brokers' willingness to create new values from different ones (Ishiyama, 2016; Wenger, 1998, 2000) helps them in interactions with stakeholders with different values to change their interpersonal relationships in relational crafting (Berg *et al.*, 2013; Wrzesniewski and Dutton, 2001). In other words, when older workers engage in relational crafting based on knowledge brokering, they are likely to be more tolerant of values different from their own and engage in work interactions with a wider range of stakeholders. According to the SST, older people value interactions with intimate people whom they find emotionally meaningful. When older workers practise relational crafting based on knowledge brokering, their increased tolerance for different values expands the scope for emotionally meaningful and intimate interactions in SST. Work engagement is likely to improve as a result of greater emotionally meaningful and intimate interactions on the job among older workers.

*H4a.* Knowledge brokering is indirectly positively related to work engagement, mediated by relational crafting.

As indicated in *H2b*, knowledge brokers acquire knowledge and information inside and outside the organisation, thereby practising cognitive crafting. When they practice cognitive crafting, job meaningfulness arises for knowledge brokers on the basis of new information. According to Baltes (1997), selection in SOC theory involves a strategy of not only focusing on goals but also searching for new goals and reconstructing the hierarchy of goals. In other words, the fact that knowledge brokers generate job meaningfulness through the acquisition of new knowledge is consistent with the search for new goals and reconstruction of the goal hierarchy in SOC theory. Therefore, when older workers perform knowledge brokering, they are more consistent with the SOC theory and work engagement is promoted.

*H4b.* Knowledge brokering is indirectly positively related to work engagement, mediated by cognitive crafting.

## Material and methods

### *Procedure*

This study analysed data from two online questionnaires conducted by Macromill Inc., one of the largest Internet research companies in Japan, in November 2018 and February 2020. The company obtained consent from online survey participants to conduct the survey. The company has a privacy policy to ensure the protection of personal information. Additionally, its website states that responses to the web survey are voluntary, a response constitutes consent, and there are no disadvantages to not responding or discontinuing the survey. Moreover, its track record includes many academic studies. As the company's methods of recruiting respondents and rewarding them are also publicly available, transparent and credible, the author found no problems with the company's conduct of the survey.

The respondents were workers in Japan aged 55–64 years. The reasons for using a Japanese sample and an age range of 55–64 years are as follows: Japan has one of the fastest ageing populations worldwide, with a growing older adult workforce. Hence, challenges related to older workers are among the most pronounced worldwide (Organisation for Economic Co-operation and Development (OECD), 2018). Additionally, Takao (2019) pointed out that job duties are not as strictly defined in Japan as in Europe and the United States. Moreover, personnel changes within the same organisation, including job type changes, may have influenced factors that made it easier for individuals to focus on the totality of their work



(i.e. meaningfulness in their jobs). Thus, Japan has a unique employment system, which makes it easy to observe role crafting. Given the two characteristics of an ageing population and an employment system in which role crafting is easily observable, the author decided that it was appropriate to use a Japanese sample.

The age range of older workers is sometimes defined broadly, from 40 to 75 years, but no consensus has been reached in previous studies; this is because a uniform definition is not appropriate given contextual changes, such as the growth of life expectancy and demographic differences across different industries (Wong and Tetrick, 2017).

The sample of older workers in this study was 55 years or older, based on the definition of older workers according to the Japanese law. The upper age limit for the sample was set at 64 because, although the current retirement age in Japan is 60, a reemployment system exists by law until the age of 64, and most older workers are employed until 64 (Takao and Ishiyama, 2021).

A two-wave panel survey was conducted in this study. This methodology was used to test whether the causal relationship of three-dimensional crafting in role crafting would still exist after a sufficient amount of time and to avoid the common method bias (Podsakoff and Organ, 1986). To verify the long-term effects of the three dimensions of role crafting in older workers, it is considered appropriate to have a relatively long interval between the first and second waves; hence, an interval of one year and three months was set.

Specifically, the independent variable of knowledge brokering and mediating variables of the three dimensions of role crafting were examined in the first wave of the survey, while the dependent variable of work engagement was investigated in the second wave. Additionally, to address priming effects, the questions were randomly ordered for each respondent (Podsakoff *et al.*, 2003).

### *Sample*

To ensure that the sample was as representative of the Japanese labour market as possible, gender and age were assigned in accordance with the Labor Force Survey of the Ministry of Internal Affairs and Communications. The industrial structure to which respondents belonged was also found to be less skewed than that of Japan as a whole. Consequently, 1,527 respondents were included in the first survey: 1,268 (83.0%) men and 259 (17.0%) women, with an average age of 59.6 years (standard deviation (SD), 3.03). The second wave of the survey was conducted among the respondents of the first wave, and responses were received. Those with missing values were excluded, resulting in 1,467 respondents for the final analysis: 1,215 (82.8%) men and 252 (17.2%) women, with a mean age of 59.6 years (SD 3.01).

### *Measurement instruments at time 1*

For the independent variable of knowledge brokering, the 12-item Knowledge Brokering Scale created by Ishiyama (2016) was used, with a five-point Likert scale. Sample items include “I try to expand my perspective by interacting with diverse people” and “I convey knowledge and information learned outside to my organisation”. As the original scale of knowledge brokering was developed in Japanese, the original Japanese questions were used.

For the mediating variable of role crafting, this study used Sekiguchi *et al.*'s (2017) nine-item scale that measures the three dimensions from Wrzesniewski and Dutton's (2001) study, using a five-point Likert scale. A scale by Weseler and Niessen (2016) also assesses role crafting; however, it consists of five dimensions. Therefore, the author decided to use Sekiguchi *et al.*'s (2017) scale, composed of three dimensions. As the original questionnaire for this scale was in Japanese, the Japanese questionnaire was used.

Age, gender, job change, managerial dummies and health status were used as the control variables. These control variables were selected from the factors influencing older workers in previous studies, and health status has particularly been shown to have an important effect on older workers' motivation (Takao and Ishiyama, 2021). Regarding health status, respondents were asked about their perception of their own health status compared with others of the same age using a five-point scale.

#### *Measurement instruments at time 2*

The dependent variable of work engagement was measured using nine items (on a seven-point scale) from the Japanese version of the Utrecht Work Engagement Scale (Shimazu *et al.*, 2010). The same control variables as in time 1 (t1) were obtained. However, the time 2 (t2) control variables were used only for confirmation and the t1 control variables were used in the analysis.

#### *Validation of the role crafting variable*

For role crafting, the dependent variable measured at t1, confirmatory factor analysis was conducted for the one- and three-dimensional factor structures since the subscale had a three-dimensional factor structure. The fit of the one-factor model was  $\chi^2 = 340.2$  (degrees of freedom (df) = 22,  $p < 0.001$ ),  $\chi^2/\text{df} = 15.46$ , comparative fit index (CFI) = 0.95, Tucker–Lewis index (TLI) = 0.93, root mean square error of approximation (RMSEA) = 0.10, and standardised root mean squared residual (SRMR) = 0.04. The fit of the three-factor model was  $\chi^2 = 109.88$  (df = 19,  $p < 0.001$ ),  $\chi^2/\text{df} = 5.78$ , CFI = 0.99, TLI = 0.98, RMSEA = 0.06 and SRMR = 0.03.

The goodness of fit of the three-factor model was higher than that of the one-factor model for role crafting. The following cut-off indicators of goodness of fit were used: CFI > 0.90, TLI > 0.90, RMSEA < 0.06 and SRMR < 0.08 (Hu and Bentler, 1999; Lance *et al.*, 2006). Furthermore, the chi-square difference test was  $\chi^2(\text{df}) = 230.4(3)$ ,  $p < 0.01$ . The goodness of fit of the three-factor model was slightly higher in terms of RMSEA; however, the other factors were acceptable. As shown in Table 1, the Cronbach's  $\alpha$  values for role crafting met the cut-off value. Consequently, three-dimensional factor structures were deemed suitable and used in subsequent analyses. Table 1 presents the means, SDs, Cronbach's  $\alpha$  and correlations among the variables.

#### *Analytical technique*

For mediation analysis, Preacher and Hayes (2004, 2008) proposed a method for testing indirect effects using confidence intervals for standard errors. Therefore, the indirect effects of the mediation relationship were estimated based on bias-corrected 95% confidence intervals using covariance structure analysis in AMOS and the bootstrapping method (5,000 bootstrapping).

## **Results**

### *Covariance structure analysis*

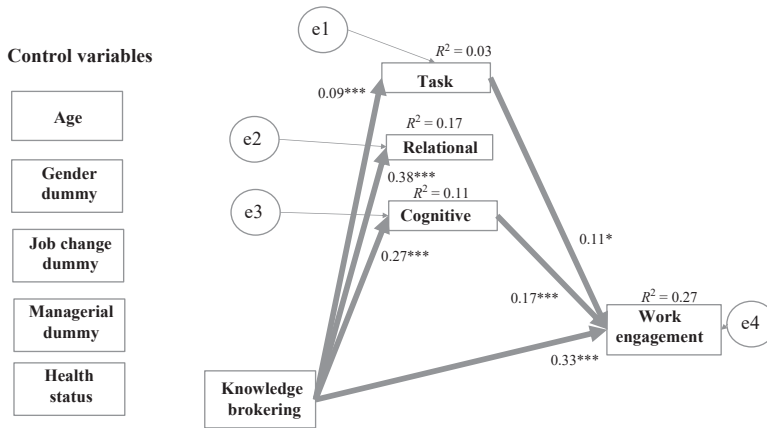
To analyse the hypotheses, the analytical model was determined through the arrangement fixed with knowledge brokering as the independent variable, the three types of role crafting as the mediating variables and work engagement as the dependent variable. The results are shown in Figure 1. Table 2 lists the indirect and total effects estimated using the bootstrapping method. The fit of the model was  $\chi^2 = 22.2$ , (df = 16,  $p = 0.14$ ),  $\chi^2/\text{df} = 1.39$ , CFI = 1.00, TLI = 1.00, RMSEA = 0.02 and SRMR = 0.02. The cut-off indicators of goodness



**Table 1.**  
Mean values, standard deviations, Cronbach's  $\alpha$  values, and correlation coefficients

Variables	N	Mean	SD	$\alpha$	1	2	3	4	5	6	7	8	9
1. Age	1,467	59.56	3.01	—	—	—	—	—	—	—	—	—	—
2. Gender dummy	1,467	0.83	0.38	—	0.08**	—	—	—	—	—	—	—	—
3. Job change dummy	1,467	0.57	0.50	—	0.06*	-0.22***	—	—	—	—	—	—	—
4. Managerial dummy	1,467	0.37	0.48	—	-0.15***	0.27***	-0.12***	—	—	—	—	—	—
5. Health status	1,467	3.25	0.87	—	0.09**	-0.05	-0.02	0.04	—	—	—	—	—
6. Knowledge brokering	1,467	2.81	0.72	0.93	-0.01	0.06*	-0.05	0.20***	0.20***	—	—	—	—
7. Task crafting	1,467	3.51	0.79	0.83	-0.02	-0.04	-0.01	0.07**	0.16***	0.12***	—	—	—
8. Relational crafting	1,467	3.22	0.76	0.79	-0.02	-0.00	-0.03	0.13***	0.17***	0.40***	0.63***	—	—
9. Cognitive crafting	1,467	3.33	0.77	0.82	0.01	-0.02	-0.02	0.10***	0.20***	0.30***	0.69***	0.74***	—
10. Work engagement	1,467	3.69	1.06	0.95	0.12***	-0.03	-0.04	0.09**	0.24***	0.42***	0.28***	0.37***	0.37***

**Note(s):** Gender dummy: 1 = male, 0 = female; job change dummy: 1 = change, 0 = no change; managerial dummy: 1 = managerial class, 0 = other classes  
 \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$   
**Source(s):** Created by author



**Note(s):** Notations for paths from control variables, non-significant paths, and correlations for error variables are omitted. \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$

**Source(s):** Created by author

**Figure 1.** Covariance structural analysis

Variables		Work engagement	
		$\beta$	95% CI
Knowledge brokering	Direct effect	0.33**	0.28, 0.39
	Indirect effect (total)	0.06***	0.04, 0.08
	Knowledge brokering → task → work engagement	0.01	–
	Knowledge brokering → cognitive → work engagement	0.05	–
Task crafting	Total effect	0.39***	0.34, 0.44
	Direct effect	0.11**	0.04, 0.18
Cognitive crafting	Total effect	0.11**	0.04, 0.18
	Direct effect	0.17***	0.09, 0.24
	Total effect	0.17***	0.09, 0.24

**Note(s):** \*\*\* $p < 0.001$ , \*\* $p < 0.01$

**Source(s):** Created by author

**Table 2.** Results of direct effect, indirect effect and total effect

of fit (CFI>0.90, TLI>0.90, RMSEA<0.06 and SRMR<0.08; Hu and Bentler, 1999; Lance *et al.*, 2006) of the model were acceptable.

Among the control variables in the model, health status had a positive impact on all mediating and dependent variables. Age also had a positive impact on work engagement. As shown in previous studies, the impact of health status on older workers is significant, confirming this once again.

Thus, after the effects of health status and other control variables were considered, the following hypothesis was tested in the model: knowledge brokering is positively related to work engagement. The results showed that knowledge brokering was also positively related to all three dimensions of role crafting. Thus, Hypotheses 1, 2a and b were supported. Furthermore, among the three dimensions of role crafting, only task and cognitive crafting were positively related to work engagement. Thus, Hypotheses 3a and 3c were supported, whereas Hypothesis 3b was not. Additionally, regarding the indirect effects of the three dimensions of role crafting, mediating the relationship between knowledge brokering and

work engagement, task and cognitive crafting were significant, whereas relational crafting was not. Thus, [Hypothesis 4b](#) was supported, whereas [Hypothesis 4a](#) was not.

## Discussion

### *Theoretical implications*

The theoretical implications of this study are as follows: First, this study revealed that cognitive crafting has a positive effect on the active engagement of older workers. In the hypotheses, the author assumed that relational and cognitive crafting would directly impact work engagement and would play a mediating role between knowledge brokering and work engagement. The findings showed that the hypotheses about cognitive crafting were supported, but those about relational crafting were not.

The author predicted the following mechanisms in terms of SST and SOC theory: Older workers' tolerance for different values increases when they perform knowledge brokering. Consequently, older workers' relational crafting improves the quality and quantity of their relationships with others on the job. Therefore, the relational crafting that results from practising knowledge brokering has a positive impact on older workers' active engagement on the job.

However, SST emphasises interaction with a limited range of intimate others, and SOC theory emphasises the selection of goals. This limited feature of older workers in both theories does not fit with the feature of expanding the range of relationships with others in relational crafting.

Conversely, the author predicted that acquiring new knowledge and information inside and outside the organisation through knowledge brokering and reframing perceptions through cognitive crafting would have a positive impact on the active engagement of older workers, as they would be able to set meaningful goals for themselves, based on the SST and SOC theory. The analysis showed that cognitive crafting had a positive impact on work engagement, as hypothesised. Setting a goal that is meaningful to oneself can also generate job meaningfulness, which is the significance of the original job crafting. The study found that SST, SOC theory and the original job crafting are connected by the generation of job meaningfulness through cognitive reframing and not through relationships with others.

Second, this study showed differences between the impact of role crafting and resource crafting on the active engagement of older workers. As noted above, job crafting's research accumulation on older workers has mainly focused on resource (task) crafting ([Lichtenthaler and Fischbach, 2016](#); [Nagy et al., 2019](#)). Alternatively, an attempt was made to explain the active engagement of older workers through a new job crafting framework ([Kooij et al., 2015, 2022](#)). Within the current validation model, both task crafting and cognitive crafting had a positive impact on the active engagement of older workers. However, the impact of knowledge brokering on task crafting was weaker than on cognitive crafting. The reason why task crafting affects work engagement is that older workers increase person-job fit by aligning the job resources and demands with their own, as previous studies have shown, and the impact of knowledge brokering is small. Conversely, the reasons for the impact of cognitive crafting have not been indicated in previous studies. Thus, job meaningfulness is connected with SST and SOC theory owing to the influence of knowledge brokering. This study found that resource and role crafting had a positive impact on the active engagement of older workers for different reasons.

Third, knowledge brokering, mediated by cognitive crafting, had a direct and an indirect positive impact on work engagement. The direct effect can be explained by the fact that the integration of knowledge, both internally and externally through knowledge brokering, is consistent with refining, selecting and reconstructing goals in the SST and SOC theory. The indirect effect can be explained by the fact that knowledge brokering triggers cognitive

crafting, which leads to more meaningful work. Although the necessity for older people to select and reconstruct their goals has previously been demonstrated in SST and SOC theory, the details of the processes involved in doing so have arguably been less clear. This study showed that the acquisition of new knowledge both internally and externally by knowledge brokering is crucial for older workers to select and reconstruct their goals. Thus, this study represents a theoretical contribution in that it demonstrates a specific process for putting SST and SOC theory into practice.

### *Practical implications*

The study found that the influence of knowledge brokering and impact of cognitive crafting on role crafting were highly significant for work engagement.

Therefore, from the individual employee's viewpoint, it is necessary for older workers to have an attitude of continuously acquiring new information inside and outside the organisation through knowledge brokering and to link this to cognitive reframing. SST and SOC theory suggest that when older people select a goal, they need to narrow it down. Narrowing goals may mean that new knowledge may be seen as unnecessary. However, SST and SOC theory suggest that it is necessary to not only narrow the goals but also to set and restructure them simultaneously. Therefore, acquiring new information inside and outside the organisation is essential for older workers.

For organisations, it is effective to increase opportunities for older workers to craft their work according to the SST and SOC theory (Kooij *et al.*, 2022). The development climate (Armstrong-Stassen and Schlosser, 2008) and age-inclusive management (Li *et al.*, 2021) of older workers may also be useful for this purpose.

### *Limitations and future research directions*

This study focused on older workers in Japan. Therefore, verifying whether the same effect can be observed in countries other than Japan, or among younger workers is crucial. Additionally, this study examined the relationship between older workers and role crafting. Research on role crafting, particularly on relationship and cognitive crafting, remains scarce compared to that on resource crafting. Further research on the relational and cognitive crafting aspects of role crafting is required.

## **Conclusions**

This study set knowledge brokering as an independent variable and role crafting as a mediating variable to examine how they affect work engagement as the dependent variable. The results showed that knowledge brokering positively influenced work engagement, both directly and indirectly. Among the three dimensions of role crafting, task and cognitive crafting had a positive effect on work engagement. These findings enable a clearer understanding of the relationship between role crafting and knowledge brokering as well as SST and SOC theory.

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