Effect of job crafting on work engagement with mindfulness as a mediator

Neil Aldrin\textsuperscript{1*} and Netty Merdiaty\textsuperscript{1}

Abstract: The purpose of this study was to examine the effect of job crafting on work engagement by using mindfulness (at work) mediator variables. This research was conducted by collecting data from 205 employees in a company engaged in IT. Overall, 205 employees participated in this study. Of the participants, 96 were women (47\%) and 109 were male (53\%). The results show that there is no direct effect of job crafting on work engagement and there is a role for mindfulness mediators that mediate between job crafting and work engagement. The results are discussed and the implications for the organization are mentioned.

Subjects: Industrial & Organizational Psychology; Human Resources Development; Work & Organizational Psychology

Keywords: Job crafting; mindfulness; work engagement; job characteristics

1. Introduction

The role of individual employees is an important factor in the organization to achieve organizational goals. This makes the organization tries to make employees become satisfied, survive, and not leave the organization (Martin & Schinke, 1998). So organizations in the present era continue striving to optimize, improve, and find ways to make their employees work proactively and how they enjoy each of their jobs. Over the past decade, the global economic crisis has modified the labor market. This forces and requires companies to improve their abilities and knowledge to be more competitive in order to increase competitiveness (Cenciotti et al., 2016). In this case, job crafting can help employees to optimize, design jobs, increase their happiness and effectiveness at work. As stated by some researchers, this can be seen from the perspective of the work environment, in craftwork, and employees freely modify aspects of their work to improve the suitability of job characteristics and adjust to their own needs and abilities (Berg, Dutton, & Wrzesniewski, 2008; Tims, Bakker, & Derks, 2013). In line with Callea, Urbini, Inguscio, and Chirumbolo (2014), this constant and rapid change directly and indirectly involves workers and organizations and demands...
that they are more flexible and have stronger personal initiatives. This is the way employees describe and take advantage of an opportunity to adjust by changing their work assignments actively and their interactions with others in the workplace. As Demerouti (2014) stated, job crafting describes the behavior of employees on their own initiative, where they change aspects of their work and work environment. Furthermore in this perspective, job crafting can make changes that employees can make to balance work with their personal abilities and needs (Tims & Bakker, 2010; Tims, Bakker, & Derks, 2015). Thus, this requires awareness of each employee.

It was explained that mindfulness provides significant benefits both individually and professionally to employees in their workplaces (Mesmer-Magnus et al., 2017). In line with what was conveyed by Weinstein et al. (2009) in his research stated that mindfulness helps individuals to deal with problems proactively and adapt to the situation or situation they experience. The purpose of mindfulness is to pay close attention to emotional, mental and physical sensations. Mindfulness attracts researchers, especially in the field of industrial psychology and organizations (IO), to explore this study more deeply to be applied in organizations. Where some researchers convey the results that there is a role that is relevant to work tasks in the workplace (Hülseheger, Alberts, Feinholdt, & Lang, 2016). Reinforced again by Raza et al. (2018), which conveys scientists and researchers in the field of organization investigating the benefits of mindfulness and its relationship with variables related to industrial psychology and organization.

The psychological connection of employees to their work has become very important in the 21st century information/service economy. In the contemporary world of work, to compete effectively, companies must not only recruit top talent, but also must inspire and enable employees to apply their full capabilities to their jobs. Contemporary organizations need employees who are psychologically connected to their work; who are willing and able to invest themselves fully in their roles; who are proactive and committed to high-quality performance standards. They need employees who are involved with their work (Bakker & P., 2010). In other words, modern work organizations need employees who are involved and require employees to be motivated, proactive, responsible, and involved (Knifton et al., 2011; Schaufeli & Bakker, 2003)

2. Literature review

2.1. Job crafting

According to Demerouti (2014), job crafting describes the behavior of employees when they do work on their own initiative, where they change aspects of their work and work environment. In line with what was conveyed (Frederick & Vanderweele, 2017a), how an employee allocates their time and energy to do their work. Thus, employees can basically reshape their work so that it is more in line with their motivation to work, as well as their individual skills and preferences. This process influences the nature of the work itself, including the demands experienced on the job and the sense of personal efficacy to fulfill that demand (Siemp, Kern, & Brodrick, 2015). This shows the process of adjusting the work done by employees by prioritizing and adjusting their needs. This becomes a strategic role for organizations in the global market and makes key indicators that are very important for every organization (Ingusci, 2018).

Wrzesniewski and Dutton (2001), describe and define job crafting as a set of three behaviors that they think help improve meaning in the lives of employees. These three things are illustrated the ways in which employees can develop their work such as: structural (task), social (relational), and cognitive. These three things explain how employees change the way they work when doing their work assignments. Continuing again how employees complete work by changing the way they interact with others and how employees can creatively complete their work by changing the way they view their work.

2.2. Work engagement

Work engagement is defined as a positive, satisfying state of mind related to work that is characterized by enthusiasm, dedication, and absorption (Schaufeli, Salanova, González-Roma, & Bakker, 2002). The spirit (vigor) is characterized by high levels of energy and mental endurance
while working. Dedication refers to strong involvement in one’s work and experiencing a sense of significance, enthusiasm and challenge. Absorption is characterized by being fully concentrated and joyfully engrossed in one’s work, where time passes quickly and one has difficulty with breaking away from work (Schaufeli & Bakker, 2004). Work engagement is a concept that has just emerged in the literature on organizational psychology, human resource development, and business management, and is associated with proven organizational results from several studies (Alqarni, 2016).

Both academic and empirical research on work engagement have revealed that it is strongly associated with a variety of positive organizational outcomes: high profits, gross income, professional growth (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). In line with what was conveyed by Robertson-Smith and Markwick (2009), work engagement produces employee productivity as a result of many other productive results in this experience.

Thus, work engagement is an important feature that emphasizes employee insight into their work. Furthermore, how employees pay attention to their work, they feel very involved in their work. In the end, the results will increase their creativity and can provide more dynamic results in their workplace (Mubarak & Noor, 2018).

2.3. Mindfulness at work

Recently, mindfulness has begun to attract industry attention and is widely referred to in the industrial and organizational psychology literature (IO). Two theoretical articles about the potential role of mindfulness in the workplace have suggested that mindfulness has a relevant role in work-related outcomes such as task performance, physical health, and psychology (Dane, 2011; Glomb, Duffy, Bono, & Yang, 2011). Meaning mindfulness is quality or conscious or unconscious of something. Even simpler if applied to the organization, the employee is a caring person, how he understands every event that happens to him in front of him (Raza et al., 2018). Thus, mindfulness is also a form of consciousness that emerges from the beginning until now in a non-judgmental and accepting way (Bishop et al., 2004). In line with what was conveyed by Kabat-Zinn (2003), where mindfulness is seen as a way of giving attention to the present, intentionally and by accepting and not judging. This is seen as a quality inherent in humans that can be developed so that individuals can bring quality to the way they pay attention to thoughts, actions, and emotional states (Mellor, Ingram, Van Huizen, Arnold, & Harding, 2016). This can give rise to characteristics of mindfulness.

Brown, Ryan, and Creswell (2007) convey some characteristics of mindfulness: First, mindfulness involves receptive awareness and registration of inner experiences (emotions, thoughts, behavioral intentions) and external events. Second, conscious information processing is pre-conceptual. In a conscious state, pure individuals pay attention to what happens without evaluating, analyzing, or reflecting it. Third, attention is characterized by current-oriented awareness, where individuals focus on experience from moment to moment rather than thinking about the past or fantasizing about the future. Fourth, attention is inherent human capacity that varies in strength, both across situations and people.

From what has been described above, the hypothesis is formulated as follows:

**Hypothesis 1:** It is suspected that there is a positive effect of job crafting on work engagement

**Hypothesis 2:** It is suspected that there is a positive effect of job crafting on mindfulness

**Hypothesis 3:** It is suspected that there is a positive influence of mindfulness on work engagement

**Hypothesis 4:** It is suspected that there is a role of mediator mindfulness on the effect of job crafting with work engagement.
3. Method
This research was conducted with a quantitative approach. The data analysis technique in this study uses path analysis. To get the value of direct and indirect effects, regression analysis with intervening variables is used. This study uses a quantitative approach to test four hypotheses, the data collection tool uses a psychological scale, the research respondents are employees in one company. The method of data analysis uses the Structural Equation Model based on variance or Variance Based-SEM according to the research objectives.

3.1. Research participants
Respondents in this study were employees in one of the companies engaged in IT in Indonesia, totaling 205 respondents. A total of 96 people or 47% of the total respondents in this study were women, while 109 people or 53% of the total respondents were male, so the total respondents were 205 people. All respondents in this study were voluntary and all respondents received approval of the form by providing information about the purpose of the study. This project involves human subjects. The research protocol is reviewed, approved and approved by the company’s human resource department. Ethical approval is not needed in accordance with applicable institutional and national guidelines and regulations. Informed consent from the participants was implied through the completion of the survey.

3.2. Measuring instruments
To collect research data, researchers used the Likert type psychological scale. Wrzesniewski and Dutton (2001), three behaviors of how employees can develop their work such as: structural (task), social (relational), and cognitively developed by researchers. While work engagement was developed by Schaufeli, Bakker, and Salanova (2006), which are grouped into three subscales that reflect the dimensions of underlying involvement: vigor (six items), dedication (five items), and absorption (six items). All items are rated on a frequency rating scale of 7 points ranging from 0 (never) to 7 (always). For mindfulness, we use the Mindfulness Attention Awareness Scale which consists of 15 items from the aspect of mindfulness. All items are expressed negatively (Example item: “I rush through the activity without really paying attention to them.”). In this study, answer choices ranged from (1) often to (6) never (MAAS; Brown & Ryan, 2003).

Job crafting has a composite reliability coefficient of 0.976, work engagement scale has a composite reliability coefficient of 0.975, and mindfulness scale has a reliability coefficient of 0.915.

3.3. Statistical analysis
Descriptive statistical methods to describe the research data used mean, median, and standard deviation, to determine the normality of data used multivariate normality testing using SPSS 22 software. Data analysis methods used to test hypotheses are structural equation modeling based on variants or variants based on SEM (VB-SEM) using AMOS version 24 software.

To analyze the data in this study descriptive statistical data were used. Where this data analysis emphasizes the correlation between variables that are focused on the description or explanation of the variable. By looking at the correlation between the variables of this study, it is expected to be able to understand the three variables studied. Data analysis method used to test hypotheses is structural equation modeling based on variants or variants based on SEM (VB-SEM) using AMOS version 24 software. This model is a series of statistical techniques that allow the examination of a series of simultaneous relationships. In the Structural Equation Model, a variable that is not affected by other variables is called an exogenous variable or an independent variable, while other variables that are affected by another variable are called endogenous or dependent variables.

4. Results
Based on the path analysis model as shown in Figure 1. Using the AMOS version 24 program for processing data, it can be done to form equations and estimates. After estimations and
equations are formed, a suitability test or goodness of fit test and hypothesis test are conducted. The results of the analysis of the model obtained results as shown in the following Figure 1:

Based on the results of data processing and acceptance criteria testing the model based on match size that determines the degree of prediction of the overall model on the correlation and covariance matrix is good. This can be seen with the chi-square value of 18,258 where the chi-square value gets smaller the better and the better the model (see Table 1). The Chi-squares Probability value is 0.249 > 0.05 which indicates that empirical data are identical to the theory/model. The value of Root Mean Square Error of Approximation (RMSEA) 0.033 which indicates the model is close to fit (close fit) (see Table 1). While the incremental suitability measure by comparing the proposed model with the base model also looks very good by looking at the value produced by Goodness Of Fit Index (GFI) 0.978, where GFI is an index that describes the overall suitability of the model calculated from the residual square of the model predicted compared to the actual data. So that the GFI value > 0.90 (see Table 1) indicates that the tested model has good suitability. Adjusted Goodness Fit Of Index (AGFI) 0.946, Tucker Lewis Index (TLI) 0.996 > 0.90, the Normed Fit Index (NFI). This index is also a measure of the comparison between the proposed model and the null model. The recommended acceptance value is NFI > 0.90. Comparative Fit Index (CFI), 0.998, is also an incremental conformity index. The magnitude of this index is in the range of 0 to 1 and a value close to 1 indicates the model has

Table 1. Model results

| Measurement Conformity | Cut off Value | Research result | Criteria |
|------------------------|---------------|-----------------|----------|
| Chi-square ($X^2$)     | ≤48.561       | 18.258          | Good Fit |
| Probability            | ≥0.05         | 0.249           | Good Fit |
| Cmin/df                | ≥2.00         | 1.217           | Good Fit |
| GFI                    | ≥0.09         | 0.978           | Good Fit |
| AGFI                   | ≥0.90         | 0.946           | Good Fit |
| TLI                    | ≥0.90         | 0.996           | Good Fit |
| NFI                    | ≥0.90         | 0.988           | Good Fit |
| CFI                    | ≥0.90         | 0.998           | Good Fit |
| RMSEA                  | ≥0.08         | 0.033           | Good Fit |
a good level of conformity. This index is highly recommended for use because this index is relatively insensitive to sample size and is less influenced by the complexity of the model. The recommended acceptance value is CFI 0.998 > 0.90

Influence analysis is intended to see how strong the influence of a variable with other variables both directly and indirectly. The results of direct and indirect influence calculations are shown in Table 2.

Based on the calculation results in Table 3 and Figure 1, the direct effect of job crafting on mindfulness can be concluded that job crafting has a direct effect of 0.924 (sig.). Similarly, the direct influence of mindfulness on work engagement has an effect of 0.892 (sig.). Whereas between crafting jobs to work engagement has no direct effect which has a value of 0.111 (0.531 > p). The result of the next calculation is that the indirect effect of job crafting on work engagement through mindfulness has an indirect effect of 0.934 (sig.). Because the indirect influence is greater than the direct effect, it can be concluded that in this study mindfulness mediators play a full role.

5. Discussion
Based on the results of the structural model analysts and the testing of goodness of fit for this study, the effect of job crafting on work engagement with mindfulness as a mediator gave the results that the mediator of the research had a full role. The statistical hypothesis testing of the effect of each variable on the other variables, as follows. Of the four hypotheses proposed, only three hypotheses were accepted (H2, H3, H4), one was rejected (H1).

In hypothesis 1, there is no proven effect of job crafting on work engagement. Although the hypothesis proposed is that there is influence, the results of the study give different results from several previous studies which prove the influence or relationship between job crafting on work engagement (Ogbuanya & Chukwuedo, 2017; Robledo, Zappal, & Topa, 2019). The results obtained by several researchers also have not too much influence, although significant (Frederick & Vanderweele, 2017a; Sakuraya et al., 2017). However, there are several studies that support and are in line with the results of the first hypothesis from the results of this study (Fazriati & Budiono, 2017; Nguyen, Nguyen, Ngo, & Nguyen, 2019). Author’s guess, the possibility of this happening can be caused by cultural factors, where the authors do not pay attention and review about culture. Cultural factors can also influence the hypothesis.
Hypothesis 2, based on the results obtained from the calculation of Amos version 24 program, the conclusions obtained are that there is a significant effect of job crafting on mindfulness. The higher the focus of mindfulness, the better the results given to the organization (Brown & Ryan, 2003; Dane & Brummel, 2014; Morrow & Conger, 2018).

Hypothesis 3, states that there is a direct influence of mindfulness on work engagement. This is supported by the results of the study of Leroy, Anseel, Dimitrova, and Sels (2013) and Zheng, Gunasekara, and Blaich (2018), who also said that there was a significant influence and relationship between mindfulness and work engagement.

Next, hypothesis 4 gives the results of the mediator role of mindfulness between job crafting and work engagement. This is also supported by the results of research from Morrow and Conger (2018).

5.1. Limitations of the study and suggestions for future research
This study has several limitations. First of all, the number of participants is not too large compared to other studies in the literature, so it cannot generalize to other organizations. The higher number of participants can provide more accurate results. Therefore, future studies must include adequate participants. Second, the respondents in this study are the same in the field of work so there is a possibility of subjectivity. It is expected that for further research, look for respondents who are different in the field of work or division. The local culture in question is the culture from which individuals originate. Some countries such as Indonesia have a variety of cultures, so this needs to be considered for further research.

5.2. Implications for organizations
The results of this study present several implications for the organization. First of all, the results show that job crafting has positive results for employees who have it. But when employees have good job crafting, they do not necessarily feel the need of work engagement. But in this study, when employees have good job crafting, they do not necessarily feel work engagement. It is possible that the results of this study contradict some of the results of previous studies, in particular, the effect of job crafting on work engagement giving positive and significant results. Although there are some research results that are also the same as the results of this study, but only a small portion. This could be due to differences in local culture, given that in Indonesia there are so many cultures and cultural influences influence the way of thinking and working. Work engagement still needs to be owned by every employee; therefore, mindfulness is needed to bridge between job crafting and work engagement. By having and understanding mindfulness in full, we can be sure they will feel the need of work engagement by themselves. In short, mindfulness provides an increase in work involvement. It is possible that the results of this study contradict some of the results of previous studies, specifically the effect of job crafting on work engagement has positive and significant results. Although there are also a number of studies which are similar to the results of this study, only a small number are. It could be, this is due to local cultural differences, considering that there are very many cultures in Indonesia and cultural influences influence the way of thinking and working. Therefore, in terms of practical implications for the organization and providing understanding of mindfulness for its employees, it is very important that work involvement requires attention and awareness for every employee in the organization. Thus, organizations must pay attention to the positive effects of mindfulness on employees in the organization. Because work involvement cannot fully emerge from them, it is important to develop it to increase the potential for job crafting for employees. Therefore, this research can be a good guide for organizations that want to help their employees to be more fully involved in their work.
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Competing interests
The authors declare no competing interest.

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PROCESS

Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 3.4 *****************

Written by Andrew F. Hayes, Ph.D.   www.afhayes.com

Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model: 4
Y: W
X: J
M: M
Sample
Size: 205
**************************************************************************

OUTCOME VARIABLE:
M

Model Summary

| R   | R-sq | MSE | F  | df1 | df2 | p   |
|-----|------|-----|----|-----|-----|-----|
| .9513 | .9050 | 13.0831 | 1934.1631 | 1.0000 | 203.0000 | .0000 |

Model

| coeff | se  | t    | p   | LLCI | ULCI |
|-------|-----|------|-----|------|------|
| constant | 1.3186 | 1.1282 | 1.1687 | .2439 | -.9060 | 3.5432 |
| J     | .9513 |

Standardized coefficients

| coeff |
|-------|
| J     |

**************************************************************************

OUTCOME VARIABLE:

W

Model Summary

| R   | R-sq | MSE | F  | df1 | df2 | p   |
|-----|------|-----|----|-----|-----|-----|
| .9423 | .8879 | 15.1122 | 800.1296 | 2.0000 | 202.0000 | .0000 |

Model

| coeff | se  | t    | p   | LLCI | ULCI |
|-------|-----|------|-----|------|------|
| constant | 2.1207 | 1.2167 | 1.7430 | .0829 | -.2783 | 4.5196 |
| J     | .3499 | .0662 | 5.2864 | .0000 | .2194 | .4805 JALUR c'
| M     | .5425 | .0754 | 7.1917 | .0000 | .3938 | .6912 JALUR B

Standardized coefficients

| coeff |
|-------|
| J     |
| M     |

************************** TOTAL EFFECT MODEL **************************
OUTCOME VARIABLE:

W

Model Summary

| R    | R-sq | MSE       | F     | df1 | df2 | p    |
|------|------|-----------|-------|-----|-----|------|
| .9269| .8592| 18.8880   | 1238.9770| 1.0000 | 203.0000 | .0000 |

Model

| coeff | se    | t      | p     | LLCI | ULCI |
|-------|-------|--------|-------|------|------|
| constant | 2.8360 | 1.3556 | 2.0920 | .0377 | .1631 | 5.5089 |
| J     | .8028 | .0228 | 35.1991 | .0000 | .7579 | .8478 |

Standardized coefficients

| coeff |
|-------|
| J     | .9269 |

- Line a is the influence of X to M. From the above output, the path coefficient a is 0.34 and is significant at the p level <0.05.

- Path c’ is the effect of X to Y or the direct effect from X to Y. The path coefficient c is 0.54 and significant at the level of p < 0.05.

- Line b is the effect of M to Y. The path coefficient b is 0.69 and is significant at the p level <0.05.

- Line a*b is an indirect effect of X to Y. From the above output we can calculate the indirect effect is 0.18.

- Path c is the total effect X to Y. The total effect can be calculated also by adding up the direct effect plus the indirect effect, or the sum of the a + lane path (a*b). The total effect coefficient is 0.80 and significant at the level of p < 0.05.

- Because path a and path b are significant, referring to the guidance of Baron and Kenny (1986), it can be concluded that there is a mediating role.

*************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ***************

Total effect of X on Y

| Effect | se    | t      | p     | LLCI | ULCI | c_ps | c_cs |
|--------|-------|--------|-------|------|------|------|------|
| .8028 | .0228 | 35.1991 | .0000 | .7579 | .8478 | .0695 | .9269 |

Direct effect of X on Y

| Effect | se    | t      | p     | LLCI | ULCI | c_ps | c_cs |
|--------|-------|--------|-------|------|------|------|------|
| .3499 | .0662 | 5.2864 | .0000 | .2194 | .4805 | .0303 | .4040 |
Indirect effect(s) of X on Y:

| Effect | BootSE  | BootLLCI | BootULCI |
|--------|---------|----------|----------|
| M      | .4529   | .1982    | .1215    | .8856    |

Partially standardized indirect effect(s) of X on Y:

| Effect | BootSE  | BootLLCI | BootULCI |
|--------|---------|----------|----------|
| M      | .0392   | .0173    | .0107    | .0768    |

Completely standardized indirect effect(s) of X on Y:

| Effect | BootSE  | BootLLCI | BootULCI |
|--------|---------|----------|----------|
| M      | .5229   | .2288    | .1402    | 1.0162   |

*********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

--- END MATRIX ---

To see whether there is a mediating effect or not, we can look at the output in the indirect effect of X on Y. There is written an indirect coefficient of 0.39 (the same as we multiply the path a*b). Confidence Intervals (Confidence Intervals/CIs) from the bootstrap results BootLLCI (lower level for CI) = 0.01 and BootULCI (upper level for CI) = 0.07. Basically, we ask whether it is possible (with 95% confidence) that the real indirect effect is zero (which means there is no mediation). If the BootLLCI and BootULCI ranges do not include the value zero (0), then a significant estimate can be concluded and a mediating effect can occur. Effect size can be seen from the standardized coefficient of indirect effects X to Y, which is equal to 0.522.

From the results of the above analysis, the value of the non-standardized bootstrapping indirect effect is 0.74, and the 95% confidence interval (CI) ranges from 0.33 to 1.32. Because zero is not included in the 95% confidence interval, it can be concluded that there is a significant indirect effect of knowledge on W through M.
