Preliminary study on the correlation between gratitude activity and prosocial behaviour*

Yukitoshi Kashimoto[1], Tomohiro Sakai[1], and Atsunori Minamikawa[1]

KDDI Research Inc., Fujimino, Japan
{yu-kashimoto, xti-sakai, at-minamikawa}@kddi.com

Abstract. Several studies report that gratitude behaviour results in prosocial behaviour. Unfortunately, most studies prove this correlation from questionnaires of university students. In addition, few try to study the mediator between gratitude behaviour and prosocial behaviour. In this paper, we present our preliminary research on the correlation between gratitude behaviour and prosocial behaviour among store workers. To study the correlation, we conducted a questionnaire that collected features relating to gratitude and prosocial behaviour, self-efficacy, and social worth. 772 subjects completed the questionnaire. The questionnaire results indicate that gratitude predicts prosocial behaviour via self-efficacy and social worth.

Keywords: Gratitude · Pro-social behaviour · Self-efficacy · Social worth · Workplace

1 Introduction

Gratitude is the positive emotion one feels when another person has intentionally given, or attempted to give, one something of value. Ralph Waldo Emerson offers a helpful introduction to gratitude as the ability to "Cultivate the habit of being grateful for every good thing that comes to you, and to give thanks continuously. And because all things have contributed to your advancement, you should include all things in your gratitude"[1]. Thus, gratitude may guide people towards a sense of meaning and better health. For decades, thinkers in various fields have believed this emotion to be essential for building and preserving social relationships as "not only the best, but the parent of all other virtues[3]", "the moral memory of mankind[11]", and the "sentiment which most immediately and directly prompts us to reward[12]".

Along with the growth of positive psychology, many researchers have studied the psychological effect of gratitude[2][5][6]. There are two main fields of gratitude research. The first is focused on trait-gratitude. McCullough, Emmons, and

[1] https://quotepark.com/quotes/812727-ralph-waldo-emerson-cultivate-the-habit-of-being-grateful-for-every-go/

Tsang defined trait gratitude as "the trend of feeling or noticing gratitude toward the other's benefaction role along with their positive experience and outcome", which refers to the difference in gratitude feelings between individuals[8]. The other area focuses on functional gratitude, which was first proposed by Algoe[1]. Algoe described the gratitude function based on the proposed Find-Remind-and-Bind theory. According to this theory, the feeling of gratitude reminds us of the value of our relationships with others and enriches such relationships by recalling their positive aspects.

Other studies of psychology focus on the concept of being thanked. Grant and Gino found that individuals who report habitually experiencing gratitude engage in prosocial behaviours via self-efficacy and social worth[4]. Here, we note that self-efficacy refers to a person's belief that they can be successful in achieving a particular outcome. Social worth is defined as a person's belief that they feel needed by others or evaluated positively. Grant and Gino proved that gratitude promotes prosocial behaviour via social worth rather than self-efficacy through an experiment with college students. The authors argue that a person who performs prosocial behaviour tends to do so efficiently. Therefore, when they are thanked, they realize that they have succeeded in supporting others or are evaluated well by them.

In our research, we apply Grant and Gino's psychological mechanism to a person who is thankful. In other words, we assume that a person who is thankful engages in prosocial behaviour by encouraging self-efficacy and social worth. Algoe's Find-Remind-and-Bind Theory indicates that a person who feels gratitude recognises help received from others or recognizes the value of relationships. The relationship with the supporter elicits confidence in overcoming challenges or draws attention to connections with others. Then, a person who feels gratitude engages in prosocial behaviour.

Although previous studies have explored gratitude through experiments with college students, we can also apply the psychological effect of gratitude to workers. Since workers help each other daily, we need to study the psychological mechanism of gratitude involved among them. Therefore, we studied this mechanism and evaluated whether gratitude promotes prosocial behaviour via self-efficacy and social worth through a questionnaire.

In this paper, we present our preliminary work on the mediator between gratitude and prosocial behaviour and verify the link between gratitude and prosocial behaviour among shop workers. First, we hypothesize that self-efficacy and social worth mediate the link between gratitude and prosocial behaviour. To prove the proposed theory, we asked shop staff to complete a questionnaire on gratitude, prosocial behaviour, self-efficacy, and social worth. We applied a correlation analysis and structural equation modelling (SEM) to the collected data. The analysis proves that both self-efficacy and social worth mediate the relationship between gratitude and prosocial behavior. We also confirm the existence of a link between gratitude and prosocial behaviour among shop staff.

2   Method

2.1   Questionnaire and measurements

To study the mediator between gratitude and prosocial behaviour and verify the link between gratitude and prosocial behaviour among shop workers, we designed a questionnaire. The questionnaire includes five parts focused on the following: demographic information, gratitude behaviour, self-efficacy, social worth, and prosocial behaviour.

In the demographic information section, we collected the age and gender of the subjects.

In the gratitude behaviour section, we asked the participants about the frequency of their feelings of gratitude, such as in relation to their relationships with people, salary, work-life balance, and so on. We designed this part of the questionnaire based on "The Japanese version of the Gratitude at Work Scale (GAWS)". From the GAWS, we measure the gratitude that shop staff feel based on 10 questionnaire items[7]. The subject completes the questionnaire on a five-point scale that is used to allow the individual to express how much they feel or do not feel gratitude according to a given statement. Namely, when a subject provides a high score, we conclude that they regularly feel gratitude in their working environment.

In the self-efficacy section, we asked subjects about the degree of self-efficacy felt. We designed this part of the questionnaire based on "the Scale Measuring a Sense of Generalized Self-Efficacy (SMSGSE)"[10]. From the SMSGSE, we measure self-efficacy based on the personality traits of shop staff based on seven questionnaire items. The subject completes the questionnaire on a five-point scale, which is used to allow the individual to express how much they agree or disagree with statements corresponding to self-efficacy. Namely, when a subject provides a high score, we conclude that they experience self-efficacy.

In the social worth section, we asked subjects about their degree of social worth[13]. We designed the questionnaire based on the Social Mental Act Scale (SMAS), which derives from the Value-intending Mental Act Scale. With the SMAS, we can measure how much an individual feels a sense of value in connection with others and contributes to others' well-being. Thus, we measure social worth from the SMAS with eight questionnaire items. Each subject completed the questionnaire on a five-point scale to allow each individual to express how much they agreed or disagreed with each statement. Namely, a high score denotes a sense of social worth.

In the prosocial behaviour section, we asked subjects about their degree of prosocial behaviour. We designed this part of the questionnaire based on "The Japanese Version of the Organizational Citizenship Behavior Scale (OCB Scale)"[9]. With the OCB Scale, we measure each worker's prosocial behaviour in the working environment. This scale measures five subscales for "Interpersonal help", "Conscientiousness", "Concentration on the job", "Supporting the organization", and "Cleanliness". For each subscale, the subject responds with a five-point scale, which is used to allow the individual to express how much

they perform or do not perform the activity described in the given statement. Namely, a high score denotes engagement in prosocial behaviour.

2.2   Data Collection

We collected data between 15.12.2021 and 22.12.2021. First, we recruited 1154 subjects among shop workers of a telecommunication shop. We implemented the designed questionnaire form into web-based questionnaire system and distributed it to the staff working in the telecommunication store. On 22.12.2021, 772 subjects completed the questionnaire, representing 66.9% of the recruited subjects. 53% of the subjects was female. 47% of the subjects was male.

2.3   Analysis Method

We used a correlation analysis and SEM to validate our hypothesis. First, we studied the correlations between parameters through a correlation analysis. Based on Cohen's effect size, we evaluated Pearson's r values. A value of 0.10 corresponds to a small value. A value of 0.30 corresponds to a moderate value. A value of 0.50 corresponds to a high value.

Second, we analyzed the link between gratitude and prosocial behavior via SEM. We assume that gratitude encourages prosocial behaviour via self-efficacy or social worth. We evaluated the assumed model based on the comparative fit index (CFI), Tucker-Lewis index (TLI), root-mean-square error of approximation (RMSEA), standardized root-mean-square residual (SRMR), Akaike information criterion (AIC), and Bayesian information criterion (BIC). According to Hu and Bentler, when the CFI and TLI are greater than 0.95, the RMSEA is less than 0.06, and the SRMR is less than 0.08, the data adapt to the model. We select the model that has the lowest AIC and BIC as the most adapted model. Based on the abovementioned six adaptation degrees, we determine the best SEM model.

3   Result

Table 1. The correlation between each parameter and descriptive statistics

# Variables	2	3	4	5	6	7	8	M	SD	α
1 Gratitude	.33***	.46***	.44***	.38***	.38***	.52***	.23***	3.78	0.82	.91
2 Self-efficacy	-	.27***	.38***	.21***	.25***	.35***	.13***	2.97	0.72	.84
3 Social worth		-	.47***	.44***	.49***	.39***	.33***	3.92	0.60	.82
4 Interpersonal help			-	.63***	.65***	.70***	.48***	3.76	0.65	.85
5 Conscientiousness				-	.73***	.51***	.59***	4.02	0.63	.82
6 Concentration on the job					-	.45***	.63***	4.34	0.56	.82
7 Supporting the organization						-	.36***	3.22	0.75	.81
8 Cleanliness							-	4.21	0.75	.82

Table 2. Goodness-of-fit on the proposed model

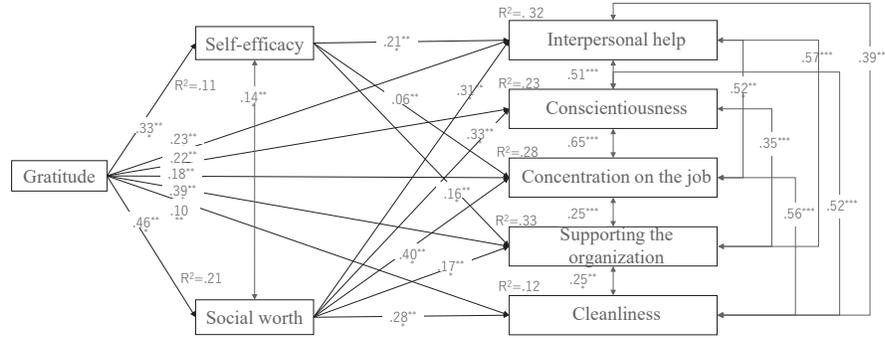| Model	CFI	TLI	RMSEA	SRMR	AIC	BIC
1	1.00	0.86	0.14	0.03	8118.30	8276.36
2	1.00	0.95	0.08	0.03	8116.90	8265.66
3	1.00	1.00	0.02	0.01	8103.57	8256.98

Fig. 1. Model No.3

First, we validate the reliability of each parameter. The internal consistency level of alpha value ranges between 0.81 and 0.91, which means that it exhibits sufficient reliability. Then, we calculate the average and standard deviation of each parameter and validate the corresponding correlation. Table 1 shows the result. Through correlation analysis, we find position correlations ($r = .21 \sim 73, p < .001$).

Second, we evaluate the proposed path model: there are links between gratitude and prosocial behaviour via self-efficacy and social worth. The results of the SEM analysis are shown in Table 2. Of the three models, Model 3 adapts most to the data.

Figure 1 shows Model 3. Unlike for Models 1 and 2, we assume a correlation between self-efficacy and social worth in Model 3.

In Model 3, gratitude has a positive effect on self-efficacy ($\beta = .33, p < .001$) and social worth ($\beta = .46, p < .001$). In addition, gratitude has a positive effect on interpersonal help ($\beta = .23, p < .001$), conscientiousness ($\beta = .22, p < .001$), concentration on the job ($\beta = .18, p < .001$), supporting the organization ($\beta = .39, p < .001$), and cleanliness ($\beta = .10, p < .001$). Moreover, self-efficacy has a positive effect on interpersonal help ($\beta = .21, p < .001$), concentration on the job ($\beta = .06, p < .001$), and supporting the organization ($\beta = .16, p < .001$). In contrast, social worth has a positive effect on interpersonal help ($\beta = .31, p < .001$), conscientiousness ($\beta = .33, p < .001$), concentration on the job ($\beta =$

$.40, p < .001$), supporting the organization ($\beta = .17, p < .001$), and cleanliness ($\beta = .28, p < .001$).

From the above results, we determine that gratitude predicts prosocial behavior via self-efficacy and social worth.

4   Discussion

In this research, we investigated our hypothesis of shop workers: Gratitude encourages prosocial behaviour via self-efficacy and social worth.

Through SEM analysis, we validated the two psychological processes. For the first process, gratitude in the working environment promotes prosocial behaviour via self-efficacy. From this process, we confirm that gratitude does not promote "conscientiousness" or "cleanliness" in terms of prosocial behaviour. In contrast, gratitude promotes "interpersonal help", "concentration on the job", and "supporting the organization". These results indicate the following: even when shop staff experience challenges with their work, they have the confidence to overcome them through support from their colleagues. Furthermore, with this confidence, they engage in their daily work and help their colleagues.

For the second process, gratitude in the work environment promotes prosocial behaviour via social worth. For this process, in contrast to self-efficacy, we confirm that gratitude promotes prosocial behaviour in the work environment. When gratitude results in prosocial behaviour via social worth, shop staff tend to regard relationships with their family, friends and colleagues as important. In other words, shop staff who value interpersonal relationships engage in prosocial behaviour towards their colleagues.

In summary, the proposed model proves the following for shop staff who feel gratitude: They notice that they are supported by others. They have confidence to overcome obstacles. They help other staff (prosocial behaviour) since they value interpersonal relationships with others.

Regarding behaviour change, we find that we can utilize two different intervention techniques to encourage prosocial behaviour. For the first technique, we encourage staff to realize their prosocial behaviour by stimulating self-efficacy. For example, if a staff member has a high self-efficacy score, a message such as "Send your gratitude to your colleague! You can do it!" can be impactful. Staff can also be encouraged to engage in prosocial behaviour by stimulating their social worth. For example, for a staff member with a high social worth score, a message such as "Send your gratitude to your colleague! Your colleague will appreciate it!" can be helpful. Based on these findings, we plan to design behaviour change applications as a next research step. A chatbot-based communication application will be an example. In the app., the chatbot stimulates the staff to express gratitude to the other staff. In the stimulus messages, we can utilize the techniques found in this study.

References

1. Algoe, S.B.: Find, Remind, and Bind: The Functions of Gratitude in Everyday Relationships. Social and Personality Psychology Compass **6**(6), 455–469 (6 2012). https://doi.org/10.1111/J.1751-9004.2012.00439.X, /record/2012-14720-003

2. Bartlett, M.Y., DeSteno, D.: Gratitude and prosocial behavior : Helping when it costs you. Psychological Science **17**(4), 319–325 (4 2006). https://doi.org/10.1111/j.1467-9280.2006.01705.x, https://journals.sagepub.com/doi/10.1111/j.1467-9280.2006.01705.x

3. Cicero M: The Orations of Marcus Tullius Cicero (1851)

4. Grant, A.M., Gino, F.: A little thanks goes a long way: Explaining why gratitude expressions motivate prosocial behavior. Journal of personality and social psychology **98**(6), 946–955 (6 2010). https://doi.org/10.1037/A0017935, https://pubmed.ncbi.nlm.nih.gov/20515249/

5. Komase, Y., Watanabe, K., Hori, D., Nozawa, K., Hidaka, Y., Iida, M., Imamura, K., Kawakami, N.: Effects of gratitude intervention on mental health and well-being among workers: A systematic review. Journal of Occupational Health **63**(1), e12290 (1 2021). https://doi.org/10.1002/1348-9585.12290, https://onlinelibrary.wiley.com/doi/full/10.1002/1348-9585.12290 https://onlinelibrary.wiley.com/doi/abs/10.1002/1348-9585.12290 https://onlinelibrary.wiley.com/doi/10.1002/1348-9585.12290

6. Komase, Y., Watanabe, K., Imamura, K., Kawakami, N.: Effects of a Newly Developed Gratitude Intervention Program on Work Engagement Among Japanese Workers: A Pre- and Posttest Study. Journal of occupational and environmental medicine **61**(9), E378–E383 (9 2019). https://doi.org/10.1097/JOM.0000000000001661, https://pubmed.ncbi.nlm.nih.gov/31306267/

7. Komase, Y., Watanabe, K., Sasaki, N., Kawakami, N.: Reliability and validity of the Japanese version of the Gratitude at Work Scale (GAWS). Journal of Occupational Health **62**(1), e12185 (1 2020). https://doi.org/10.1002/1348-9585.12185, https://doi.org/10.1002/1348-9585.12185

8. McCullough, M.E., Emmons, R.A., Tsang, J.A.: The grateful disposition: a conceptual and empirical topography. Journal of personality and social psychology **82**(1), 112–127 (2002). https://doi.org/10.1037//0022-3514.82.1.112, https://pubmed.ncbi.nlm.nih.gov/11811629/

9. Organ, D.W.: Organizational citizenship behavior: The good soldier syndrome. - PsycNET (1988), https://psycnet.apa.org/record/1988-97376-000

10. Sherer, M., Maddux, J.E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., Rogers, R.W.: The Self-Efficacy Scale: Construction and Validation:. http://dx.doi.org/10.2466/pr0.1982.51.2.663 **51**(2), 663–671 (8 2016). https://doi.org/10.2466/PR0.1982.51.2.663, https://journals.sagepub.com/doi/10.2466/pr0.1982.51.2.663

11. Simmel G: The Gift: An Interdisciplinary Perspective (1996)

12. Smith, A., Hanley, R.P.: The theory of moral sentiments p. 494 (1976)

13. Spranger, E.: Lebensformen Geisteswissenschaftliche Psychologie Und Ethik der Persönlichkeit (1925), https://philpapers.org/rec/SPRLGP