

The Multilevel Analysis of Surface Acting and Mental Health: A Moderation of Group Emotional Contagion

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Abstract: - The purpose of this study is to investigate the relationship among surface acting, mental health, and group emotional contagion. According to the job demand-resource model and social information processing theory, this study attempts to establish a comprehensive research framework among these variables, and furthermore tests the moderating effect of group emotional contagion. Experience sampling methodology (ESM) will be employed to track 118 service providers over the period of ten workdays by questionnaire, and this study conducted multilevel analysis. The results showed that surface acting will negatively affect the mental health. In addition, the positive group emotional contagion have significant moderating effect on the relationship among surface acting and mental health. However, the moderating effect of negative group emotional contagion is not significant. Finally, this study discusses managerial implications and highlights future research suggestions.

Key-Words: surface acting, mental health, group emotional contagion

1. Introduction

According to National Bureau of Statistics of China, the service industry in China accounts for 51.6% of overall Gross Domestic Product (GDP) in 2016 (NBS, 2017). The rise of the service industry also means a large increase in the number of workers engaged in the service industry. Accordingly, we have decided to single out the service industry in China as the critical issue and the target for our research. In addition to traditional mental and physical labor, the service industry needs to carry out emotional labor, which accounts for a large part of the work. Furthermore, emotional labor affects employees' morale, consumers' perceptions of the firm and brand, and employees' job satisfaction and job performance. Within that, emotional labor is a key issue concerned by researchers. Hochschild (1983) had defined emotional labor as the process of how employees adjust their emotions to meet organizational emotional regulations. Emotional labor can be divided into two categories, deep acting and surface acting (Hochschild, 1983). Deep acting refers to the transformation of employees' self-cognition to make them serve customers sincerely. On the other hand, surface acting is exhibited by employees' merely adjusting their displayed emotions. As reported by previous researches, deep acting leads to positive effects (Bono & Vey, 2007; Chau et al., 2009; Totterdell & Holman, 2003) while surface acting

tends to cause negative effects (Grandey, 2003; Bono & Vey, 2005; Hülshager & Schewe, 2011; Wagner et al., 2014). In comparison with surface acting, deep acting has a weak relationship with impaired well-being, while work attitude has a positive relationship with emotional performance and customer satisfaction (Hülshager & Schewe, 2011). Based on the reasons mentioned above, our research mainly places emphasis on the negative impact that surface acting brings about. What's more, our research also aims to seek for possible ways to ease the negative influence caused by surface acting.

Hochschild (1983) pointed out that the inconsistency between felt emotion and displayed emotion of a surface actor results in his or her extra devotion of resource by displaying appropriate expression regulated by organizations. Hence, the efforts made to deal with their emotions consume employees' mental resource, which in the long run, may result in employees' emotional exhaustion (Côté, 2005; Grandey, 2003; Martínez-Inigo, Totterdell, Alcover, & Holman, 2007). With that in mind, surface acting not only exhausts employees' emotions at work, but also negatively influences employees in other ways, known as spillover effects. As defined by scholars, the spillover effect means that employees' experiences at work will influence them even when they are off duty (Eby, Maher, & Butts, 2010; Greenhaus & Beutell, 1985; Ilies et al.,

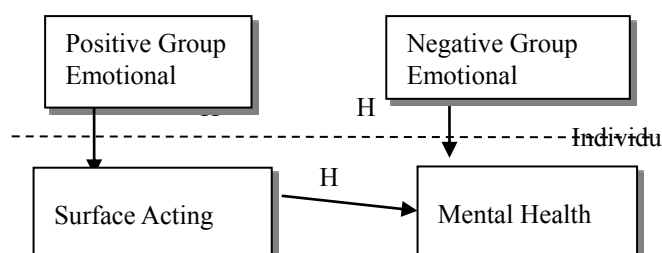
2007; Ilies, Wilson, & Wagner, 2009; Kossek & Ozeki, 1998). Comparing to the time spent at their workplace, employees have more time apart from work. In such manner, the spillover effects, being negative, will possibly be detrimental to ones' mental health.

Till this day, only few researchers have examined the moderator of the relationship between surface acting and mental health. However, in recent years, more and more organizations have adopted the concept of working as a group to improve both the organization's flexibility and its efficiency. Based on social information processing theory, it focuses on how employees are influenced by the cognitions and attitudes of others in their organizational context (Shetzer, 1993). In situations of positive group emotional contagion, employees will perceive support from their team members, improve cooperation, decrease conflict, and improve helping behavior (Chen, Lam, Naumann, & Schaubroeck, 2005; George, 1992).

Therefore, it is important to investigate emotions and styles of group members, because they will affect the feelings and thoughts of employees. In other words, depending on other group members, employees will also experience different feelings and emotional contagion, and finally present different behaviors (Sy & Saavedra, 2005). Especially, service industry employees are frequently under the emotional labor and negative mental health situations. At that time, employees will more easy to be influenced from group emotional contagion. Thus, according to the social information processing theory, if employees perceive positive group emotional contagion and feel team's support and encouragement, they may ease negative mental health caused by emotional labor. On the contrary, if employees perceive negative emotions, they may strengthen the negative mental health caused by emotional labor. More empirical research needs to be conducted to better understand the moderating effect of group emotional contagion on the relationship between surface acting and mental health. As surface actors devote abundant efforts to adjust their individual emotions, we expect that positive group emotional contagion is able to play a dominant role in easing the negative impacts that might do harm to the surface actors.

Using a multilevel analysis design, we based our research on the social information processing theory to clarify the negative impact of surface acting on mental health, and try to figure whether positive group emotional contagion can buffer this negative relationship, and negative group emotional contagion

may enhance this negative relationship. Our research framework is presented as follows (Figure 1):



2. Literature Review (Hypotheses)

2.1. Surface Acting of Emotional Labor toward Employees' Mental Health

According to Occupational Stress Indicator (Cooper, Sloan, & Williams, 1988; Lu, Tseng & Cooper, 1999), this research focuses on the aftermaths of undesirable mental health to explore whether surface acting from emotional labor would cause negative influence on employees' mental health. It is generally accepted that prolonged or intense stress can have a negative impact on an individual's mental and physical health (Health and Safety Executive, 2001; Cooper et al., 2001). Occupational stress is indeed an identical factor toward employee's workplace attitude and psychosomatic health (Lu, Cooper, Kao, & Zhou, 2003). Specifically, continuous occupational stress would cause negative influence on individual mental health and behavior (Jex & Crossley, 2005).

Zapf (2002) argued that, essentially, emotional labor is employee emotional regulation under the behavior management objectives in companies, and it also reveals the important aspect of emotional labor. Employees need to take efforts and resources to adjust their emotions, and finally achieve organizational goals. This kind of effort has close relationship with mental health. Heavy load or long time emotional labor, especially emotional disorders, often leads to serious psychological problems, such as emotional exhaustion, depersonalization, and low job satisfaction.

Cooper et al., (2001) and van der Doef & Maes (1999) stated that the effect of occupational stress could substantially be divided into three categories: first, physical health and cardiovascular disease (Hall, Johnson, & Tsou, 1993; Johnson & Hall, 1988; Kristensen, 1995; Schnall, Landsbergis, & Baker, 1994); second, mental well-being, anxiety, and upset (Theorell, Harms-Ringdahl, Ahlberg-Hulten, & Westin, 1991); lastly, the third category relates to

workplace behavior, retreatment, and resignation (Dekker & Schaufeli, 1995; Probst & Lawler, 2006).

Obviously, the mental health problems caused by emotional labor are important to both individuals and organizations. Gross and Munoz (1995) argued that if people have mental health problems, they will be difficult to work effectively and innovative. It is also difficult to maintain a satisfied interpersonal relationship. For individuals, surface acting will make employees feel tired, physical and mental tension, and frustrated for career development. And then it will affect the work efficiency and organizational climate. In view of this, it is necessary for enterprises to manage employees' emotional labor to improve employees' work efficiency and work motivation.

Furthermore, in relevant practical researches of occupational stress and psychosomatic health, researchers use psychosomatic symptoms as indicators and affirm that occupational stress is positively related to psychosomatic symptoms, and that the relationship between these two variables is negative (Siu, Lu, & Cooper, 1999; Lu, Kao, Chang, Wu, & Cooper, 2008). As a result, we infer that higher occupational stress would cause more psychosomatic symptoms.

In sum, surface acting is expected to induce emotional exhaustion (Brotheridge & Grandey, 2002). As emotional exhaustion gets higher, employees might be under higher occupational stress. Studies have shown that occupational stress might cause negative influence on psychosomatic health. Taken together, we came up with the following hypothesis:

Hypothesis 1: Surface acting from emotional labor will cause negative influence on employees' mental health.

2.2. Moderating Effect of Group Emotional Contagion

Moving on, when service employees are required to regulate their inner emotions and show positive facial expression to customers, their personal resources are gradually depleted and problems affecting mental health may occur. However, according to the job demand-resource model, external resources such as social support may trigger motivational process and cause job-related learning, work engagement, and organizational commitment (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Taris & Feij, 2004). If an employee can receive collegial, or even organizational support, this may reduce the negative influence of surface acting.

Therefore, positive group emotional contagion is proposed as a contextual factor to moderate the negative relationship between surface acting and mental health. The more positive emotional contagion exists in a group, the more optimistic and confident its members are. It helps employees to strongly believe that their work performance is feasible, and works to meet organization's expectation (George & Brief, 1996; Kelly & Barsade, 2001). That is, the positive atmosphere in a group can infect group members. In addition, positive group emotional contagion and emotion foster personal development; people with positive mood are more successful in different domains, such as work performance and health (Lyubomirsky, King, & Diener, 2005).

By building positive emotions, it is especially useful to prevent health problems from arising (Fredrickson, 2000). Positive group emotional contagion is an external source that is provided to the members within the group, and the positive emotions it spreads is capable of influencing its members. When group members feel more positive emotions, they have less likelihood to suffer from health problems. Therefore, it is assumed that the higher the positive group emotional contagion, the more resource an employee can reallocate; subsequently, the supplemented resource can buffer the stress resulted from daily surface acting. Taken together, the following hypothesis is proposed:

Hypothesis 2: Positive group emotional contagion will moderate the relationship between surface acting and mental health: this relationship will be weaker when positive group emotional contagion is higher.

Furthermore, social information processing theory suggests that people are influenced by the cognitions and attitudes of others in their organizational context (Salancik and Pfeffer, 1978; Shetzer, 1993). Thus, employees are influenced by the emotions and behaviors of their leaders and colleagues. When employees present surface acting, the accumulated working pressures are significant. If at this time, employees perceive the negative group emotional contagion, it will more likely to have the negative impact on the mental health. Therefore, we proposed as follow:

Hypothesis 3: Negative group emotional contagion will moderate surface acting and mental health: this relationship will be stronger when negative group emotional contagion is higher.

3. Methods

3.1. Sample and procedures

To enhance the generalizability of our findings, we intend to choose first-line service providers from different industries as our sample, some of which include: education industry, hospitality industry, insurance industry and so forth. These individuals in particular have plenty of opportunities to interact with customers and are required to express more positive emotions than the others. Given that they need to smile all the time while being at work, we decided to target service providers, who engage in more surface acting at work as our target sample. Data were collected from 118 employees in service industrial companies by questionnaire.

In our research, experience sampling methodology (ESM) will be employed to track 118 service providers over the period of ten workdays (roughly two weeks). According to Clarke & Haworth (1994), such method can collect data from specific context, avoiding participants from distorting their answer or answering the desired question when they are asked to self-report their state in a specific time. Based on this, our procedure will follow this manner: we will first send out the questionnaire with the introduction of our research, background information, and social desirability scale to 118 people on the first day. In the following nine days, we will keep tracking their state of surface acting and state of well-being on a daily basis.

3.2. Measures

The following measures were constructed for the study's independent, dependent, and control variables:

Surface Acting. We will use Grandey (2003)'s emotional labor scale to measure the daily surface acting exhibited by individuals. It will be measured immediately after each work shift. Because we would like to focus on daily surface acting, we add the word "today" into each item in our questionnaire so that it will be more suitable for our research. Responses will be recorded on a 5 point Likert Scale, ranging from 1 (very difficult) to 5 (very easy). The Cronbach's alpha for the scale was 0.91.

Daily Mental Health. We will use the second version of the Occupational Stress Index (OSI) scale, developed by Lu, Tseng & Cooper (1999) to evaluate the state of health after work. In our research, we would like to investigate the relationship between daily surface acting and mental health. Because the state of health cannot be evaluated easily

immediately after work, we choose to ask employees to evaluate their state the next day before heading to work. For example, for the state of health after work on Monday, we ask them to evaluate themselves before work on Tuesday. For each item, participants are given choices between yes or not. The higher the score, the lower their state of mental health and well-being. The Cronbach's alpha for this scale was 0.87.

Positive group emotional contagion. Emotional contagion scale (ECS) was developed by Doherty (1997) which includes the five basic emotions of love, happiness, anger, fear and sadness, which assesses the susceptibility to 'catch' the emotions expressed by others. It was finally developed into a 6-item version to test two sub-dimensions, love and happiness. Sample items include the following: "When someone smiles warmly at me, I smile back and feel warm inside." The response options range from 1 to 5 (1= strongly disagree, 5= strongly agree). Alpha reliabilities were 0.931 for positive group emotional contagion.

Negative group emotional contagion. We still adopt emotional contagion scale (ECS) to test negative group emotional contagion. It was finally developed into a 9-item version, which included three sub-dimensions, anger, fear and sadness. Sample items include the following: "I tense when overhearing an angry quarrel." The response options range from 1 to 5 (1= strongly disagree, 5= strongly agree). Alpha reliabilities were 0.916 for negative group emotional contagion.

Control variables. To rule out the influence of external variables at the individual level, we will include gender, education level, and occupational tenure as our control variables, since they might influence service providers' surface acting. In the case of occupational tenure, this reflects service providers' relevant experience and knowledge in terms of dealing with difficult customers and regulating their behaviors. Strictly speaking, they might have a higher probability to engage in surface acting.

In addition to what's mentioned above, we will also include social desirability as our control variable. We will use a scale to measure the social desirability of participants. Some phrases include: "It is sometimes hard for me to go on with my work if I am not encouraged." "Sometimes feel resentful when I don't get my way." For each item, participants are given choices between yes or not. The Cronbach's alpha for this scale was 0.83. At the unit level, since unit size might influence the formation of group emotional contagion (George, 1996), we will also

include it as a control variable in our research.

4. Data analysis and Results

In our research, we would like to investigate whether positive group emotional contagion will affect the relationship between surface acting and well-being. Along with that, we would like to rule out the influence of control variables in the individual level. So, our data crosses the group, individual, and daily (within individual) level, which constitutes a multilevel research model. Because by regression analysis alone, we cannot deal with the multilevel model (Hofmann, 1997), we will use the HLM model to analyze our data, which can solve statistical independent problems and also provide a more precise analysis. The data for this study were collected from service industrial employees in China.

We conduct a series of CFAs to assess the distinctiveness of the study variables. Results showed that the hypothesized three-factor model of surface acting, positive group emotional contagion, and mental health, $\chi^2(435)=1251.73$, $p<0.001$, CFI=0.81, IFI=0.84 and RMSEA=0.08, yielded a better fit to the data than any other model including the one-factor model. Therefore, the results of the CFA supported the three factor model for subsequent analyses. Table 1 presents the descriptive statistics and correlations for all the variables at the individual level. Of the respondents, 52% were females; 21 % of the participants were 20-29 years old, 35% were 30-39 years old, 19% were 40-49 years old. With regard to education, 13% of respondents had completed only primary school and 54% had completed high school.

Table 1: Descriptive statistics and correlation matrix of each dimension

	Mean	S.D.	skewne ss	kurtos is	1.	2.	3.	4
1	3.883	0.78	-0.692	0.802	1			
2	3.857	0.61	-0.410	0.700	-0.643*	1		
3	3.652	0.64	-0.497	0.582	-0.646*	0.609**	1	
4	3.371	0.73	-0.528	0.634	0.213*	-0.285*	-0.442*	1

1. Surface acting; 2. Positive group emotional contagion; 3. Mental health; 4. Negative group emotional contagion (P* $<.05$; P** $<.01$)

Results of one-way ANOVA showed significant variations in positive group emotional contagion among 52 companies: [F(52, 435)=2.87, $p<0.001$]. Homogeneity of this variable within each company

was assessed with rwg (LeBreton, James and Lindell 2005), which ranged from 0.72 to 0.91. Intraclass correlation (ICC1) and reliability of the mean (ICC2; Bliese 2000) for the scale were 0.19 and 0.73, respectively; average variance extracted (AVE) = 0.72, exceeding levels suggested by Bliese (2000); these results suggested that positive group emotional contagion was appropriate to be aggregated to the organizational level.

The results of running null models revealed significant between-firm variances in the Level-1 independent variables and the outcome, justifying the use of HLM. Hypothesis 1 proposed that surface acting was negative related to mental health. We tested this hypothesis using the 'intercepts-as-outcomes' model. After the control variables were entered, the HLM results (Model 2 in Table 2) showed that surface acting were significantly negative associated with mental health, thus hypothesis 1 was hence confirmed.

In Hypothesis 2, we proposed that organizational-level positive group emotional contagion would moderate the relationships between individual-level surface acting and mental health. Hypothesis 2 was supported. As shown in Model 4 in Table 2, positive group emotional contagion and the interaction surface acting* positive group emotional contagion were significantly related to mental health. The whole meso-moderated model explained 52% of the variance in the outcome variable. Therefore, the effect of surface acting on mental health was lighter when the level of positive group emotional contagion was high and vice versa.

In Hypothesis 3, we proposed that organizational-level negative group emotional contagion would moderate the relationships between individual-level surface acting and mental health. As shown in Model 4 in Table 2, negative group emotional contagion was significantly negative related to mental health. However, the interaction surface acting* negative group emotional contagion were not significantly related to mental health. Therefore, Hypothesis 3 was not supported.

Table 2: HLM results

Variable	Mental health			
	Mode 12	Mode 11	Mode 13	Model 4
Level 1				
Intercept	.276*	-.672**	.108*	.106*
Gender	.001	-.025	-.043	-.032
Education	-.008	.067	.076	.081
Age	-.000	.018	.013	.017
Marital Status	-.052	-.132*	-.118*	-.114*
Tenure	-.005	-.009	-.012	-.018
Position	.032	.161*	.146*	.152*
Surface acting	-.484**		-.124*	-.129*
Level 2				
Firm size	.003	.002	.009	.012
Industry type	.072	.153	-.092	-.087
PGEC			.521*	.315*
NGEC			*	-.142*
PGEC*			-.146*	.227*
SA			*	-.014
NGEC* SA				
Covariance-component model	1085.4765	693.4243	1088.4274	1097.2458

Note: PGEC=positive group emotional contagion; NGEC=negative group emotional contagion; SA: surface acting. For Level 1, N=6435; for Level 2, N=52. *p<.05; **p<.01; ***p<.001.

has no significant moderating effect. The following are discussed theoretical and practical implications, limitations of the study, and future research suggestions.

5.1 Theoretical and practical implication

The purpose of this study is to investigate the effect of cross-level surface acting and mental health, and further explores the positive group emotional contagion for the adjustable intermediary, and as such can release the negative relationship between surface acting. It is generally accepted that stress can have a negative impact on an individual's mental health (Health and Safety Executive, 2001; Cooper et al., 2001). Researchers also had confirmed that occupational stress is indeed an identical factor toward employee's psychosomatic health (Lu, Cooper, Kao, & Zhou, 2003). Specifically, continuous occupational stress and surface acting would cause negative influence on individual mental health (Jex & Crossley, 2005). Therefore, this study presents theoretical views of surfacing acting and mental health to make up the shortfall in the past studies.

Comprehensively, positive group emotional contagion can be seen as an essential supplementary job resource. By building positive emotions, it is especially useful to prevent health problems from arising (Fredrickson, 2000). Therefore, based on the JD-R model and social information processing theory, research results present that the higher the positive group emotional contagion, the more resource an employee can reallocate; subsequently, the supplemented resource can buffer the stress resulted from daily surface acting.

Work redesign and vision appeal have stimulating effects for employees. From the point of work redesign, it is necessary to emphasize the meaning of work, and arrange more team cooperation to create the positive team atmosphere. It is good for employees to do some jobs completely and autonomous, and employees can finish a meaningful job and work in their own way. It will increase employees' identity and responsibility. This practice will motivate them to work independently in their team, and put effort to adjust their emotions to achieve their goals.

Furthermore, the social and team support can facilitate the individual's external motivation into internal motivation, which is beneficial to maintain individual mental health. According to self-determination theory (Ryan & Deci, 2000), when individuals feel the sense of competence and autonomy, external motivation can be internalized

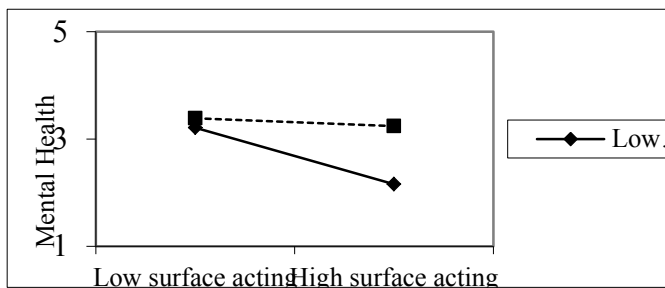


Figure 2. Interaction plots of surface acting, mental health and PGEC (positive group emotional contagion)

5. Discussion

The purpose of this study is to investigate the effect of cross-level surface acting, positive group emotional contagion and mental health. Furthermore, this study also discuss about the moderating effect of positive group emotional contagion. The results show that: (1) surface acting will negatively influence mental health (H1). When expressed service industrial employee preform surfacing acting, it will negative influence their mental health; (2) positive group emotional contagion will moderating influence the relationship between surface acting and mental health (H2); (3) negative group emotional contagion

and integrated into internal motivation. Individuals can also obtain direct practical support or emotional support from the social and group support, and the group positive atmosphere, which has the protective effects on mental health. Team support and group positive emotional contagion are believed to enable individuals to better manage job stress and increase their sense of personal control.

Wharton and Erickson (1993) argued that when employees' feelings and presenting rules are inconsistent, employees will rely on other people's support and positive emotional contagion, and it will experience less psychological pressure. Grandey (2003) also proposed that the relationship between emotional labor and job burnout will be released when employees perceive that the social environment and group is positive or supportive. On the other hand, if a work is complete, meaningful, and can reflect the vision of the enterprise, and get the positive group emotional contagion and encouragement, it will reduce the possibility of employee mental health problems.

5.2 Limitations and Suggestions

Some limitations of this study were obtained: First, this study begin with self-report questionnaire to collect data, it may try to respondent's questionnaire seeking correlations between variables, which may form deviation data generating common method variance. Conducting confirmatory factor analysis of Harman's one-factor test, the analysis results also showed a single facet of information with moderately poor. Based on the above, this study should be no common method variance problems. Second, although the present study is a cross-section of the study, the gathering information at a particular point in time is basically representing causal relationship.

Here are some recommendations for future research, and it hoping to contribute to the existing literature and practice: First, future research may try to explore some of the consequences of variables. The second half of the study focuses on the more personal level and other variables, it lacks of organizational factors. For example, empowerment, organizational support, and organizational culture. The future study is recommended mainly focused on organizational factors to explore the dependent variable. Secondly, because of the quality of the multilevel analysis, the present study and samples were issued mainly to Taiwan regions. It needs to consider the different countries of the organizational culture and cultural differences.

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