| **RESEARCH ARTICLE**

The Effect of Team Happy Nut: Leader Self-deprecating Humor and Team Performance

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| **ABSTRACT**

Recently, several organizations have used humorous leaders to improve the effectiveness of team operations. Based on the leader-member exchange theory and social interaction theory, this study examines the relationship between leader self-deprecating humor and team performance and investigates the moderating effects of team harmony and team efficacy. The results using three-wave and 369 valid leader-employee dyads (113 team leaders and 369 employees) from 12 companies in Taiwan showed that: (1) leader self-deprecating humor positively affects trust in the leader; (2) trust in the leader positively affects team performance; (3) trust in the leader mediates the relationship between leader self-deprecating humor and team performance; (4) Team harmony moderates the relationship between leader self-deprecating humor and trust in the leader; and (5) Team efficacy moderates the relationship between trust in the leader and team performance. Implications for behavioral researchers and human resource managers are discussed.

1. Introduction

Leader humor originated in Ancient Greece. At that time, many philosophers and related scholars discussed how the sense of humor of city-state owners affected citizens' discipline, norms, and principles (McGhee, 1979; Chapman & Foot, 1976). Later, the topic of leader humor began to receive attention and discussion among organizational and management scholars, and several researchers supported that leader humor brings many positive benefits to organizations, including increased job satisfaction (Burford, 1987; Decker, 1987; Davis & Kleiner, 1989), leader-member relationships (Wisse & Rietzshel, 2014), team cohesiveness (Fracis, 1994), team performance (Avolio, Howell & Sosik, 1999; Ramlall, 2008; Vecchio, Justin & Pearce, 2009), psychological climate (Taylor & Bain, 2003), and better interpersonal relationships (Cooper, 2005; Ziv, 1984). In practice, many modern organizations such as Southwest Airlines, Yahoo, Brady Company, Domino's Pizza, Sun Microsystem, Ben and Jerry's, Odetics, and Kodak have adopted humorous leaders as an important strategy to improve individual/organizational performance and team operational efficiency (Smith & Khojasteh, 2014; Katz, 2000; Avolio et al., 1999; Hoyt & Blascovich, 2007).

Although several scholars and practitioners support the positive benefits of leader humor, it is unknown whether different leader humor produces different effects, which is the focus of this study. Martin et al. (2003) claimed that leader humor is divided into four types: (1) affiliative humor: external positive humor, conveying extroversion, happiness, intimacy, and interpersonal satisfaction; (2) self-enhancing humor: internal positive humor, with a positive humor attitude to face and break through an individual's pressure or adversity; (3) aggressive humor: external negative humor, mocking others in a negative and hurtful way; and (4) self-deprecating (SD) humor: internal negative humor, laughing at oneself to please others, and hiding negative feelings and problems with humorous behavior. This research focuses on special leader humor, namely leader SD humor, to understand its effect. Leader SD humor is defined as making jokes about a leader's failure and setbacks and talking about these funny stories and comments with others (Gkorezis & Bellou, 2016). Leader SD humor has a negative connotation, but what is particularly interesting

is that SD humorous leaders treat mock their personal circumstances to make others happy. They face their shortcomings and failures honestly and make jokes to treat others in a way that does not harm them. This display of wisdom and artistic leadership is unique and valuable for future research. However, little research has been conducted on leader-SD humor so far; for example, Hoption, Barling, and Turner (2013) found that leader-SD humor is related to transformational leadership; Gkorezis and Bellou (2016) found that leader-SD humor is related to perceived leadership effectiveness; Greengross and Miller (2008) found that the use of SD humor by senior executives increases long-term attractiveness; Lundy, Tan, and Cunningham (1998) found that male SD humorous leaders are more attractive than female SD humorous leaders; and Janes and Olson (2010) found that the use of SD humor by professors enhances students' creativity.

Based on the above discussion, the investigation of leader SD humor is still in the initial stage, and no in-depth and complete research has been conducted; further, numerous studies on leader humor exist in Western society and culture, while little related research can be found in Eastern countries or regions. Bartolo et al. (2006) pointed out that the appropriate timing for leader SD humor is also important and worth exploring. Therefore, based on these gaps in the literature, this study considers Taiwanese companies as the research subject with the aim to understand the multiple influence relationships between leader SD humor and team performance.

According to the social interaction theory (SIT), individuals' attitudes and behaviors are determined by the atmosphere and feel of their daily interactions with others (Mesmer-Magnus, Glew & Viswesvaran, 2012). In other words, when leaders frequently use SD humor in teams, they allow members to feel fresh, interesting, and playful, which increases their trust and support (Meyer, 2000; Kazarian & Martin, 2006). According to the leader-member exchange (LMX) theory, SD humorous leaders develop close and relaxed relationships with employees, making them more willing to trust and support their leaders (Lee, 2015; Gordon, 2010; Amjed & Tirmzi, 2016). Conversely, when leaders use the SD humor style, they improve members' trust in and satisfaction with their leaders so that they are willing to follow the leaders to achieve team goals and performance (Robinson & Smith-Lovin, 2001).

In a harmonious team, cooperation and coordination among members are smoother and more satisfying, and team members are also willing to work hard to achieve common team goals and success. At this point, the importance and influence of leaders may be reduced (Decker & Rotondo, 2001; Cooper, 2005). In other words, in a stable and harmonious team, members are less likely to pay attention to what the leader says and does; thus, the attractiveness and effectiveness of leader SD humor may decrease (Decker & Rotondo, 2001; Gkorezis & Bellou, 2016; Gkorezis, Petridon and Lioliou, 2016). Therefore, in the situation of team harmony, leader SD's humor makes it more difficult to enhance leader trust by telling funny failure stories. Conversely, team efficacy implies that team members have a mutually positive belief in their ability to achieve team goals and success: employees with high team efficacy tend to believe that they and the team can grow, progress, and succeed in the future (Jung & Sosik, 1999); therefore, they trust and support their leaders' guidance and help, improve their ability and knowledge to solve team tasks/problems and actively participate in team activities to strive for better performance, thereby enhancing team performance (Huang, Huang & Chang, 2019; Bunderson, 2003). That is, in a situation of team efficacy, trust in the leader has a greater impact on team performance.

Finally, in today's globalization and rapid market change, building effective teams to cope with various challenges and problems is a key to maintaining organizations' survival and competitive advantage (Mittal & Dhar, 2015; Wen, Zhou & Lu, 2017). Thus, numerous businesses seek ways to promote team success. An effective strategy is to use humorous leaders. However, is the effect of different humorous leaders the same? As this question has not been empirically studied, this study explores the substantive influence of one particular type of leader humor (leader SD humor) and investigates the negative moderating effect of team harmony and the positive moderating effect of team efficacy to explore the multiple influence relationships of leader SD humor more comprehensively. The model used in this study is illustrated in Figure 1.
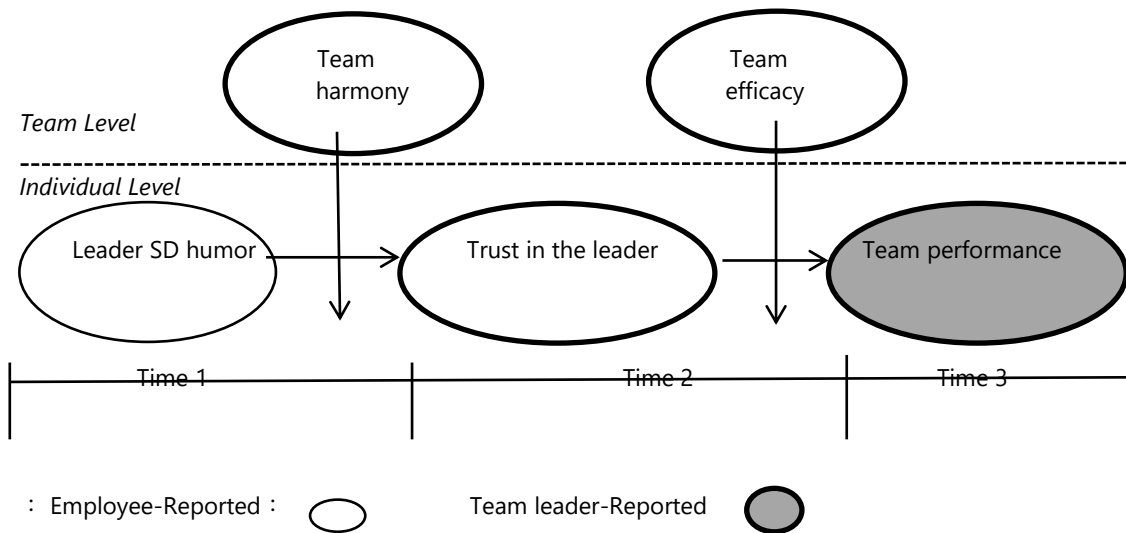
Figure 1 Conceptual model

2. **Literature Review**

2.1 Leader SD humor and trust in the leader

Leader SD humor is defined as a leader making interesting stories or comments about their shortcomings and failures (Martin et al., 2003; Ziv, 1984). Martin et al. (2003) divide the concept of humor into six categories: (1) cognitive ability, (2) funny response, (3) habitual behavior pattern, (4) trait related to positive emotion, (5) frustration tolerance, and (6) coping strategy/defense mechanism. When leaders make fun of their weaknesses and inadequacies, they win followers' trust and support for their optimistic attitude and brave behavior (Gkorezis & Bellou, 2016). This style of leadership also conveys communicative transparency and integrity, thus enhancing members' trust in and identification with the leader (Collquitt & Rodell, 2011).

Trust is the core of leadership (Dirks & Ferrin, 2002), and whether leadership can be effective depends on members' trust in the leader. Rousseau et al. (1998) define trust in the leader as team members voluntarily accepting the leader's intentions and behaviors psychologically and maintaining positive expectations for them. SD humorous leaders are more honest and confident than other leaders (Gruner-Domic, 2011); they reduce psychological distance and status differences with members, thus creating more leader–member trust relationships (Westwood, 2004; Hoption et al., 2013; Stewart, 2011). Based on the SIT, when SD humorous leaders interact with team members every day, members will gain a better understanding that leaders are good at sacrificing themselves to please others, thus making them more confident that their leaders will not harm them and will do better for their interests and future (Greengross & Miller, 2008). According to LMX theory, when leaders use the SD humor style, they build special cordial and friendly relationships with members, which leads to greater trust and satisfaction (Lyttle, 2001; Gruner-Domic, 2011). Therefore, this research hypothesizes the following:

H1: Leader SD humor is positively related to trust in the leader.

2.2 Trust in the leader and team performance

The key element of leadership is trust; the higher the members' trust in the leader, the more the leader leads the members to advance in the right direction and achieve team goals and performance (Lee, 2015). Conversely, when members doubt and distrust their leaders, it is difficult for leaders to motivate them to engage in teamwork (Wild, Erb & Bartels, 2001). According to status characteristic theory (Berger, Cohen & Zelditch, 1972), status comes from (1) an individual's influence on others, (2) an individual's ability to contribute to group goals, and (3) an individual's personality traits. In fact, most individuals want to communicate with persons of the same status/high status, generate a higher sense of trust in them and promote following positive behaviors (Bunderson, 2003). That is, members are more likely to frequently interact with high-status leaders in a team, resulting in a higher sense of security, belonging, and trust, which makes them express cooperative team behaviors and improve team performance (Dragoni, 2005; Gong, Huang & Farh, 2009). Liden et al. (2006) also point out that a large part of team performance comes from members' attitudes toward leaders, including leader trust, leader identification, and leader favorability.

When employees trust the leader, they will believe that the leader does not hurt them (Gambetta, 1998) and accept the leader's guidance to adopt a series of behaviors that are beneficial to the team/organization to improve team performance (Gillespie & Mann, 2004; Hogan et al., 1994; Moorman et al., 2013). Some scholars have also emphasized that leader trust enhances members' job satisfaction and work engagement and promotes higher team effectiveness and performance. According to LMX theory, employees with high leader trust have a sense of responsibility and reward their leader's awareness, thus producing many positive behaviors that are beneficial to the team (Colquitt et al., 2007; De Jong et al., 2016; Dirks & Ferrin, 2002), voluntarily conforming to organizational/team norms and putting effort into team activities to achieve better performance (Bennett & Robinson, 2000). Therefore, the second hypothesis is as follows:

H2: Trust in the leader is positively related to team performance.

2.3 *The mediating role of trust in the leader*
In a modern and complex working environment, work challenges and stress are constantly increasing, and interpersonal interactions and communication are more diverse. At this time, if a leader adopts the SD humor style, they will lubricate interpersonal interactions, create a warm team life and enhance members' positive attitudes and behaviors (Tracy, Myers & Scott; 2006; Greengross & Miller, 2008). According to LMX theory, leaders treating employees involves the differential treatment, including devaluing themselves to make some employees happy, and these employees also tend to reward leaders with favorable treatments, resulting in higher leader trust and efforts to improve team performance (Hoption, Barling & Turner, 2013). Therefore, the main function of SD humorous leaders is to exert management wisdom and leadership art to improve the subordinates' job performance and create team success (Hoption et al., 2013).

According to SIT, when leaders are good at telling their interesting experiences and stories of failure within the team, they may build a better leader–member trust foundation through multiple interactions with members so that members are willing to cooperate with leaders to create a high-performance team (Kim, Hon & Lee, 2010; Decker & Rotondo, 2001). From the perspective of motivation, leader SD humor can stimulate members' trust and support for the leader; in this way, members are willing to follow the leader to progress and grow together and work hard for the team's goals and high performance (Taylor & Bain, 2003; Greengross & Miller, 2008; Amjed & Tirmzl, 2016; Fredrickson, 2013). From the perspective of learning and imitation, when SD humorous leaders often laugh at themselves and are not afraid of difficulties and challenges, they lead many followers to believe them; thus, members actively participate in teamwork, pursue progress and growth or improve team performance (Stewart, 2011; Hoption et al., 2013). For example, Gkorezis and Bellou (2016) found that trust in the leader partially mediates the relationship between leader SD humor and perceived effectiveness. Therefore, this study predicts the following:

H3: Trust in the leader mediates the relationship between leader SD humor and team performance.

2.4 *The moderating role of team harmony*
Team harmony is defined as team members respecting, supporting, and helping each other and creating many successful cooperative experiences (Stewart & Barrick, 2000). Harmonious teams have several successful histories and less experience of failure; it is difficult to generate feelings and emotions toward SD's humorous leaders' failure jokes and stories, and team members are less likely to trust and support such leaders. Conversely, in an unstable and turbulent team, the possibility of conflict and failure among the members is high. Here, SD humorous leaders can play an important role, providing interesting failure stories or comments that enhance members' self-confidence and self-efficacy and, in turn, make them more trusting and supportive of their leaders (Martin et al., 2003; Janes & Olson 2010).

In a safe and harmonious team, the history of members' mutual help, cooperation, and support, as well as successful performance and achievements, is long, and the primary goal is to build a high-performance team. At this time, SD humorous leaders may be less important and attractive (Judge, LePine & Rich, 2006). In other words, in a harmonious team, members have less frustration, depression, interpersonal conflict, or failure, and as a result, they may not be able to focus on, appreciate and value a leader's SD humor style, that is, the effectiveness of leader SD humor may be reduced (Cooper, 2005); thus, leader SD humor is particularly inappropriate in harmonious teams. SD humor leaders are needed more in times of crisis to express their wisdom. Therefore, this study infers that when team harmony is high, members are less likely to perceive and empathize with the leader's SD humor style and, thus, less likely to build a leader–member trust relationship.

H4: Team harmony moderates the relationship between leader SD's humor and trust in the leader, such that the relationship between leader SD's humor and trust in the leader becomes weaker as team harmony increases.

2.5 The moderating role of team efficacy

Team efficacy or collective efficacy is defined as a team's belief that its members successfully accomplish their tasks and goals (Gully et al., 2002; Gully & Phillips, 2005). Bandura (1997) believes that team efficacy is a type of collective confidence that drives members to work hard to achieve teamwork and team goals and to use strategies and methods to accomplish tasks and challenges. In other words, high team efficacy manifests as members trusting the leader's guidance and arrangements and having a high commitment to the team's tasks and future, resulting in high-performance outcomes (Huang et al., 2019). In fact, team efficacy is an intrinsic motivator that triggers members' goal-directed behavior (DeShon et al., 2004; Porter, 2005; Seijts et al., 2004), making them believe in their leaders' direction and achieving high team performance (Payne, Youngcourt & Beaubien, 2007). Therefore, high team efficacy is particularly beneficial for encouraging members to trust and cooperate with the leader, thereby improving team performance.

Team performance comes from the long-term and continuous coordination, communication, and joint efforts of the leader and team members to achieve the team's growth and development, and team efficacy is an important psychological factor for members to pursue progress, which makes them believe in the leader and actively work hard to create more team success (Gladstein, 1984; Campion, Medsker & Higgs, 1993). Therefore, in a situation of high team efficacy, members are more likely to trust their leaders and achieve higher team performance.

H5: Team efficacy moderates the relationship between trust in the leader and team performance such that the relationship between trust in the leader and team performance becomes stronger as team efficacy increases.

3. Study

3.1 Participants and procedure

This study used convenience sampling to collect 369 employees and 113 team leaders from 12 companies in Taiwan. In the research, there are 6 technology companies and 6 service companies. Each company has 4 to 12 teams (the largest teams have 10 employees and the smallest teams have 4 employees) in the sampling. The HR manager of each company provided an e-file/note with their teams, team leaders, and members, and then the study issued this research questionnaire based on this information. Participants are willing to cooperate and confirm that their answers are confidential. To avoid common method variance, the study made a three-stage and two-source survey.

At Time 1, the study distributed 500 employee questionnaires to evaluate leader SD humor, team harmony, leader favorability, and employee demographic variables. Two months later, the study again distributed these 448 employees at Time 2 to assess the trust in the leader and team efficacy. A total of 379 questionnaires in Time 2 were collected. Two months after the completion of the Time 2 survey, the study distributed 379 employees' 140 team leader questionnaires in Time 3 to assess team performance. A total of 125 leader questionnaires in Time 3 were collected. Some scholars also claimed that temporal separation and different sources are the most effective strategies for reducing common method bias (Podsakoff et al., 2003; MacKenzie, Podsakoff & Jarvis, 2005).

According to the final survey of employees and their leaders, 379 employees and 125 leaders in the target organizations did participate in the study, so the response rates were 76% and 89%, respectively. In the questionnaire received, 10 employee questionnaires and 12 leader questionnaires were excluded because the answers to some items were blank. Therefore, the available number of questionnaires in this study is 369 employee questionnaires and 113 leader questionnaires.

Among the 369 employees who participated in the study, 51% were men, and 49% were women. Regarding age, the majority (43%) of the survey employees are between 30-40 years old, with an average age of 35.2 years (sd= 5.4). The average job tenure of the survey employees was 4.3 years (sd = 4.8). 46.2% of employees were married. Approximately 34% of employees have obtained a master's diploma education, while 38% of employees have a bachelor's degree. Of the 113 leader samples, approximately 56% were male, and the average age was 46.2 years (sd = 5.4). The average job tenure is 8.5 years (sd = 7.9).

3.2 Measures

All the questionnaires in this study are translated from the relevant original research opinions or questionnaires and developed into Chinese questionnaires through some experts and preliminary test modification.

3.2.1 Leader SD humor

This study refers to the relevant questionnaires of Martin and Gayle (1999) and Gkorezis and Bellou (2016) to develop and create the leader SD humor scale. The main purpose of this is to measure employees' evaluation of the extent to of their leader laughs at their shortcomings or tells jokes to make others happy. After the analysis of the reliability and validity, there is a total of 4 items in this dimension. For example, "My leader likes to make fun of his/her shortcomings." (α=0.91).

3.2.2 Trust in the leader

This study refers to the relevant questionnaires of Robinson and Rousseau (1994) and Dunn and Schweitzer (2005) to develop and create trust in the leader scale. The main purpose of this is to measure employees' evaluation of the extent of their voluntarily accepting the leader's intentions and behaviors psychologically and maintain positive expectations for them. After the analysis of the reliability and validity, there is a total of 5 items in this dimension. For example, "I have confidence in my leader's ability." (α=0.91).

3.2.3 Team performance

This study refers to the relevant questionnaire of Edmondson (1999) to develop and create the team performance scale. The main purpose of this is to measure team leaders' evaluation of the extent of the actual result of the team achieving the predetermined goal. After the analysis of the reliability and validity, there is a total of 5 items in this dimension. For example, "The team has achieved its goals." (α=0.90).

3.2.4 Team harmony

This study refers to the relevant opinions of Stewart and Barrick (2000) and Tjosvold (1988) to develop and create the team harmony scale. The main purpose of this is to measure employees' evaluation of the extent to which they feel members trust/ respect each other and work together well for the team's common goal. After the analysis of the reliability and validity, there is a total of 10 items in this dimension. For example, "I had much good cooperation experience in the team." (α=0.90).

3.2.5 Team efficacy

This study referred to the relevant questionnaires of Jung and Sosik (1999) and Chan (1998) to develop and create the team efficacy scale. The main purpose of this is to measure employees' evaluation of the extent to of the team accomplishes team goals, meets members' needs, and maintains its existence. After the analysis of the reliability and validity, there is a total of 5 items in this dimension. For example, "The team can effectively use members' professional abilities." (α=0.90).

3.2.6 Control variables

Since Becker et al. (2016) claim that studies relating to humanity should consider the influence of demographic variables, thus, the study controlled for employee demographic variables (gender, age, job tenure (measured in years), marital status, and education level), moreover, Hoption et al. (2013) emphasize that team members' liking and appreciation of their leader will amplify their feelings and the effects of leader SD humor. Thus, the study also controlled for leader favorability.

3.2.7 Reliability and validity analysis

To make the scale of this research reliable, the reliability analysis is carried out to determine whether the research results are consistent. As shown by the diagonal values in Table 2, Cronbach's α value of ech dimension is above 0.8, indicating good reliability. In terms of validity analysis, first, the study invited some human resources professors and HR supervisors to review and modify all questionnaire items so that the questionnaire items have expert validity. Then, the study conducted a preliminary test. When the test is in progress, 100 testers fill out the questionnaire anonymously and form a formal questionnaire after necessary modification. Finally, the study performed exploratory factor analysis (EFA) on all samples. As shown in Table 1, the KMO of each dimension is greater than 0.8, and Bartlett's sphericity test values have reached a significant level, indicating that the data is suitable for EFA. After using the maximum orthogonal variation method, the factor loading of each item is greater than 0.5, and the overall interpretation of each dimension is also high. In addition, composite reliability (CR) is greater than 0.7, and the average variance extracted (AVE) is greater than 0.5 and less than 3.3, indicating that convergent validity and discriminant validity between dimensions are better. Thus, the total validity of the study is good and reaches related standards.

Table 1 The results of the validity test

Dimension	Item	KMO	Bartlett's sphericity test	Factor Loading	Overall interpretation (%)	CR	AVE
Leader SD humor	1-4	0.87	t=546.55 (p<.01)	(.735)(.732)(.809)(.752)	30.28	0.83	0.61
Trust in the leader	1-5	0.87	t=658.35 (p<.01)	(.736)(.745)(.755)(.749)(.811)	37.96	0.83	0.58
Team performance	1-5	0.88	t=552.68 (p<.01)	(.811)(.744)(.752)(.815)(.812)	39.34	0.82	0.62
Team harmony	1-10	0.86	t=648.66 (p<.01)	(.716)(.611)(.743)(.618)(.752)(.624)(.713)(.722)(.758)(.715)	69.72	0.81	0.61
Team efficacy	1-5	0.85	t=556.28 (p<.01)	(.825)(.818)(.726)(.822)(.728)	39.19	0.82	0.54
Leader favorability	1-4	0.87	t=550.28 (p<.01)	(.712)(.838)(.815)(.746)	31.11	0.81	0.58

3.3 Data analysis methods

The data are not independent because the same leader evaluated multiple employees. To deal with data of interdependence, the study used hierarchical linear modeling (HLM) to conduct multi-level analysis to test hypotheses (Raudenbush et al., 2004; Rasbash et al., 2009). Specifically, the study used a two-level model, where the individual is at level 1 and the team is at level 2, to control individual and team factors that might confuse the research relationships. In the next main research, hypothesis testing at the same level will be tested by OLS regression, while hypothesis testing at multiple levels will be analyzed by HLM.

4. Results

4.1 Descriptive statistics and correlations

Means, standard deviations, and zero-order correlations for all measures are presented in Table 2. First, the correlation coefficient values between the dimensions did not greater than 0.8, indicating that the problem of collinearity was not significant (Maruyama, 1998). Second, as expected, both leader SD humor and trust in the leader (p<.01), leader SD humor and team performance (p<.01), trust in the leader and team performance (p<.01), team efficacy and team performance (p<.01), leader favorability and leader SD humor (p<.01) and leader favorability and team performance (p<.05) evidenced positively significant correlations. However, both leader SD humor and team harmony (p<.01) and trust in the leader and team harmony (p<.01) evidenced negatively significant correlations.

Table 2 Correlation and Descriptive Statistics

Variables	Mean	SD	1	2	3	4	5	6
1. Leader SD humor	3.21	0.43	(.91)					
2. Trust in the leader	4.22	1.15	.38**	(.91)				
3. Team performance	4.11	1.05	.36**	.35**	(.90)			
4. Team harmony	3.23	0.58	-.35**	-.39**	.07	(.90)		
5. Team efficacy	3.22	0.52	.06	.05	.41**	.05	(.90)	
6. Leader favorability	4.13	1.15	.37**	.16	.26*	.06	.05	(.90)

Note: * p<.05; **p<.01 (two-tailed); N=369 for employees, 113 for team leaders, and 12 for companies. Reliabilities are in parentheses.

4.2 The inspection of the basic characteristic

In this study, team performance received answers from team leaders. And this research believes that different teams will have differences in team performance in leaders' answers. Therefore, before the hypothesis is tested, it is necessary to understand whether team performance answered by leaders differs between different teams to confirm whether cross-level research is needed. The results found that the ICC (1) = 0.21 for team performance, which means that 21% of team performance is affected by the

variation between different teams and has a high intra-group correlation, exceeding the 0.138 recommended by Bliese (2000). Therefore, this dependent variable—team performance is suitable for HLM analysis.

In addition, this research believed that diverse teams would have differences in employees' team harmony. Therefore, it is also essential to understand whether team harmony differs between different teams to determine whether cross-level research is needed. The result found that the average rwg =0.78 (0.71~0.83, mode is 0.76), which is greater than the minimum 0.7 standard considered by James, Demaree, and Wolf (1993). It shows that in team harmony, each group of employees has a consistent viewpoint, which is suitable for aggregation into team harmony. Furthermore, $\eta2=0.25$ (F value=3.08, p<.01), indicating that there are differences between groups. Finally, ICC (1) =0.36 for team harmony, which means that 36% of team harmony is affected by the variation between different teams, which have a high degree of intra-group correlation, which exceeds the 0.138 recommended by Bliese (2000). And ICC (2) =0.68 for team harmony, indicating that the average evaluation of team harmony is credible, exceeding the 0.60 recommended by James (1982), so it is suitable for subsequent HLM analysis. However, this research also believed that different teams would have differences in employees' team efficacy. Therefore, it is also essential to understand whether team efficacy differs between different teams to determine whether cross-level research is needed. The result found that the average rwg =0.76 (0.73~0.81, mode is 0.76), $\eta2=0.23$ (F value=3.02, p<.01), ICC (1) =0.36 and ICC (2) =0.68, so it is suitable for subsequent HLM analysis.

4.3 *Hypothesis testing*
This research is a cross-level and single-level mixed study. Hypothesis 1 uses OLS regression analysis, Hypothesis 2, 4, and 5 use HLM analyses, and Hypothesis 3 uses Sobel Test and Bootstrapping method to detect the mediating effect. First, Hypothesis 1 states that the leader's SD humor is positively associated with trust in the leader. As shown in Table 3, leader SD humor positively and significantly influenced trust in the leader ($\beta=0.41$, p<.01). Therefore, hypothesis 1 is supported. In terms of control variables, job tenure and leader favorability are related to trust in the leader; representing more employees' work experience or leader favorability will enhance their trust in the leader. Hypothesis 2 states that trust in the leader is positively associated with team performance. As shown in Table 4, trust in the leader positively and significantly influenced team performance ($\gamma=0.38$, p<.01). Therefore, hypothesis 2 is supported. In terms of control variables, job tenure, education level, and leader favorability are related to team performance; representing high job tenure, education level, or leader favorability will have more team performance.

Table 3 OLS Regression Results for Trust in the Leader

Predictor	Trust in the Leader	
	Model 1	Model 2
Intercept	3.12**	3.15**
Step1 Controls		
Gender	.04	.05
Age	.03	.04
Job tenure	.08*	.09*
Marital status	.04	.05
Education level	.05	.06
Leader favorability	.11*	.13*
Step 2 Main effect		
Leader SD humor		.41**
R^2	.36**	.28**
F value	8.45	8.31

Note: * p<.05; **p<.01; N=369 for employees, 113 for team leaders, and 12 for companies.

Table 4 HLM Results for Team Performance

Predictor	Team Performance			
	Null model	Model 1	Model 2	Model 3
Intercept	4.76**	3.16**	3.14**	3.18**
Step1 Controls				
Gender		.03	.04	.05
Age		.04	.04	.05
Job tenure		.08*	.10*	.11*
Marital status		.03	.05	.05
Education level		.07*	.09*	.11*
Leader favorability		.12*	.13*	.14*
Step 2 Main effect				
Trust in the leader			.38**	.41**
Team efficacy			.23*	.26*
Step 3 Moderating effect				
Trust in the leader *Team efficacy				.41**
R^2		.43**	.45**	.38**
Deviance	752.38	687.45	654.68	648.33

Note: * $p<.05$; ** $p<.01$; N=369 for employees, 113 for team leaders, and 12 for companies.

Hypothesis 3 predicts that trust in the leader has a positive mediating effect on the relationship between leader SD humor and team performance. It can be seen in Table 5 from the Sobel Test of leader SD humor, trust in the leader, and team performance reached a significant level ($\beta=0.36$, $p<.01$), and then the Bootstrapping method was used to simulate 2000 samplings. At a confidence level of 95%, the confidence interval of the mediating effect (including the percentage confidence interval and the deviation confidence interval) does not contain 0. Therefore, it can determine that the mediating effect is significant. Therefore, hypothesis 3 is supported.

Table 5 The detection of mediating effect

Leader SD humor	Sobel Test	Bootstrapping 95% CI			
		Percentile CI		Bias CI	
		Lower	Upper	Lower	Upper
$\rightarrow$ Trust in the leader $\rightarrow$ Team performance	$\beta=0.36$** $t=3.75$	0.03	0.12	0.04	0.13

Note: * $p<.05$; ** $p<.01$; N=369 for employees, 113 for team leaders, and 12 for companies.

Hypothesis 4 states that team harmony moderates the relationship between leader SD humor and trust in the leader, such that the relationship between leader SD humor and trust in the leader becomes weaker when team harmony is higher. Consistent with this finding, Table 6 shows that the interactive effect between leader SD humor and team harmony was significant for trust in the leader ($\gamma=-0.38$, $p<.01$). Tests of the simple slopes show that the relationship between leader SD humor and trust in the leader was positive and significant when team harmony was at low levels (simple slope=0.26, $p<.01$), but the relationship was less significant at high team harmony levels (simple slope=0.14, $p<.05$). As shown in Figure 2, leader SD humor less plays an important role for the employees who had high team harmony. However, leader SD's humor was a significant factor in trust in the leader for employees who had low team harmony. Therefore, hypothesis 4 is supported.

Table 6 HLM Results for Trust in the Leader

Predictor	Trust in the Leader			
	Null model	Model 1	Model 2	Model 3
Intercept	4.53**	3.86**	3.72**	3.66**
Step1 Controls				
Gender		.03	.04	.05
Age		.04	.04	.05
Job tenure		.06*	.08*	.09*
Marital status		.03	.05	.05
Education level		.04	.05	.05
Leader favorability		.11*	.13*	.14*
Step 2 Main effect				
Leader SD humor			.41**	.43**
Team harmony			-.23*	-.26*
Step 3 Moderating effect				
Leader SD humor *Team harmony				-.38**
R^2		.45**	.48**	.52**
Deviance	736.42	715.68	698.45	678.38

Note: * $p<.05$; ** $p<.01$; N=369 for employees, 113 for team leaders, and 12 for companies.
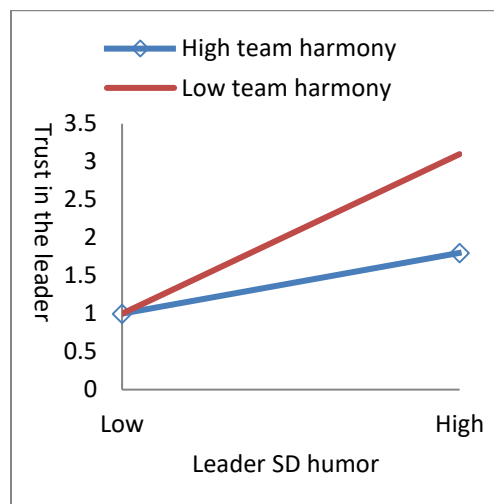

Figure 2 Interaction of team harmony

Hypothesis 5 states that team efficacy moderates the relationship between trust in the leader and team performance, such that the relationship between trust in the leader and team performance becomes stronger when team efficacy is higher. Consistent with this finding, Table 4 shows that the interactive effect between trust in the leader and team efficacy was significant for team performance ($\gamma=0.41$, $p<.01$). Tests of the simple slopes show that the relationship between trust in the leader and team performance was positive and significant when team efficacy was at high levels (simple slope=0.28, $p<.01$), but the relationship was less significant at low team efficacy levels (simple slope=0.15, $p<.05$). As shown in Figure 3, trust in the leader did less play an important role for employees who had low team efficacy. However, trust in the leader was a significant factor in team performance for employees who had high team efficacy. Therefore, hypothesis 5 is supported.
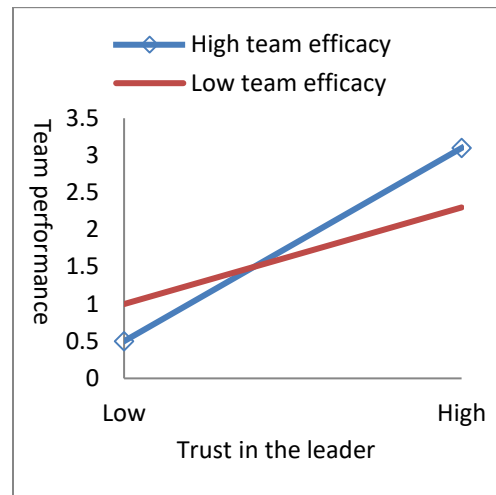
Figure 3 Interaction of team efficacy

5. Conclusion

This study supports the LMX theory and SIT regarding leader humor literature (e.g., Lyttle, 2001; Fredrickson, 2003) and the role of SD humor in effective leadership (e.g., Hoption et al., 2013; Gkorezis & Bellou, 2016; Greengross & Miller, 2008). As Romero and Cruthirds (2006) point out, "humor is a multifunctional management tool that can be used to achieve various objectives." Team leaders who use SD humor are more likely to increase employees' trust in them as well as team performance (Mesmer-Magnus et al., 2018; Fredrickson, 2013; Robinson & Smith-Lovin, 2001). The results also indicated that (1) leader SD humor positively affects trust in the leader, (2) trust in the leader positively affects team performance, (3) trust in the leader mediates the relationship between leader SD humor and team performance, (4) team harmony moderates the relationship between leader SD humor and trust in the leader, and (5) team efficacy moderates the relationship between trust in the leader and team performance. These findings have several theoretical and managerial implications.

5.1 Implication for theory and research

Although research and practical work on leader humor has recently become quite popular, most of them are discussed in Western society and culture. However, few empirical studies on SD humorous leaders and few scholars have studied the situation and influence of SD humorous leaders in Eastern countries/regions. Therefore, this study uses Taiwanese companies as the main research body to explore the multiple influence relationships between leader SD humor and team performance, which have important contributions and value and fill the literature gap on leader humor and member behavior.

In past literature on leader SD humor, few theories or perspectives have been used for discussion and analysis. This study utilizes LMX theory and SIT to emphasize that when leaders often interact and communicate with members, their words and deeds (such as a sense of SD humor) help them obtain employees' trust and identification, thereby promoting team performance. The SD humorous leader is a wise individual and beacon who is not afraid of the wind, rain, and setbacks, leading their members toward the right goal and direction. This special characteristic leads to exceptional performance and surpasses that of ordinary leaders as it naturally exerts a higher attraction and influence on members. Therefore, this study adopts the abovementioned theoretical analysis to provide a powerful explanatory power and narrative basis for the influence and effectiveness of leader SD humor.

In the past literature, no research has investigated the appropriate timing of leader humor. Different leader humor should have different effects in different situations. This study found that team harmony weakens the relationship between leader SD humor and trust in the leader, which also confirms that SD humorous leaders are not suitable for a harmonious and stable team. As mentioned earlier, SD's humorous leaders' style is more suitable for crisis, conflict, early, unstable, or disharmonious teams. In other words, in a turbulent team, leaders who adopt SD humor may be more suitable to overcome difficulties and challenges optimistically as they will joke about unsatisfactory events and are not scared of failure/frustration, which will help guide an unstable team to grow and progress. Therefore, team harmony may be a substitute for or offset SD humorous leadership, and it could reduce the importance, influence, and effectiveness of SD humorous leaders.

Finally, team efficacy is the common positive belief of team members, which can motivate teams' growth, progress, and performance. When members trust their leaders and have the confidence to jointly create team success, team performance can be further enhanced. Therefore, the results of this study also confirmed the motivational effect of team efficacy; that is, team efficacy strengthens the relationship between trust in the leader and team performance. Thus, the finding of this moderating effect makes

important research contributions and has significance in the literature on leadership effectiveness, team efficacy, and motivation effect.

5.2 Practical implications

The results of this study have several interesting management implications. First, when a leader wants to use SD humor to improve team performance, it must continue for a period of time to build employees' trust and support. This process of influence improves team performance; in other words, it is an extremely important process for team members to accept, trust, learn and imitate SD's humorous leaders. As Ken (2013) points out, successful team leaders must experience diverse challenges in interpersonal interaction and running-in to achieve leadership effectiveness. Second, leader SD humor is not suitable for all teams but only for those in crisis, early, or frequently conflicting, so SD humorous leaders can play a critical role and have a substantial impact. On the contrary, in a harmonious or stable team, SD humorous leaders are less efficient and find it difficult to produce positive influence and beneficial outcomes.

Third, although a sense of humor is a personal trait, some related traits (such as openness, optimism, liveliness, frequent laughter, honesty, an adventurous spirit, etc.) contribute to the further development of leaders' SD humor style (Spaeth, 2009; Greengross & Miller, 2008). Therefore, HR managers can take some measures to encourage or train team leaders or supervisors to learn or use SD humor. For example, in the recruitment and selection process, they can pay attention to candidates with the above SD humor trait and further test or train their SD humor style to become effective SD humorous leaders in the future. To achieve this goal, semi-structured or situational interviews are designed to allow candidates to fully demonstrate their personal characteristics and personalities.

Conversely, it is important to conduct leader training programs for existing leaders/supervisors with SD humorous traits, regardless of their level. Organizational senior managers can first encourage and support the use and benefits of SD humor and conduct SD humor leadership education and training for some specific candidates, including through video learning, group/team exercises, sensitivity training, role-play, and SD humorous teaching courses/seminars (Gkorezis & Bellou, 2016). Afterward, organizations can place these well-trained SD humorous leaders in a newly created, in crisis, unstable, or discordant team and let them use their unique charm to lead members to be optimistic, enterprising, and not afraid of difficulties in growing and progressing together. Organizations can regularly evaluate the actual performance of these SD humorous leaders in their teams (Bazerman & Gino, 2012; Gu et al., 2015). Fourth, for some stable and harmonious teams, the importance and effectiveness of SD humorous leaders are low; therefore, organizations can use self-management teams, problem-solving teams, or increased empowerment to maintain their effective operations and functions (Lisa, 1996; Ken, 2013).

Fifth, the formation of team efficacy comes mostly from members' confidence in their teams (Gully et al., 2002; Gully & Phillips, 2005). Therefore, to motivate team operation, organizations and team leaders must strengthen the connection between team goals and members' needs, implement many team activities and enhance team members' mutual communication and dependence. These efforts also promote effective team operations and improve team performance.

5.3 Limitations and future research directions

Although this research provides fruitful insights, some limitations must be considered. First, some scholars have pointed out that the sociopsychological phenomenon of humor, that is, the expression and interpretation of humor, has gender differences (Hoption et al., 2013; Gordon, 2010). For example, male leaders are more willing to show SD humor than female leaders (Vecchio et al., 2009; Smeltzer & Leap, 1988; Thomas & Esses, 2004); in many societies, men are typical humorous speakers, and women are humorous listeners (Lin et al., 2012; some negative stereotypes may not be conducive to female leaders displaying their humorous style (Hoyt & Blascovich, 2007). However, as this study does not discuss leaders' gender factors, future researchers should investigate gender differences in leaders' SD humor.

Second, this study only explores one form of leader negative humor, namely leader SD humor. However, other forms of leader humor that have received less attention and discussion in past research, such as leader-positive humor (affiliative, self-enhancing, and socially skilled humor) or leader-negative humor (aggressive, boorish, and belabored humor), may affect members' attitudes and team performance (Martin et al., 2003; Smith & Khojasteh, 2014; Huo, Lam & Chen, 2012). Therefore, future researchers may explore the influence of other types of leader humor and produce different findings and new insights. In the future, researchers can use other leadership theories, such as the superiority theory, relief theory, or others (Holmes & Marra, 2002), to understand the effectiveness of leader SD humor. Hoption et al. (2013) claim that the copy effect of humor, that is, the leader's use of humor, may cause more than one member to also use humor. In the future, researchers can explore whether SD humorous leaders produce such copying and imitating effects.

Third, this study allows team leaders to evaluate team performance and believes that some leaders may report higher scores to make them more "effective." Therefore, future research may use preventive measures or require two or more individuals to evaluate team performance (Wen et al., 2017). Further research could use an experimental design or situational simulation (Antonakis et al., 2010) to explore hypothetical relationships. Future research could also attempt to control the influence of different types of companies to obtain in-depth research outcomes. Another limitation is that different cultures may affect the use and effect of leader SD humor, as Kazarian and Martin (2006) found that ethnic and cultural differences affect leaders' humor styles. Lee (2015) argues that in Asian societies, different regions have different degrees of authority; therefore, the use and effect of humor by Chinese leaders are still uncertain. Dalton and Ong (2005) studied the authoritative orientation of four Western countries and six Eastern countries and found that the authority level of Taiwan is moderate. Therefore, although this study found that the use of SD humorous leaders in Taiwan is effective, further research is needed to verify this. The detection of mediating and moderating factors in this study is restricted as it only examined the mediating role of trust in the leader and the moderating roles of team harmony and team efficacy. Future research should use other background factors to examine the relationship between leader SD humor and team performance, such as leader favorability, LMX, team potency, team cohesiveness, task interdependence, team climate/atmosphere, and team conflict (Wen et al., 2017; Tse, 2014).

Finally, this study showed that team efficacy is a positive, motivating factor for team operations (Gouthier & Rhein, 2011). Future research can also explore some negative factors of team operations, such as organizational cynicism and dissatisfaction (Lewis, 2007), and investigate how they weaken the relationship between trust in the leader and team performance, which should yield different and interesting findings. In this study, the sample was not drawn at random; that is, no subjects were randomized. To minimize missing bias in the analysis, this study controlled for employee demographic variables and leader favorability. However, it is recommended that future studies use random sampling to verify these findings.

Note:
1. The author has no conflict of interest and declares: (1) no funding or other support is provided by any organizations or individuals in this research, and (2) no additional relationships or activities may affect this study.
2. The research process and outcomes comply with the ethical standards of the National Research Council, the 1964 Helsinki declaration, and its subsequent amendments or similar ethical standards, ensuring that all participants have no mental or physical harm, nor harm their safety and rights from the study.
3. This study obtains all participants' informed consent. First, this study describes the research purpose, importance, and process to all participants informs them of the cooperative matters and emphasizes that their names and opinions are entirely confidential. Finally, if necessary, the summary of the research will provide for free for any participants as references.

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Appendix: Research questionnaires

1.   Leader SD humor

1.1 My leader likes to make fun of his/her shortcomings.

1.2 My leader demeans him/her to make others laugh.

1.3 My leader often says funny and embarrassing things about him/her.

1.4 When my leader confronts an unpleasant problem or event, he/her hides it in a joking way.

2. Trust in the leader

1.1 I have confidence in my leader's ability.

1.2 When an important event occurs, I will rely on my leader's decision.

1.3 My leader's behavior is consistent.

1.4 My leader often keeps his/her word.

1.5 My leader treats members fairly.

3. Team performance

1.1 The team has achieved its goals.

1.2 The team has achieved high performance.

1.3 The team has made a great contribution to the company.

1.4 The team is very successful in achieving multiple goals.

1.5 The team has much successful experience.

4. Team harmony

1.1. I think team members need to help each other.

1.2 I attach great importance to the spirit of unity and cooperation.

1.3 For the team goal, I am willing to cooperate with others.

1.4 I believe in empathy when interacting with team members.

1.5 I think mutual respect is the basic norm of the team.

1.6 I had a lot of good cooperation experience with the team.

1.7 I interact well with team members.

1.8 When members are in difficulty, I will assist in time.

1.9 I value positive reciprocity and better communication in the team.

1.10 I accept and tolerate team members.

5. Team efficacy

1.1 My input is valuable to the team.

1.2 The team can effectively use members' professional abilities.

1.3 Overall, the team can achieve the expected results.

1.4 Participating in the team allows me to grow and develop.

1.5 The work of the team can be completed within time.

6. Leader favorability

1.1 I like my leader.

1.2 I admire the way my leader does things.

1.3 I feel my leader is attractive.

1.4 I feel my leader is charismatic.