

ISSN 2090-3359 (Print)  
ISSN 2090-3367 (Online)



# Advances in Decision Sciences

*Volume 26*  
*Issue 1*  
*March 2022*

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Published by Asia University, Taiwan

**The Relationships among Authentic Leadership, Social Exchange  
Relationships, and Trust in Organizations during COVID-19  
Pandemic**

**James K.C. Chen**

Department of Business Administration, Asia University, Taichung, in Taiwan;  
[kcchen@asia.edu.tw](mailto:kcchen@asia.edu.tw)

**Thitima Sriphon (corresponding author)**

Department of Business Administration, Asia University, Taichung, in Taiwan;  
[sriphon@yahoo.com](mailto:sriphon@yahoo.com)

Received: September 30, 2021; First Revision: January 14, 2022;

Last Revision: January 24, 2022; Accepted: February 02, 2022;

**Published: February 03, 2022**

## Abstract

**Purpose:** Trust is essential for organizations' cooperative relationships during COVID-19. Authentic leadership and social exchange relationships are required to increase trust during a crisis. However, leader behaviors during COVID-19 have effects on the relationships among authentic leadership, social exchange relationships, and trust in organizations to understand their effects. The moderating effects of leader behaviors during COVID-19 on the relationships among authentic leadership, social exchange relationships, and trust in organizations are investigated.

**Design/ Methodology/Approach:** Hierarchical multiple regression with interaction terms is used to examine interactions of leader behaviors during COVID-19 on the relationships between variables. Moreover, bootstrapping is performed to explore the mediating role of social exchange relationships between authentic leadership and trust in organizations.

**Findings:** The findings indicate that authentic leadership positively affects social exchange relationships and trust, whereas social exchange relationships positively affect trust. Moreover, a social exchange relationship has a mediating effect between authentic leadership and trust. Both leader behaviors are regrading (a) managerial ability with ethics and (b) a positive working relationship based on work from home as moderators, positively influencing authentic leadership, social exchange relationships, and trust.

**Practical implications:** This paper suggests that authentic leadership increases the quality of social exchange relationships and trust. Leader behavior qualities and leader-follower relationships based on social exchange theory are essential for improving trust even after post-COVID-19. Finally, based on the social exchange theory, leader behavior qualities and leader-follower relationships can motivate positive relationships in organizations. The chief executive officers (CEOs) and the organizational management teams benefit from the outcomes of this paper to comprehend which factors affect relationships and trust changes in organizations.

**Keywords:** authentic leadership (AL); trust; social exchange relationships (SERs); Leader behaviors during COVID-19

**JEL:** D23, D91, M14

## 1. Introduction

As countries worldwide have encountered the spread of the pandemic, Thailand is not an exception. The pandemic causes a health crisis, leading to economic problems (Chang et al., 2020). While small and medium-sized enterprises are the principles of Thailand, the difficulties by interruption of the supply chain are spotlighted, leading to a decrease in the country's revenue (UNIDO, 2020). Business owners must manage an organization with an unforeseeable condition and take drastic actions concerning their staff, for instance, social and physical distancing. Not only business owners but also their staff is negatively affected by the pandemic. Staff feels anxious about job security in terms of reduced income and other organizational changes. Thereby, this situation leads to the decreased trust of staff toward their organizations (Supasitthumrong, 2020; Global Data, 2021). The most organizational valuable asset is the staff (Staniškienė and Stankevičiūtė, 2018; Pfeffer, 2010). It is the responsibility of supervisors to maintain this valuable asset to promote the sustainability of their organizations (Pfeffer, 2010; Guest, 2011). Lee et al. (2020) indicate that trust is an essential factor for binding relationships of people, their expectation, and their action to deliver the best performance of organizational people during uncertain situations. Thereby, a strong sense of trust can bring a positive outcome to the crisis. However, obtaining trust in this period is very difficult. Nevertheless, good leaders require to nourish trust among people in their organizations.

An influential role of teleworking has been started in organizations to alleviate economic distress and deal with the pandemic. However, while some businesses can offer work from home, others demand physical presence making it difficult to make substantial changes to their operations (Supasitthumrong, 2020). Based on a Gensler survey on working from home in the Asia Pacific region, 68% of employees report high satisfaction, but 22% are dissatisfied. The survey indicates that there are three reasons why employees are satisfied with working from home: (a) time saved on travel, (b) flexibility, and (c) the ability to be with their family. On the other hand, there are also three reasons why employees are unsatisfied with teleworking: (a) the problem of less social interaction with colleagues, (b) the problem of work-life balance, and (c) inappropriate work environments. Thus, teleworking affects culture in an organization, e.g., trust and social exchange relationships in the workplace (Gensler, 2020).

The trust deficiency between bosses and subordinates due to teleworking is an example of unsatisfied teleworking since supervisors have negative feelings about teleworking, causing them to control and monitor the employees more closely, leading to employees' uncomfortable and negative feelings about their supervisors (KNOWLEDGE@WHARTON, 2020). Moreover, commanding and controlling leadership lead to a negative outcome for relationships and work performance of people in an organization (Gensler, 2020); hence, actions and behaviors of leaders during the pandemic affect a working relationship and trust among people in their organizations where need to have the organizational cooperation effectively such as employees' engagement.

Leadership qualities become a crucial driving success or failure of an organization (Awan et al., 2015). Savolainen and Häkkinen (2011) indicate that the trustworthiness of leaders is

essential to convince their subordinates to be willing to follow them. A trustworthy leader consists of four elements: leader ability or competency, integrity, benevolence, and credibility. Thus, leader behaviors toward employees can evaluate the leadership level in that leader. Authentic leadership focuses on employee engagement in organizational activities to encourage trust in an organization because when people realize that supervisors trust them, they will use every endeavor to achieve their task (Hsieh & Wang, 2015).

Furthermore, a positive organizational relationship is conducive to achieving organizational objectives and improving employees' performance leading to a trusting relationship (Iqbal et al., 2018). Therefore, positive social relationships are sought in the workplace (Houston, 2020). Social exchange relationships are among the meaningful social relationships in organizations (Hon & Grunig, 1999). Social exchange relationships motivate behavior that promotes organizational purposes since they positively influence job performance and organizational citizenship behavior (Shore et al., 2006). In social exchange relationships, friendships between supervisors and followers are positively associated with the exchange relationships among members of teams in the organization (Tse et al., 2008). Therefore, workplace friendships can reinforce the social exchange relationships among staff and between supervisors and staff, encouraging a culture of trust in their organization. According to the combination of extrinsic and intrinsic motives, social exchange relationships promote people to support one another due to the increased trust in the organization (Johnson and Grimm, 2010). In times of crisis, authentic leaders need to use their abilities and ethics to build trust and increase a working relationship based on a social exchange theory (Krishnamara & Bunsupaporn, 2020).

This study aims to discover the effects of leader behaviors during COVID-19 on the relationships among continuous variables such as authentic leadership, social exchange relationships, and trust in an organization to find the approach to improve trust in the organizations. The moderator variables will be separated into two factors which are (a) leader behaviors regarding managerial ability and ethics during the crisis, and (b) leader behaviors regarding a positive working relationship of employees based on work from home activity according to elements of trustworthy leaders (Savolainen & Häkkinen, 2011). The findings can benefit CEOs in developing suitable methods to encourage trust and high-quality social exchange relationships in organizations even after post-COVID-19.

## **2. Theoretical background**

### *2.1 Authentic leadership (AL)*

Leadership theory which combines servant, transformational, charismatic, and spiritual leadership, are AL (Avolio & Gardner, 2005). This kind of leadership focuses on leader behavior development through an honest relationship that values their employees and creates ethical principles (Gardner et al., 2005). AL also spotlights on developing great leaders who can understand their true self and strengths and weaknesses, as the reason, they will know how to inspire other members to engage in organizational activities (Walumbwa et al., 2008). Further, an ethical environment and a positive mental capacity can be encouraged by AL behavior (Walumbwa et al., 2008). AL can motivate subordinates to express their feelings and concerns about their responsibility to complete their tasks (Hsieh & Wang, 2015).

Ilies et al. (2005) indicate that AL includes self-stream, self-awareness, self-expression, and flow experience that can influence the well-being of supervisors and followers, social exchange relationships, and positive emotions. Avolio & Gardner (2005) state that AL behavior leads to self-improvement because the critical components of AL are concentrated in self-awareness and self-regulation. Thus, AL encourages self-development in emotions, identity, motivations, and values. Regrading understanding their true self and expressing true self and feelings toward others, employees can increase mutual trust in an organization and the positive relationships between supervisors and subordinates or among organizational members (Wei et al., 2016). It concludes that the four crucial components of AL are relational transparency, balanced processing of information, self-awareness, and internalized moral perspective (Avolio & Gardner, 2005; Gardner et al., 2005; Walumbwa et al., 2008). Self-awareness or self-realization development requires feedback from others (Ilies et al., 2005). Rego et al. (2013) indicate that in an organization's environment, the virtuousness of the team and effectiveness of the team can be influenced by AL behavior which contributes to promoting ethics and good performance. Having virtuous teams leads to an affective commitment by organizational members.

## *2.2 Social exchange relationship (SER)*

Shore et al. (2006) indicate that social exchange relationships (SERs) are working relationships among employees in their workplace seeking equal benefits in return. A basic of SERs evolves into loyalty, mutual commitment, and trust (Zhu, 2012). A mutual trust mechanism is required to improve SERs since it does not have any approach capable of measuring the values of social benefit return. Regarding social exchange theory, Tnay et al. (2013) note that the salary expectation affects the turnover rate because unsatisfactory payment leads to employees' increasing their intention to leave organizations such that SERs can predict employee behaviors (Johnson & Grayson, 2005). Likewise, SERs are associated with social motivation and trust (Shore et al., 2006; Massey et al., 2019). Cognitive-based trust in exchange partners requires competency and dependability (Johnson & Grayson, 2005). Affective-based trust is the emotional engagement in high qualities of SERs, where trust is built from receiving care and concern from another party (Massey et al., 2019). Further, high-quality SERs can expand to communal relationships (Johnson & Grimm, 2010; Dunaetz, 2017). Blau (1964) develops five stages that induce the process of social exchange which is (a) the exchange relationship development stage, (b) the character of the exchange relationship stage, (c) the nature of the transaction stage, (d) the cost transaction stage, and (e) the social background of SERs stage. However, the high quality of SERs encourages staff's loyalty and commitment to the organization, improved employee organizational citizenship behavior, low turnover rate, and employees' better performance (Shore et al., 2006). Additionally, staff satisfaction positively affects staff's loyalty and commitment, elevating work efficiency (Goujani et al., 2019; Schwepker, 2017).

## *2.3 Leader behaviors during COVID-19*

COVID-19 has posed a serious challenge to AL. A leader is in charge of responding for organizational survival. Fernandez & Shaw (2020) indicate that leadership needs rapid and effective responses with clear communication during the pandemic. Emmett et al. (2020) indicate

that leaders with excellent leadership behavior spotlight flexibility, compassion, empathy, and ethics effectively deal with their followers. During COVID-19, emotional stability and emotional intelligence are vital for AL due to the difficulty of organizational members.

Further, emotional intelligence is essential to develop emotional competence, which consists of identifying, understanding, regulating, utilizing emotions about self and others, leading to individuals' performance (Fiorilli et al., 2017; Sung et al., 2020). Therefore, leaders with high emotional competence tend to have a good relationship with people around them (Fiorilli et al., 2017; Sung et al., 2020). Concerning the workplace challenges, empathy and transparency have an essential role for AL to increase high-quality SERs and trust in an organization to maintain employees' social well-being, psychological health, and physical conditions (Emmett et al., 2020). Based on social skills in emotional intelligence, AL behavior needs to promote good working relationships, listen to others, build ethical culture, provide psychological and physical safety in the organizational environments (Edmondson, 1999). Fernandez & Shaw (2020) indicate that relationships in organizations are very significant during a crisis. Therefore, AL should focus on increasing the relationships in the organization. Authentic leaders need to be good listeners, accept advice from others without criticism, build mutual trust with others with clear and effective communication, take care of employees and meet their expectations to encourage healthy relationships in the organization (Argyle Public Relationships, 2020).

Dolan et al. (2020) demonstrate that COVID-19 negatively impacts emotional, ethical, and economic perspectives. Nevertheless, this crisis can generate new leaders whom organizational members can trust in their leadership (Fernandez & Shaw, 2020). Trust becomes a vital factor for working processes and working relationships (Dolan et al., 2020). Carrington et al. (2019) note that consensus, which originates from both supervisors and followers, can succeed in the organization. American Psychological Association (2020) indicates that stress from supervisors can cause more anxiety in followers during a crisis. However, effective communication is essential to maximize trust and reduce stress from team members. Likewise, the well-being of organizational people and the supervisor and follower relationships reflect in the sustainable workplace (Staniškienė & Stankevičiūtė, 2018). Wisittigars & Siengthai (2019) demonstrate that leadership in times of crisis needs competency, such as people management, self-management, and business management, to adapt to rapid changes in the uncertainty of environments. Leadership qualities should include the following skills: decision-making skills based on analytical and problem-solving skills, ability to simplify problems, high emotional intelligence, communication skills, the ability to manage and organize people, and negotiation skills (Wisittigars & Siengthai, 2019).

#### *2.4 Trust*

Trust has strong relationships with leadership in the organization (Ballinger et al., 2009). Mayer et al. (1995) note that trust is the willingness to believe in another's words, actions, or decisions. Wong et al. (2000) note that trust empowers the working relationships in an organization. Successful collaboration among people in their organization is driven by trust (Meng, 2015). Mishra & Mishra (2013) argue that trustworthy leaders can develop high leadership qualities: openness, reliability, benevolence, and ability.

Conversely, the high quality of leadership builds an environment of trust in their organization and trusting behavior among employees (Mishra & Mishra, 2013). Therefore, leadership influences trust in leaders (Islam et al., 2020). McCallister (1995) notes that trust is an essential factor for driving working relationships because the relationships among people in an organization require the ability to accomplish tasks. Lis et al. (2015) argue that employees can trust colleagues when supervisors inspire and build a culture of trust and suitable working environments. Creating a culture of trust and appropriate work environments, supervisors need empathy and treat coworkers and subordinates with respect and courtesy. Ballinger et al. (2009) argue that high-quality leadership influences and shapes the positive working relationships in the organization. The success at previous jobs of new leaders can influence affective reactions and realization of new leader abilities by subordinates and peers.

This paper aims to gain insight into the effects of leader behaviors during COVID-19 on AL, SERs, and trust relationships. Moderator variables refer to leader behaviors during COVID-19 (See Appendix A), influencing the relationships among the three mentioned variables. Trust is a significant factor driving the processes of team performance (Jong & Elfring, 2010; Jong et al., 2016). Teamwork performance requires trust in leadership (Dirks, 2000; Lau & Rowlinson, 2009). Trustworthy leadership such as AL can increase SERs and trust in the organization (Lis et al., 2015; Burke et al., 2007).

### **3. Methodology**

#### *3.1 Data*

This study used a cross-sectional design to collect data from 318 managers who work different types of business in Thailand. By using a convenience sampling approach, 380 questionnaires were distributed to managers from 30 June to 1 October 2020 through online channels, i.e., Facebook, e-mail, and line groups, and 360 questionnaires (94.70%) were returned. Concerning the incomplete questionnaire, we used 318 questionnaires (88.33%). The respondent's information showed 170 male managers (53.5%) and 148 female managers (46.5%). Most of them were 36–40 years old (74, 23.3%), followed by 51–55 years old (36, 11.3%), 30–35 years old (32, 10.1%), over 60 years old (28, 8.8%), 50–60 years old (26, 8.2%), and under 30 (14, 4.4%). 42.8% of respondents were first-line managers, 24.8% of respondents were middle managers, or 32.4% of respondents were top managers. According to the duration of work in their current firm, 28% of respondents spent 11–15 years, 24.8% of respondents spent 6–10 years, 18.2% of respondents spent five years, 16.4% of respondents spent over 20 years, or 12.6% of respondents spent 16–20 years. Regarding managerial experiences, 33% of respondents had 5–10 years of experience, or 28.3% had less than five years of experience. 46.2% of the managers worked in a service industry, 19.8% worked in a factory, 17.6% worked in a wholesale business, or 16.4% worked in a retail business. The number of employees at respondents' firms, 43.4% was fewer than ten people, 41.5% was 10–49 people, 7.9% was 50–249 people, or 7.2% was over 250 people.



### *3.2 Measuring variables (Cronbach's alpha)*

The variables were measured using a 5-point Likert scale, ranging from strongly disagree to strongly agree. The Cronbach alpha was 0.910 for twenty-two questions. They included the five questions of trust with 0.761 reliability, the three questions of social exchange relationships with 0.721 reliability, the four questions of authentic leadership with 0.898, and the ten questions of leader behaviors during COVID-19 with 0.873 reliability. The details of a questionnaire were provided as follows:

First, the trust questions were developed from McCallister (1995); an example of a questionnaire, employees are confident to offer their new ideas to others. Second, the social exchange relationships questions were developed from Shore et al. (2006); an example is that their supervisors always rewarded hardworking employees. Third, the authentic leadership questions were developed from Walumbwa et al. (2008); an example of questions, supervisors understand their best capacity and know-how to support followers. Finally, leader behaviors during COVID-19 questions were developed from Fernandez & Shaw (2020), DoLan et al. (2020), Argyle Public Relationships Index (2020), and Kaul et al. (2020) (see the details in Appendix A).

### *3.3 Factor analysis (EFA)*

Exploratory factor analysis (EFA) was used to identify the moderating variables (Fabrigar et al., 1999; Norris & Lecavalier, 2009). Ten statements of leader behaviors during the COVID-19 pandemic were required to perform the EFA to group the related statements for clearly describing the related factors and reducing multicollinearity between factors during the process of regression analysis. The result of the KMO measure of sampling adequacy showed the appropriateness of applying factor analysis to ten statements of leader behavior during COVID-19 (KMO = 0.752 and Bartlett's Test of Sphericity = 400.059,  $df = 45$ ,  $p\text{-value} < 0.05$ ). Moreover, communities of ten statements of leader behaviors during COVID-19 would be observed to test common variance. The retained factors could explain the proportion of each variables' variance, the highest value was represented 0.606, and the lowest value was represented 0.30; therefore, it was acceptable to obtain ten statements of leader behaviors to group into new factors (Child, 2006). Based on the extraction sum of squared loadings and Eigenvalue setting at 1, two factors were retained regarding the common variance; the first two factors together accounted for 41% of the total variance explained. The rotated factor matrix is shown below.

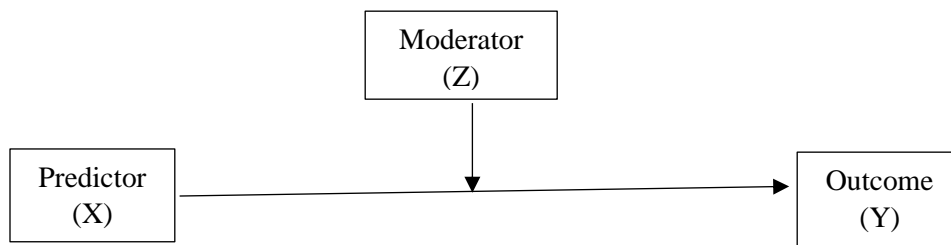
**Table 1** Factor analysis

	Leader behaviors Component1	Leader behaviors Component2
Variable 1	.461	
Variable 2		.552
Variable 3	.538	
Variable 4	.539	
Variable 5		.778
Variable 6	.649	
Variable 7		.729
Variable 8	.597	
Variable 9	.505	
Variable 10	.636	

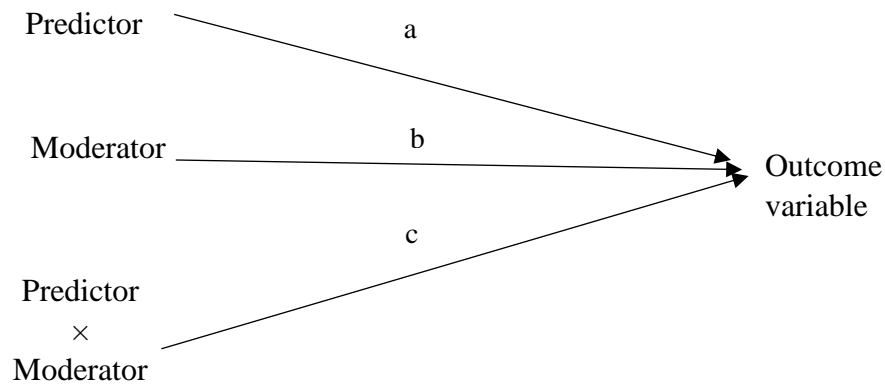
As shown in Table 1, leader behaviors during COVID-19 component1 comprised seven variables (1,3,4,6,8,9,10) called managerial ability with ethics. Leader behaviors during COVID-19 component2 comprised three variables (2,5,7) called a positive working relationship (based on working from home). These two sub-factors acted as moderating variables. Factor scores were used for calculating in regression analysis.

### 3.4 Hierarchical Regression analysis

Interaction terms were conducted to test the interaction of leader behaviors during COVID-19 both (a) managerial ability with ethics and (b) a positive working relationship on the relationships between (1) AL and SERs, (2) between AL and trust, and (3) between SERs and trust. Hierarchical multiple regression analysis was applied to explore interactions of independent variables, which included the main predictor and a moderator that impacted a dependent variable. The concept diagram of the simple moderation model was as follows (Bachl,2017):



Based on Baron & Kenny (1986), an analytic framework for testing the moderating effect was shown below:



According to moderator models, multiple linear regression equation was expressed as follows:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 (X_{1i} X_{2i}) + E_i \text{ (Cohen, 1978).}$$

Regarding the research model, this research aimed to test the moderating role of managerial ability with ethics and a working relationship on the relationships among AL, SERs, and trust. Cohen (1978) stated that multiple regression models with a linear  $\times$  linear interaction could be used for testing interactions among variables by the following equation:  $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 (X_{1i} X_{2i}) + E_i$ .

Mean centering was used to reduce the problem of multicollinearity between independent variables (predictor variables) in moderated multiple regression models (Hofer, 2016). Mean centering was performed by subtracting its mean value from every predictor and moderator variable (Hofer, 2016).

Interaction terms in multiple regression models were run based on Aiken & West (1991) to test the interaction effects of managerial ability with ethics and a working relationship (moderators) on the relationships between AL and SERs, the relationships between AL and trust, and the relationships between SERs and trust. In addition, hierarchical multiple regression was adopted to investigate whether interaction terms can increase predictive power to their models.

Firstly, we centered (mean centering) the independent variables: AL, SERs, and moderating variables. After that, we entered (1) the main predictor (AL or SERs), (2) a moderator (managerial ability with ethics or a positive working relationship), and (3) the interaction terms of a predictor and a moderator (e.g., AL  $\times$  managerial ability with ethics or AL  $\times$  a positive working relationship, and SERs  $\times$  managerial ability with ethics or SERs  $\times$  a positive working relationship) through SPSS program. Suppose the main predictor and the interaction terms of the predictor  $\times$  moderator were significant. In that case, it could interpret that a moderator had an interaction effect on the relationships between the predictor and the dependent variable.

### 3.5 Bootstrapping for mediation analysis

Testing of mediating effect of social exchange relationship (SER) between authentic leadership (AL) and trust, process macro for SPSS written by Hayes (2012) was used to perform bootstrapping in order to find the total effect, the direct effect, and the indirect effect of X on Y. However, the indirect effect could be estimated based on linear regression as follows:

$$Y = i_1 + cX + e_1 \quad (1),$$

$$Y = i_2 + c'X + bM + e_2 \quad (2),$$

$$M = i_3 + aX + e_3 \quad (3) \text{ (MacKinnon, 2008).}$$

### 3.6 Hypothesis

A research model of this paper was built from the theoretical background, as presented in Figure 1. It comprised authentic leadership (AL), social exchange relationships (SERs), trust, and moderator variables which were leader behaviors during COVID-19 regarding (a) managerial ability with ethics and (b) a positive working relationship. Authentic leadership (AL) and social exchange relationships (SERs) were the main predictor variables (independent variables). Further, social exchange relationships were a mediator between authentic leadership and trust. The associations among the variables are discussed below.

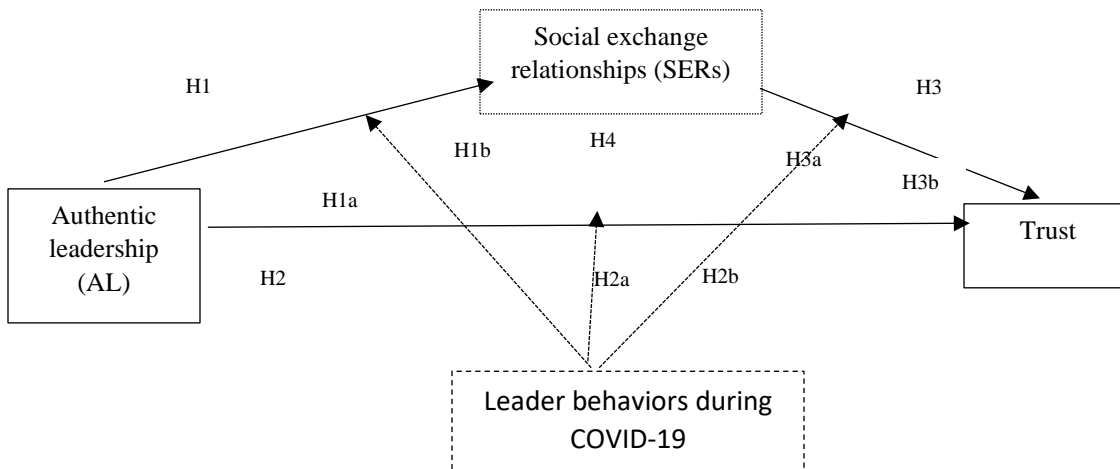


Figure 1. research model

----- Moderator variables Leader behaviors during COVID-19

(a) managerial ability with ethics (b) a positive working relationship

----- Mediator variable SERs

#### 3.6.1 Authentic leadership (AL) and social exchange relationships (SERs)

Avolio & Gardner (2005) argued that AL built positive SERs with subordinates. Leader and follower relationships were influenced by positive affect, trust, and a high level of respect. A high level of respect for leaders had a significant impact on a level of organizational performance and success; without respect for employees, leadership would not be effective (Avolio & Gardner, 2005). A high level of positive affect promoted a better social relationship; with a better relationship, those who were experienced could increase more pleasant and less hostility which

led to the increase of many more supportive partners in the long term (Moore et al., 2018). Thus, an employee who perceived leader support tends to develop better SERs with other organizational members (Chou, 2016). The positive relationship between AL and employees' job satisfaction and between AL and employees' work engagement were mediated by perceived leader support. It meant that if employees received high perceived leader support, AL tended to increase their job satisfaction and work engagement. Under this circumstance, perceived leader support was significant for authentic leaders to expand a positive working relationship with their subordinates based on social exchange theory (Penger & Černe, 2014). Employees would recognize new leaders when they showed excellent leadership skills to promote high-quality SERs (Ballinger et al., 2009). Nonetheless, mistreated employees could not generate positive SERs (Cropanzano et al., 2017). AL had to be concerned about social responsibility to promote organizational citizenship behavior toward a positive working relationship in their organization (Iqbal et al., 2018). A good relationship between supervisors and subordinates added more values to productive work environments, career satisfaction, and loyalty of employees in their organization (Benge, 2019). A high-quality SER was required in the organization because it encouraged employees' good performance and willingness to work (Clark & Mills, 1993; Bernerth & Walker, 2009). Thus, AL directly affected positive SERs (Cropanzano et al., 2017) since authentic leaders created a transparent and ethical environment in their organization regarding accepting subordinates' inputs that brought about sharing information and ideas to make a better decision for their organization (Walumbwa et al., 2008). Based on the theory, Hypothesis H1 was as follows:

Hypothesis H1: Authentic leadership has a positive effect on social exchange relationships.

Significantly, leader behaviors during COVID-19 regarding (a) managerial ability with ethics and (b) a positive working relationship concerning work from home activity could increase authentic leadership quality to promote a social exchange relationship (Fernandez & Shaw, 2020; DoLan et al., 2020; Argyle Public Relationships Index, 2020; Kaul et al., 2020). Based on the theory, Hypotheses H1a and H1b were formed as follows

Hypothesis H1a: Managerial ability with ethics positively affects the relationship between authentic leadership and social exchange relationships.

Hypothesis H1b: A positive working relationship positively affects the relationship between authentic leadership and social exchange relationships.

### 3.6.2 Authentic leadership (AL) and trust

Coxen et al. (2016) indicated that AL influenced trust in the organization and trust in leaders and team members. Leadership characters and actions are essential for employees' willingness to trust their supervisors (Walumbwa et al., 2011; Heyns & Rothmann, 2015). Trust in the organization and colleagues positively influenced organizational citizenship behavior. Carucci (2021) indicated that leaders' trustworthiness depended on their competency and ethics, as authentic leaders meant being true to their values and behavior in a consistent manner that could cause people around them to understand and trust them. In addition to authentic leaders, they had to determine what values could deliver their high performance in a field of leaders and increase

their competent areas to support their organization and people. Therefore, AL directly affected the trusting relationship among organizational citizenship. Trust in leadership positively empowered team performance (Dirks, 2000). In addition, procedural justice strengthened trust between leaders and followers, leading to positive organizational citizenship behavior (Konovsky & Pugh, 1994). Gardner et al. (2005) argued that transparency, openness, and integrity were essential for AL to promote authentic relationships and trust with organizational members. Affective-based trust and cognitive-based trust in organizational members are motivated by AL (Iqbal et al., 2020). A level of trust in leadership influenced high-performing teams; for example, trust in a coach increased the winning percentage of a basketball team; thereby, trust in leadership led a team toward a stronger position in the organization (Dirks, 2000; Lau & Rowlinson, 2009). However, competency and reliability were essential for supervisors and subordinates (Druskat & Wheeler, 2003). AL behavior motivated employees' trust in leaders due to improved organizational citizenship behavior that brought about better service quality in the Chinese hospitality industry (Qiu et al., 2019). Stander et al. (2015) also stated that AL increased a level of trust among staff; therefore, it was impossible to encourage a positive working relationship without trust from staff.

In the current COVID-19 pandemic situation, it was essential to investigate the association between AL and trust. Hypothesis H2 was formed as follows:

Hypothesis H2: Authentic leadership has a positive effect on trust.

Significantly, leader behaviors during COVID-19 regarding (a) managerial ability with ethics and (b) a positive working relationship concerning work from home activity could increase authentic leadership quality to promote trust (Fernandez & Shaw, 2020; DoLan et al., 2020; Argyle Public Relationships Index, 2020; Kaul et al., 2020). Based on the theory, hypotheses H2a and H2b were formed as follows:

Hypothesis H2a: Managerial ability with ethics positively affects the relationships between authentic leadership and trust.

Hypothesis H2b: A positive working relationship positively affects the relationships between authentic leadership and trust.

### 3.6.3 Social exchange relationships (SERs) and trust

Bajaj et al. (2013) argued that a positive working relationship between supervisors or representative managers and staff enhanced trust in their organization and minimized workplace conflict. The relationships between supervisors and employees were aimed to maintain morale, commitment, and trust to construct a productive work environment (Bajaj et al., 2013). Regarding SERs, communication quality, social dependency, financial dependency, and less opportunistic behavior positively affected the increased trust and the relationship satisfaction (Jeong & Oh, 2017). In addition, a high SER could increase trust between leaders and followers (Blau, 1964). Bernerth & Walker (2009) also indicated that high-quality SERs were related to employees' propensity to trust. On the other hand, the interaction between managers' propensity to trust and employees' propensity to trust could also create positive SERs. High-quality SERs were the process involved in initiating trust; for instance, supervisors who created strong social

bonds with their subordinates could receive more trust from subordinates when they reduced control and promoted trust (Whitener et al., 1998).

Based on the social exchange theory, the social intelligence of supervisors could raise trust in the organization by being able to cooperate with staff from different backgrounds (Massey et al., 2019). Hypothesis H3 is formed as follows:

Hypothesis H3: Social exchange relationships have a positive effect on trust.

Significantly, leader behaviors during COVID-19 regarding (a) managerial ability with ethics and (b) a positive working relationship concerning work from home activity could increase social exchange relationships to promote trust (Fernandez & Shaw, 2020; DoLan et al., 2020; Argyle Public Relationships Index, 2020; Kaul et al., 2020). Based on the theory, Hypotheses H3a and H3b were formed as follows:

Hypothesis H3a: Managerial ability with ethics positively affects the relationships between social exchange relationships and trust.

Hypothesis H3b: A positive working relationship positively affects the relationships between social exchange relationships and trust.

In addition, SERs could be a powerful mechanism through which AL could improve trust in the organization (Whitener et al., 1998; Jeong & Oh, 2017). The literature on a social exchange relationship showed a robust emotional consequence of improving trust (Massey et al., 2019). SERs had been an effect on a positive affective state that encouraged trust in leaders and the organization; when employees were perceived high social exchange relationships with leaders, they tended to develop higher trust in leaders (Bernerth & Walker, 2009). AL could promote a higher SER regarding the fairness of a relationship between leaders and followers (Tse et al., 2011). Similarly, a high SER also positively influenced trust between leaders and followers in the workplace (Cole et al., 2002). According to Blau (1964), SERs generated feelings of an individual's obligation, appreciation, and trust. With this, the Hypothesis was formed as follow:  
Hypothesis H4: Social exchange relationships mediate the relationships between authentic leadership and trust.

#### **4. Data analysis and results**

The relationships among AL, SERs, and trust during the pandemic were measured by adopting hierarchical multiple regression analysis with interaction terms to investigate the direct effects of variables and the interactional effects of leader behaviors during COVID-19 on the relationships between each predictor and each outcome variable. In addition, managerial ability with ethics and a positive working relationship were moderators, affecting the relationships between AL and SERs, AL and trust, and SERs and trust.

**Table 2 Correlation of the variables**

variable	Mean	S.D.	1	2	3	4	5
Trust	3.7730	.48539	1				
SERs	3.8092	.56036	.337***	1			
AL	3.7728	.57112	.519***	.442***	1		
Managerial ability with ethics	3.7965	.53739	.382***	.392***	.506***	1	
A positive working relationship	3.5891	.72286	.323***	.263***	.321***	.337***	1

Notes: N =318; \*\*\*p< .001; \*\*p< .01; \*p< .05

**Table 2** presented mean, standard deviation, and correlation for all variables. It showed that all variables had correlated with one another. This finding indicated that a hierarchical multiple regression approach could be applied to this study.

**Table3** Results of hierarchical multiple regression analysis for moderation analysis

variable	Trust $\beta$	Standar dized $\beta$	SERs $\beta$	Standar dized $\beta$	R	R <sup>2</sup>	Adjuste d R <sup>2</sup> )	$\Delta R^2$
<b>Model 1</b>								
<b>Step1: Main effect</b>								
AL (predictor)			.320***	.326***				<b><math>\Delta R^2</math> after step 1</b>
Managerial ability with ethics (moderator)			.262***	.251***	.514	.264***	.257***	.233***
<b>Step2: Interactions</b>								
AL $\times$ managerial ability with ethics			.252***	.178***				.031***
<b>Model 2</b>								
<b>Step1: Main effect</b>								
AL (predictor)			.396***	.403***				<b><math>\Delta R^2</math> after step 1</b>
A positive working relationship (moderator)			.098*	.127*	.476	.227***	.219***	.211***
<b>Step2: Interactions</b>								
AL $\times$ a positive working relationship			.162*	.125*				.016*



<b>Model 3</b>						
<b>Step1: Main effect</b>						
AL (predictor)	.372***	.437***				$\Delta R^2$ after step 1
			.582	.339***	.332***	
Managerial ability with ethics (moderator)	.173***	.191***				.288***
<b>Step2: Interactions</b>						
AL × managerial ability with ethics	.278***	.227***				.050***
<b>Model 4</b>						
<b>Step1: Main effect</b>						
AL (predictor)	.401***	.472***				$\Delta R^2$ after step 1
			.586	.344***	.338***	.296***
A positive working relationship (moderator)	.107**	.160**				$\Delta R^2$ after step 2
<b>Step2: Interaction</b>						
AL × a positive working relationship	.245***	.218***				.047***
<b>Model 5</b>						
<b>Step1: Main effect</b>						
SERs (predictor)	.189***	.218***				$\Delta R^2$ after step 1
			.448	.201***	.193***	.188***
Managerial ability with ethics (moderator)	.268***	.296***				$\Delta R^2$ after step 2
<b>Step2: Interaction</b>						
SERs × managerial ability with ethics	.179*	.116*				.013*
<b>Model 6</b>						
<b>Step1: Main effect</b>						
SERs (predictor)	.233***	.269***				$\Delta R^2$ after step 1
			.444	.197***	.190***	.173***
A positive working relationship (moderator)	.156***	.233***				$\Delta R^2$ after step 2
<b>Step2: Interaction</b>						
SERs × a positive working relationship	.181**	.157**				.024**

Total N=318; All  $\beta$ s has shown in the table are from the final models.

\*\*\*p < .001; \*\*p < .01; \*p < .05

Model 1 and Model 2 showed, AL had a positive effect on SERs ( $\beta = 0.320$ ;  $p < 0.001$  and  $\beta = 0.396$ ;  $p < 0.001$  respectively), therefore fully supporting Hypothesis H1. **In step 1** of Model 1, AL and managerial ability with ethics were entered. As shown in **Table 3**, both AL and managerial ability with ethics were positively and significantly induced SERs ( $\beta = 0.320$ ;  $p < 0.001$  and  $\beta = 0.262$ ;  $p < 0.001$  respectively;  $\Delta R^2 = .233$ ;  $p < 0.001$ ). **In step 2** of Model 1, we added an interaction term of AL $\times$  managerial ability with ethics. The results suggested that the interaction term of AL $\times$  managerial ability with ethics was positively and significantly with SERs ( $\beta = .252$ ;  $p < 0.001$ ;  $\Delta R^2 = .031$ ;  $p < 0.001$ ); therefore, Hypothesis H1a was fully accepted. Regarding  $\Delta R^2$  from step 2, an interaction term of AL $\times$  managerial ability with ethics increased the predictive power for Model 1 = 3.1%. Scholars stated that “even under the most extreme condition, an interaction effect may occur only a relatively small amount of variance” (Evans, 1985; McClelland & Judd, 1993). Therefore, managerial ability with ethics had a positive interaction effect on the relationships between AL and SERs.

**In step 1** of Model 2 also showed that both AL and a positive working relationship had a positive and significant effect on SERs ( $\beta = 0.396$ ;  $p < 0.001$  and  $\beta = 0.098$ ;  $p < 0.05$ , respectively;  $\Delta R^2 = .211$ ;  $p < 0.001$ ). **In step 2**, Model 2, we added the interaction term of AL  $\times$  a positive working relationship. The results suggested that the interaction term of AL $\times$  a positive working relationship had a positive interaction effect on SERs ( $\beta = 0.162$ ;  $p < 0.05$ ;  $\Delta R^2 = .016$ ,  $p < 0.05$ ); therefore, Hypothesis H1b was fully accepted. Regarding  $\Delta R^2$  from step 2, the interaction term of AL $\times$  a positive working relationship increased the predictive power for Model 2 = 1.6%. Thus, a positive working relationship had a positive interaction effect on the relationships between AL and SERs.

To compare two moderating variables, (a) managerial ability with ethics and (b) a positive working relationship, standardized coefficients  $\beta$  was adopted to compare the interaction terms of predictor  $\times$  moderator. This comparison showed that managerial ability with ethics ( $\beta = 0.178$ ;  $p < 0.001$ ) had a stronger interaction effect on the relationships between AL and SERs than a positive working relationship ( $\beta = 0.125$ ;  $p < 0.05$ ). Likewise, observing  $\Delta R^2$  after step 2 from Model 1 and Model 2 also suggested that managerial ability with ethics had a stronger interaction effect than a positive working relationship.

Model 3 and Model 4 presented that AL had a positive effect on trust ( $\beta = 0.372$ ;  $p < 0.001$ ;  $\beta = 0.401$ ;  $p < 0.001$  respectively), hence fully supporting Hypothesis H2. **In step 1** of Model 3, AL and managerial ability with ethics were entered. As shown in **Table 3**, both AL and managerial ability with ethics had a positive and significant effect on trust ( $\beta = 0.372$ ;  $p < 0.001$ ;  $\beta = 0.173$ ;  $p < 0.001$  respectively;  $\Delta R^2 = .288$ ;  $p < 0.001$ ). **In step 2** of Model 3, we added an interaction term of AL $\times$  managerial ability with ethics. The results suggested that the interaction term of AL $\times$  managerial ability with ethics had a positive and significant effect on trust ( $\beta = .278$ ;  $p < 0.001$ ;  $\Delta R^2 = .050$ ;  $p < 0.001$ ); therefore, Hypothesis H2a was fully accepted. Regarding  $\Delta R^2$  from step 2, an interaction term of AL $\times$  managerial ability with ethics increased the predictive power for Model 3 = 5%. Therefore, managerial ability with ethics had a positive interaction effect on the relationships between AL and trust.

**In step 1** of Model 4 also showed that both AL and a positive working relationship had a positive and significant effect on trust ( $\beta = 0.401$ ;  $p < 0.001$  and  $\beta = 0.107$ ;  $p < 0.01$ , respectively;  $\Delta R^2 = .296$ ;  $p < 0.001$ ). **In step 2**, Model 4, we added the interaction term of AL  $\times$  a positive

working relationship. The results suggested that the interaction term of AL× a positive working relationship had a positive interaction effect on trust ( $\beta = 0.245$ ;  $p < 0.001$ ;  $\Delta R^2 = .047$ ,  $p < 0.001$ ); therefore, Hypothesis H2b was fully accepted. Regarding  $\Delta R^2$  from step 2, an interaction term of AL× a positive working relationship increased the predictive power for Model 4 = 4.7%. Thus, a positive working relationship had a positive interaction effect on the relationships between AL and trust.

A comparison of two moderators, (a) managerial ability with ethics and (b) a positive working relationship, standardized coefficients  $\beta$  was adopted to compare the interaction terms of predictor × moderator. This comparison showed that managerial ability with ethics ( $\beta = 0.227$ ;  $p < 0.001$ ) had a stronger interaction effect on the relationships between AL and trust than a positive working relationship ( $\beta = 0.218$ ;  $p < 0.001$ ). Likewise, observing  $\Delta R^2$  after step 2 from Model 3 and Model 4 also suggested that managerial ability with ethics had a stronger interaction effect than a positive working relationship.

Model 5 and Model 6 presented that SERs had a positive and significant effect on trust ( $\beta = 0.189$ ;  $p < 0.001$ ;  $\beta = 0.233$ ;  $p < 0.001$  respectively), therefore fully supporting Hypothesis H3. **In step 1** of Model 5, SERs and managerial ability with ethics were entered. As shown in **Table 3**, both SERs and managerial ability with ethics had a positive and significant effect on trust ( $\beta = 0.189$ ;  $p < 0.001$  and  $\beta = 0.268$ ;  $p < 0.001$  respectively;  $\Delta R^2 = .188$ ;  $p < 0.001$ ). **In step 2** of Model 5, we added an interaction term of SERs × managerial ability with ethics. The results suggested that the interaction term of SERs × managerial ability with ethics had a positive and significant effect on trust ( $\beta = .179$ ;  $p < 0.05$ ;  $\Delta R^2 = .013$ ;  $p < 0.05$ ); therefore, Hypothesis H3a was fully accepted. Regarding  $\Delta R^2$  from step 2, the interaction term of SERs × managerial ability with ethics increased the predictive power for Model 5 = 1.3%. Therefore, managerial ability with ethics had a positive interaction effect on the relationships between SERs and trust.

**In step 1** of Model 6 also presented that both SERs and a positive working relationship had a positive and significant effect on trust ( $\beta = 0.233$ ;  $p < 0.001$  and  $\beta = 0.156$ ;  $p < 0.001$  respectively;  $\Delta R^2 = .173$ ;  $p < 0.001$ ). **In step 2**, Model 2, we added the interaction term of SERs × a positive working relationship. The results suggested that the interaction term of SERs × a positive working relationship had a positive and significant effect on trust ( $\beta = 0.181$ ;  $p < 0.01$ ;  $\Delta R^2 = .024$ ,  $p < 0.01$ ); therefore, Hypothesis H3b was fully accepted. Regarding  $\Delta R^2$  from step 2, the interaction term of SERs × a positive working relationship increased the predictive power for Model 6 = 2.4%. Thus, a positive working relationship had a positive interaction effect on the relationships between SERs and trust.

A comparison of two moderators, (a) managerial ability with ethics and (b) a positive working relationship, standardized coefficients  $\beta$  was adopted to compare the interaction terms of predictor × moderator. This comparison showed that a positive working relationship ( $\beta = 0.157$ ;  $p < 0.01$ ) had a stronger interaction effect on the relationships between SERs and trust than managerial ability with ethic ( $\beta = 0.116$ ;  $p < 0.05$ ). Similarly, observing  $\Delta R^2$  after step 2 from Model 5 and Model 6 also suggested that a positive working relationship had a stronger interaction effect than managerial ability with ethics.

Further, simple slope analysis was applied to explore those interactions.

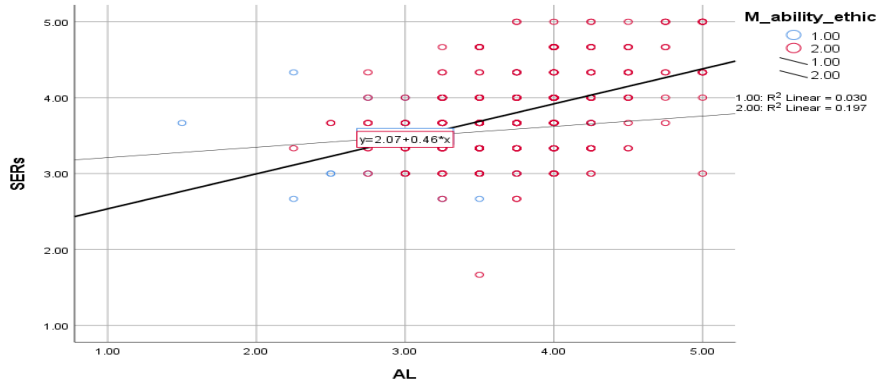


Figure 2. Hypothesis testing (H1a; Model 1)

Regarding managerial ability with ethics (see details in Appendix A), Hypothesis H1a (Figure 2) posited that leader behaviors during the COVID-19 pandemic affected the relationships between AL and SERs. When employees satisfied their managerial ability with ethics, the AL of that leader increased in employees' eyes, leading to higher SERs. Figure 2 revealed that poor managerial ability with ethics (thin line or 1.00) showed the smaller positive slope (a flatter slope) of a line between AL and SERs.  $R^2$  was equal to 0.030. If the square root of this  $R^2$  was taken ( $R^2 = \sqrt{0.030}$ ), it resulted in the R-value or multiple correlations of 0.17320.

Moreover, it appeared that excellent managerial ability with ethics (thick line or 2.00) presented the higher positive slope (a steeper slope) of a line between AL and SERs.  $R^2$  was equal to 0.197. Afterward, this  $R^2$  was taken the square root ( $R^2 = \sqrt{0.197}$ ). Subsequently, that value was transformed to the R or multiple correlation values equal 0.44384. Moreover, the slopes of the lines in the interaction plot between AL and SERs were nonparallel. Based on the above result, the effect of AL on SERs changed as managerial ability with ethics increased.

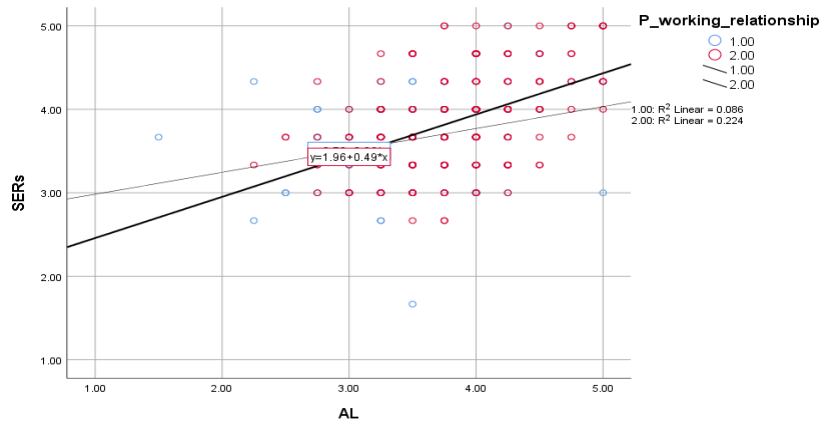


Figure 3. Hypothesis testing (H1b; Model 2)

Regarding a positive working relationship (see details in Appendix A), Hypothesis H1b (Figure 3) posited that a positive working relationship between leaders and organizational members during the COVID-19 pandemic was significant to strengthen the relationships between AL and SERs. Figure 3 revealed a poor positive working relationship between leaders and organizational members (thin line or 1.00) presented the smaller positive slope (a flatter

slope) of a line between AL and SERs.  $R^2$  was equal to 0.086. If the square root of this  $R^2$  was taken ( $R^2 = \sqrt{0.086}$ ), it resulted in the R or multiple correlations of 0.29326. Furthermore, it revealed that the strong positive working relationships between leaders and organizational members (thick line or 2.00) showed the higher positive slope (a steeper slope) of a line between AL and SERs.  $R^2$  was equal to 0.224. Afterward, this  $R^2$  was taken the square root ( $R^2 = \sqrt{0.224}$ ). Subsequently, that value was transformed to the R or multiple correlation values equal to 0.47329 (R). Furthermore, the slopes of the lines in the interaction plot between AL and SERs were nonparallel. According to the above result, the effect of AL on SERs changed as a positive working relationship increased.

With regard to leader behaviors during COVID-19, (a) managerial ability with ethics and (b) a positive working relationship had a positive interaction effect on the relationships between AL and SERs. The result can be interpreted to mean that if managerial ability with ethics and a positive working relationship were high, the positive relationships between AL and SERs were also high. However, managerial ability with ethics showed a stronger interaction effect on the relationships between AL and SERs than a positive working relationship. The slopes in Figure 3 showed that the distance between the higher and the lower regression line under H1a was greater than under H1b. We demonstrated by subtracting R values between the higher and lower lines (H1a:  $0.44384 - 0.17320 = 0.27064$  (R); H1b:  $0.47329 - 0.29326 = 0.18003$  (R)). The above result implies that managerial ability with ethics had a stronger effect on the relationships between AL and SERs than a positive working relationship.

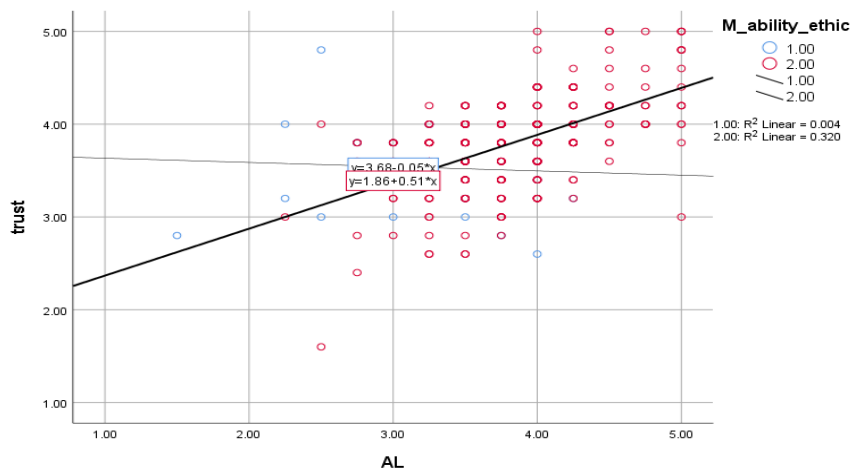


Figure 4 Hypothesis testing (H2a; Model 3)

Regarding leader behaviors during COVID-19 (see details in Appendix A), Hypothesis 2a (Figure 4) posited that managerial ability with ethics positively affected the relationships between AL and trust. When employees satisfied managerial ability with ethics of leaders, it meant that leaders could build high qualities of AL which promoted more trust in the organization. In Figure 4, a poor managerial ability with ethics (thin line or 1.00) showed the smaller negative slope (a flatter slope) of a line between AL and trust.  $R^2$  was equal to 0.004. When the square root of this  $R^2$  was taken ( $R^2 = \sqrt{0.004}$ ), it became the R or multiple correlation values equal to 0.06324. In complete contrast, excellent managerial ability with ethics (thick line

or 2.00) presented the higher positive slope (a steeper slope) of a line between AL and trust.  $R^2$  was equal to 0.320. Then, this  $R^2$  was taken the square root ( $R^2 = \sqrt{0.320}$ ); therefore, the R or multiple correlation values was equal to 0.56568. Further, the slopes of the lines in the interaction plot between AL and trust were nonparallel. Regarding the above result, the effect of AL on trust changed as managerial ability with ethics increased.

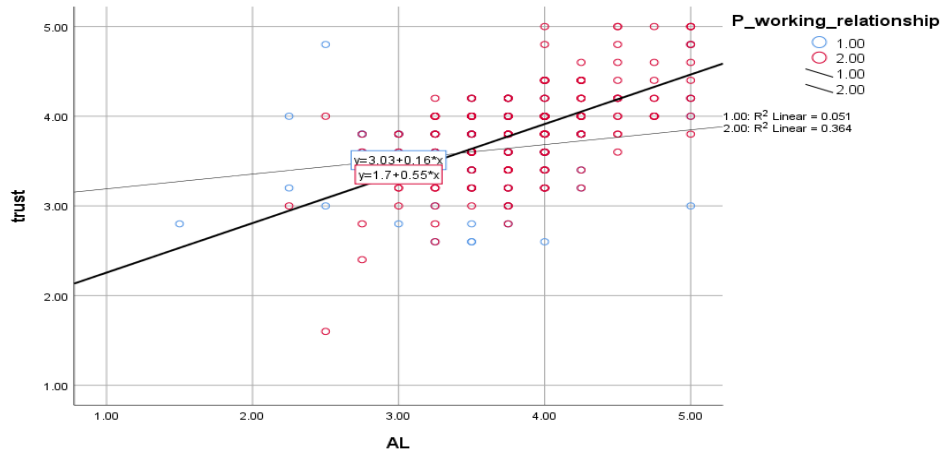


Figure 5. Hypothesis testing (H2b; Model 4).

Concerning leader behaviors during COVID-19 (see details in Appendix A), Hypothesis H2b (Figure 5) posited that a positive working relationship between leaders and organizational members influenced the positive relationships between AL and trust. Figure 5 revealed a poor working relationship between leaders and organizational members (thin line or 1.00) presented the smaller positive slope (a flatter slope) of a line between AL and trust.  $R^2$  was equal to 0.051. If  $R^2$  was taken the square root ( $R^2 = \sqrt{0.051}$ ), it resulted in multiple correlations of 0.22583. Furthermore, it revealed a strong positive working relationship between leaders and organizational members (thick line or 2.00) presented the higher positive slope (a steeper slope) of a line between AL and trust.  $R^2$  was equal to 0.364. If the square root was taken ( $R^2 = \sqrt{0.364}$ ), the R or multiple correlations was equal to 0.60332. Moreover, the slopes of the lines in the interaction plot between AL and trust were nonparallel. Based on the above result, the effect of AL on trust changed as a positive working relationship increased.

Concerning H2a and H2b, (a) managerial ability with ethics and (b) a positive working relationship had a positive interaction effect on the relationships between AL and trust. It can be interpreted to mean that if managerial ability with ethics and a positive working relationship were high, the relationships between AL and trust were also high. However, managerial ability with ethics had a stronger interaction effect on the relationships between AL and trust than a positive working relationship. Looking at H2a and H2b slopes, the distance between the higher regression line and the lower regression line of H2a was farther than that of H2b. We explained by subtracting R values between the higher and lower lines (H2a:  $0.56568 - 0.06324 = 0.50244$  (R); H2b:  $0.60332 - 0.22583 = 0.37749$  (R)). It implied that managerial ability with ethics had a stronger effect on the relationships between AL and trust than a positive working relationship.

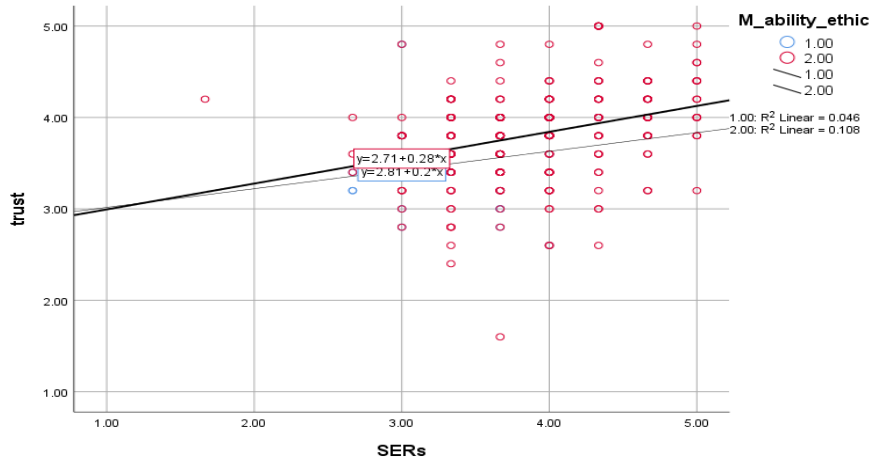


Figure 6. Hypothesis testing (H3a; Model 5).

Regarding leader behaviors during COVID-19 (see details in Appendix A), Hypothesis H3a (Figure 6) posited that managerial ability with ethics positively affected the relationships between SERs and trust. Figure 6. revealed that poor managerial ability with ethics (thin line or 1.00) showed the smaller positive slope (a flatter slope) of a line between SERs and trust.  $R^2$  was equal to 0.046. If the square root of this  $R^2$  was taken ( $R^2 = \sqrt{0.046}$ ), it exhibited the R or multiple correlations of 0.2145. Moreover, it appeared that excellent managerial ability with ethics (thick line or 2.00) presented the higher positive slope (a steeper slope) of a line between SERs and trust.  $R^2$  was equal to 0.108. If this  $R^2$  was taken the square root ( $R^2 = \sqrt{0.108}$ ), it presented the R or multiple correlations equal to 0.3286. Further, the slopes of the lines in the interaction plot between SERs and trust were nonparallel. It meant that the effect of SERs on trust changed as managerial ability with ethics increased.

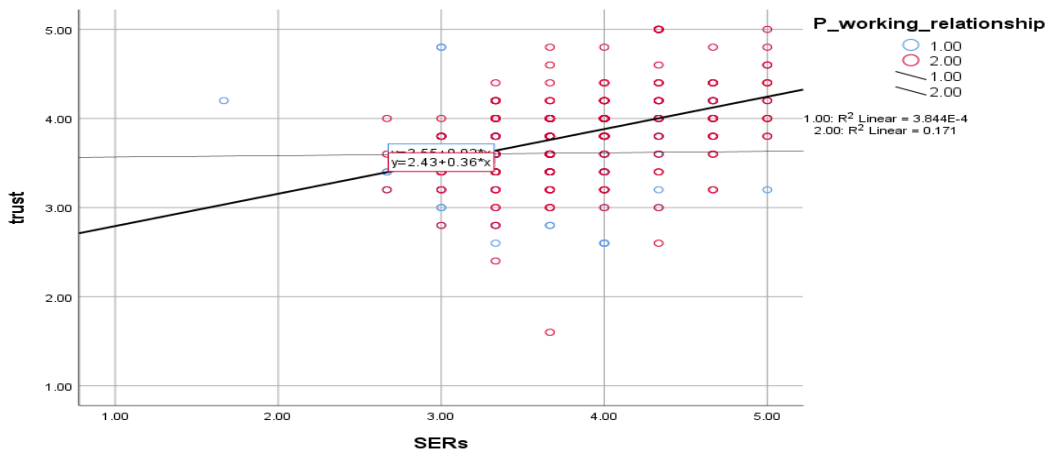


Figure 7 Hypothesis testing (H3b; Model 6).

Regarding leader behaviors during COVID-19 (see details in Appendix A), Hypothesis H3b (Figure 7) posited that a positive working relationship between leaders and organizational members influenced the relationships between SERs and trust. Figure 7 showed that a poor positive working relationship between leaders and organizational members (thin line or 1.00)

presented the smaller positive slope (a flatter slope) of a line between SERs and trust. Additionally,  $R^2$  was equal to 0.0003844(3.844e-4). If the square root of this  $R^2$  was taken ( $R^2 = \sqrt{0.0003844}$ ), it became the R or multiple correlations of 0.01961. Furthermore, it reveals that a strong positive working relationship between leaders and organizational members (thick line or 2.00) presented the higher positive slope (a steeper slope) of a line between SERs and trust.  $R^2$  was 0.171. When this  $R^2$  was taken as the square root ( $R^2 = \sqrt{0.171}$ ), it was transformed to the R or multiple correlations equal to 0.41352. In addition, the slopes of the lines in the interaction plot between SERs and trust were nonparallel. It meant that the effect of SERs on trust changed as a positive working relationship increased.

Regarding H3a and H3b, (a) managerial ability with ethics and (b) a positive working relationship influenced positive and strong linear relationships between SERs and trust. Thus, as managerial ability with ethics and a positive working relationship increased, the relationships between SERs and trust increased. However, a positive working relationship had a stronger interaction effect on the relationships between SERs and trust than managerial ability with ethics. Looking at H3a and H3b slopes, the distance between the higher regression line and the lower regression line of H3b was greater than that of H3a. We explained by subtracting R values between the higher and lower lines (H2a:  $0.3286 - 0.2145 = 0.1141$  (R); H2b:  $0.41352 - 0.01961 = 0.39391$  (R). It implied that a positive working relationship had a stronger effect on the relationships between SERs and trust than managerial ability with ethics.

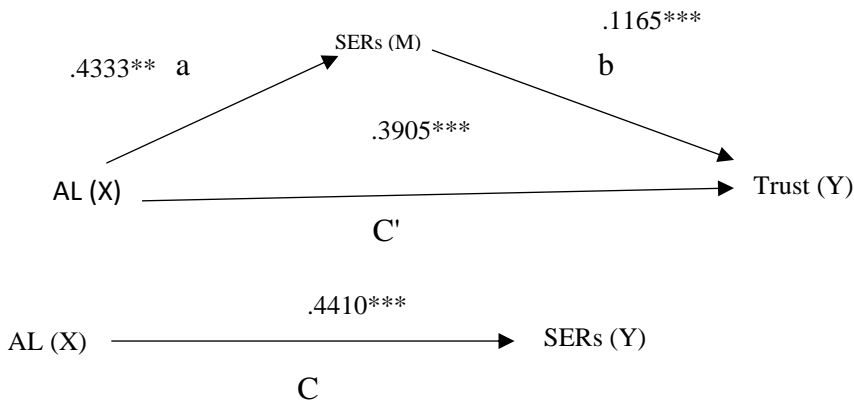
**Table 4.** Results of mediation coefficient and bootstrapping for mediation analysis

Testing Paths	Unstandardized Coefficient		t	sig	Bootstrapping	
	Standard Coefficient Error				LLCI	ULCI
IV→M (a)	.4333	.0495	8.7494	.0000 (p < 0.0001)	.3358	.5307
M→DV (b)	.1165	.0460	2.5312	.0119 (p < 0.05)	.0259	.2071
IV→M→DV(C')	.3905	.0452	8.6451	.0000 (p < 0.0001)	.3016	.4794
IV→DV (C)	.4410	.0409	10.7894	.0000 (p < 0.0001)	.3606	.5214
Indirect effect	.0505	.0213			.0107	.0944

Note: IV (AL), MV (SERs), DV (trust); a 95% correct bias confidence interval with 5000 bootstrapping- procedure sample is selected.

The process macro for SPSS developed by Hayes was used to analyze the mediating hypothesis in this study. Model 4 from the process macro was selected to find the total effect of AL on trust, the direct effect of AL on trust, and the indirect effect of AL on trust that presented the mediating role of SERs between AL and trust. Hypothesis H4 was hypothesized that SERs had a positive mediating effect on the relationships between AL and trust. Table 4 showed that SERs mediated the relationships between AL and trust.





The results demonstrated that the total effect of X on Y presented .4410\*\*\* (C) and the direct effect of X on Y presented .3905\*\*\* (C'); thus, the total effect subtracts direct effect was equal to the indirect effect. Therefore, indirect effect of X on Y was equal to .4410\*\*\* - .3905\*\*\* = .0505\*\*\* (LLCI= .0107, ULCI = .0944). Regarding lower and upper bound confidence intervals of the indirect effect of X on Y, it showed that lower bound and upper bound confidence intervals did not cross zero. Thereby, the indirect effect of X on Y was positively significant. Moreover, the coefficient of the total effect of X on Y (C) was greater than the Coefficient of direct effect (C'). Therefore, hypothesis H4 was fully supported. It could be explained that SERs had a partial mediating effect on the relationships between AL and trust; as a result, AL with high quality of SERs positively affected trust in leaders and the organization; on the other hand, AL with low quality of SERs negatively affected trust in leaders and the organization. To improve trust in their organization, authentic leaders needed to develop their AL behavior with high quality of SERs.

## 5. Discussion

COVID-19 situation has negatively impacted trust in leaders and the organization. As authentic leaders, they require to maintain trust in their organization. The results show that AL has a positive effect on SERs among staff in the organization. AL encourages positive psychological capacities of leaders and staff in the organization, such as optimism, confidence, resiliency, and hope (Avolio & Gardner, 2005). Those positive psychological capacities also strengthen self-awareness and self-regulation, leading to positive self-development. Tnay et al. (2013) also indicate that leaders' positive attitude and skills motivate cooperation among employees, employees' commitment, and social exchange relationship quality in their workplace. Therefore, leadership is vital for shaping quality SERs (Li & Hui, 2019); AL is grounded as having ethical behavior and intentions in the motives that can promote leader and follower relationships based on social exchange theory (Blau, 1964; Walumbwa et al., 2008). Regarding leader-follower exchange relationships, fairness can be determined as an essential factor for judging whether their leaders are authentic or not when a high-quality social exchange relationship and a low-quality social exchange relationship are considered from the perceived

fairness of employees (Tse et al.,2011). On the one hand, AL strengthens employees' emotional connection with the organization; thus, their creativity improves job performance (Duarte et al.,2021).

Hsieh & Wang (2015) note that AL has a positive effect on trust in the organization. AL influences employee attitude, behavior, and work outcomes such as job satisfaction, trust, performance, and creativity. AL is effective for promoting trust with subordinates and their organizations where trust in leadership is required for a high level of interdependence, cooperation, information sharing, and all kind of trust (Hassan & Ahamed, 2011). In addition, AL with high interpersonal trust can reinforce employees' work engagement that enhances organizational performance (Hassan & Ahamed, 2011). Furthermore, AL motivates employees' organizational citizenship behavior through trust and evokes trust in the organization (Coxen et al.,2016), where ability, benevolence, and integrity are essential characteristics of trustworthy leadership (Mayer et al.,1995). As a result, Iqbal et al. (2020) firmly state that AL positively influences both affective-based trust and cognitive-based trust.

Shore et al. (2006) note that SERs positively affect trust. SERs highlight feelings, obligation, and trust. Zhu (2012) indicates that SERs can develop into trust, mutual commitment, and loyalty; therefore, high-quality SERs can improve trust in leaders and their organizations. Konovsky & Pugh (1994) argue that high-quality SERs such as social procedural justice evoke trust, improving employees' organizational citizenship behavior that promotes organizational performance. Further, AL with high quality of SERs reinforces a trusting relationship between authentic leaders and subordinates better than AL with low quality of SERs as SERs play a mediator role between AL and trust (Whitener et al., 1998; Jeong & Oh, 2017). By mediator role of leader and follower relationships based on the social exchange theory, AL has a significant indirect effect on employees' voice behavior (Hsiung,2011). Therefore, it can be interpreted that in high-quality leader and follower relationships based on the social exchange theory, organizational members have higher trust in and understanding their leaders (Hsiung,2011).

Leader behaviors during COVID-19, both (a) managerial ability with ethics and (b) a positive working relationship (see Appendix A), are robust the positive relationships between AL and SERs during the pandemic. Regarding the high quality of AL, authentic leaders show trustworthy leadership who obtains managerial competency, integrity, benevolence, credibility, social skills, and emotional intelligence. Those characteristics of AL influence the positive social exchange relationships between leaders and followers; as a result, they help one another achieve organizational objectives (Burke et al., 2007; Tse et al., 2011; Savolainen & Häkkinen, 2011). During COVID-19, authentic leadership's trust, commitment, reliance, value, and competency nourish the positive SERs (Cortez & Johnston, 2020). Therefore, leadership quality has become essential to encourage SERs during COVID-19 (Fernandez & Shaw, 2020).

Leader behaviors during COVID-19 both (a) managerial ability with ethics and (b) a positive working relationship (as moderators) strengthen the positive relationships between AL and trust. Fernandez & Shaw (2020) indicate that high-quality leadership robustly trusts the organization during the COVID-19 era, as skillful leadership creates workplace environments with a culture of trust is the significant priority to enhance organizational performance. SHAHIN (2021) indicates that authentic leaders show a vital role in the success and survival of their organizations during COVID-19 because characters of AL allow leaders to build positive

relationships, inspire employees, and encourage an atmosphere of openness. Therefore, AL establishes trust through an honest relationship with their subordinates (through leaders' ethical behavior).

Elrod & Ramaley (2020) note that shared leadership is needed since all situations require rapid responses from leaders. Hence, decentralization is essential for an organizational best performance. Furthermore, shared leadership requires the knowledge and experiences of people than those in authority; therefore, the role of a leader can be changed based on the situation (Elrod & Ramaley, 2020). Moreover, team-building skills, coordination skills, problem-solving skills, and communication skills are the most critical competencies of leaders to develop trust and SERs (Awan et al., 2015). Bachmann (2011) also indicates that strong leadership skills and authenticity robustly influence trust.

Leader behaviors during COVID-19 both (a) managerial ability with ethics and (b) a positive working relationship (as moderators) are robust the positive relationships between SERs and trust during COVID-19. KNOWLEDGE@WHARTON (2020) notes that regarding the need for teleworking, trust is a driving factor in cooperation between supervisors and followers and between colleagues. The positive relationships between leaders and followers and peers to peers are vital for increasing trust in an organization and effectively managing remote workers. A lack of trust leads to an interruption in the relationships between employees and supervisors. Trimble (2020) states that telework can disrupt the trust in organizations when leaders do not trust their subordinates who do telework by controlling and monitoring them closely. Thus, the relationships between both parties were harmed (KNOWLEDGE@WHARTON, 2020); controlling and monitoring leadership leads to dissatisfaction in SERs. Nevertheless, high-quality SERs reduce their conflict and increase their trust (Argyle Public Relationships, 2020). Leaders' trustworthiness and social skills are essential for building high-quality SERs (Emmett et al., 2020). Mental safety impacts SERs among staff; therefore, increasing mental safety positively affects the staff's high performance (Newman et al., 2015; Newman et al., 2017). According to mental safety, if employees feel secure, they can perform at their best (Iqbal et al., 2020). Chou (2016) states that perceived organizational support induces the attitude and behavior of employees such as valued and cared for by their organization; therefore, perceived organizational support can build high-quality SERs between leaders and employees that lead to trust development in the organization. Dolan et al. (2020) argue that SERs correlate with trust. High-quality SERs induce relationship satisfaction and trust (Jeong & Oh, 2017). Meira and Hancer (2021) note that the competence and self-determination of employees have been improved when they perceive organizational support.

### *5.1 Theoretical and practical implications*

This paper investigates the relationships among AL, SERs, and trust during the pandemic by applying leader behaviors during COVID-19 regarding (a) managerial ability with ethics (b) a positive working relationship as moderators. Empirical study shows that AL has positive relationships with SERs and trust; likewise, AL involves trust and integrity to manage leader and follower relationships (Qiu et al., 2019). On the one hand, AL promotes trust, optimism, and cooperation among staff with fairness and transparency (Qiu et al., 2019; Sharkie, 2009; Stander et al., 2015). Likewise, AL positively induces employee nurses' trust in their leaders and work

engagement, and these enhance employees' voice behavior that can help the hospitals improve the perceived care quality of patients (WONG et al.,2010). The result implies that authentic leaders can enhance trust in leadership and their organizations by fostering genuine and positive relationships with their employees (WONG et al.,2010).

Further, AL highlights inspiration and ethical behavior to construct positive workplace cultures (Ilies et al., 2005). In addition, high-quality leadership skills are required to establish high-quality SERs to prevent staff from leaving their organization (Waldkirch et al., 2018) when high-quality SERs influence positive leader and follower relationships (Cropanzano et al., 2017). Cole et al. (2002) indicate that high-quality SERs reinforce employee positive work behavior such as lower intention to leave the organizations and positive attitude that leads to higher job satisfaction. In addition, high-quality SERs evoke trust and a positive working relationship like family within their organizations. Similarly, high-quality SERs between leaders and followers influence trust, the feeling of obligation, and gratitude. Cole et al. (2002) suggest that the organization should provide a training program for employees and their teams about interpersonal skills to promote the development of higher quality of SERs.

Further, authentic leaders should enhance the positive social exchange relationships with their team members by focusing on participative, communicative, and forgiving behaviors. Moreover, they should strengthen those behaviors through evaluation and compensation to reward positive workgroup behaviors. Tyagi & Puri (2017) indicate that AL obtains a high standard of ethical behavior, integrity, and values that can promote trust of organizational members in their supervisors through relational transparency, which further establishes the strong SERs between leaders and followers. Furthermore, authentic and unbiased behaviors of leaders reinforce employee citizenship behavior through positive SERs. Finally, Tyagi & Puri (2017) suggest as follows: First, if leaders understand their strengths and weaknesses, they tend to make the right decision for their teams and themselves (self-awareness); thereby, authentic leaders always collect information based on the problem and evaluate the alternatives to take the right decision for the best performance of their teams regarding teams' strengths and weaknesses (Balance process). Second, authentic leaders develop open communication, ethical environments, and shared values to encourage employees' self-motivation. All these practices build relational transparency between leaders and followers based on healthy SERs; as a result, employees are willing to pursue the organizational goals. Tyagi & Puri (2017) suggest the approach that can increase credibility and AL that we can call G.R.A.T.E.F.U.L. Approach that is genuine, responsible, ardent, tolerant, empathetic, flexible, unbiased, and loyal.

Applying leader behaviors during COVID-19 regrading (a) managerial ability with ethics (b) a positive working relationship as moderators have a positive influence on the relationships between variables such as AL and SERs, AL and trust, and SERs and trust during the COVID-19 era. These factors comprise ten sub-factors, which are shown in Appendix A.

According to leader behaviors during COVID-19 regrading managerial ability with ethics, Emmett et al. (2020) indicate that actions of leaders in managing change effectively and fulfilling staff's expectations, supporting the well-being of staff in both physically and mentally, ethical behavior, and social skills such as communication, coordinating, negotiation, persuasion, service orientation, and social perceptiveness positively impact AL, SERs, and trust. Negotiation is an essential social skill for working relationships in teams or an organizational level, as

effective negotiation can solve the conflict between parties through discussion (Farazmand et al., 2012; Han et al., 2021; Tu et al., 2021). Moslehpour et al. (2021) indicate that gender differences affect ethical behavior and negotiation styles differently as they respond to the conflict based on motivation, perspective, and interactive behavior. Regarding basic needs from the first phase of the pandemic, such as safety and stability, however, those needs become more complex when it enters to next step. Emmett et al. (2020) suggest that employees need varied types of support from leaders, such as two-way communication channels with technological support. Moreover, as authentic leaders, they must have the ability to recognize their employees' most pressing needs in this month or at that moment or understand their employees and establish trust by their action-oriented to empathy and transparency.

Moreover, employee well-being and work effectiveness require a trusting relationship, social cohesion, and personal purpose, enabling improvements in those areas by organizing actions that can help employees. Duarte et al. (2021) suggest that organizational members will engage in positive behaviors when their organizations treat them well; therefore, authentic leaders focus on suitable organizational treatment to retain affective commitment and organizational performance. Rapid response and clear leader communication are essential for establishing trust during this crisis (Kaul et al., 2020). Elrod & Ramaley (2020) indicate that shared leadership establishes higher agility, innovation, and collaboration among staff. AL should have short-term and long-term planning that combines standards and solutions outside and inside the box (Kaul et al., 2020).

According to leader behaviors during COVID-19 regarding a positive working relationship, Trimble (2020) indicates that telework during the pandemic has caused diminished of the manager and employee working relationships or SERs, leading to the broken trust between them. On the other hand, Contreras et al. (2020) argue that effective leadership sees telework as beneficial for both an organization and staff. Concerning being successful in teleworking, the hierarchical work structure needs to be reduced, and high-quality SERs need to be promoted for enhancing high-trust relationships. Additionally, emotional intelligence such as self-awareness, managing emotion, motivating oneself, empathy, and social skills are necessary for leaders to encourage SERs and trust in their organization (Benge, 2019; Lambert, 2017). Moslehpour et al. (2022) indicate that leaders' emotional competence positively influences high job satisfaction. This study suggests that leaders with high emotional competence can create a productive environment for their employees and assist them in enhancing their emotional conditions that can promote their job satisfaction. In addition, Parker et al. (2021) also report that remote technologies benefit teleworkers' work effectiveness and increase relationships with co-workers and managers; for example, online tools and platforms help employees keep in touch with their co-workers and their managers easily.

## *5.2 managerial implications*

These implications are based on reviewing literature from different countries, benefits managers, and practitioners. Under the pressure of the pandemic, AL behavior, high-quality SERs are imperative for promoting trust. Additionally, excellent leader behaviors during COVID-19 both managerial ability with ethics and a working relationship positively affect trust when followers need advice from their supervisors to lead them in the right direction. Therefore,

trustworthy leadership is essential for improving SERs and trust. The managerial implications are recommended as follows:

High-quality social skills are imperative to maximize trust and minimize stress. Social skills include influencing, communication, conflict management, leadership, change management, building bonds, and cooperation and collaboration skills. Calm and deliberate supervisors are essential for delivering the decisions and actions to reduce stress in the organization. In addition, supervisors should provide a communication routine to follow situations to prevent misunderstanding between the organization and staff.

Empathy and optimism are essential to supervisors when sharing important information with followers in stressful situations such as reduced work hours or being laid off. AL makes staff sense that there is a good chance of being in the organization, leading to their organizational citizenship behavior development that encourages staff to support one another since AL has an association with organizational citizenship behavior.

Trustworthiness of leadership is imperative for improving SERs and trust in the organization. Honesty, transparency, and comprehension of the risks of situations are also driving factors for establishing trust in the organization. Consequently, high-quality leadership induces SERs and trust. A forum for feedback is vital for workers if they desire to comment or ask questions. Followers' engagement in situations allows leaders to establish trust with them. Having a high emotional quotient (EQ) is imperative for leaders to establish high-quality SERs and trust in their organization.

## **6. Conclusion**

COVID-19 situations amplify the demand to enlarge the improvement of trust in organizations. AL increases SERs and trust, whereas SERs enhance trust in an organization. Furthermore, AL under the influence of leader behaviors during COVID-19 can influence the positive associations between SERs and trust, while SERs under the influence of leader behaviors during COVID-19 positively motivate the associations between SERs and trust in an organization. Moreover, AL with high-quality SERs can increase trust in managers. Managers need to show excellent AL behavior during COVID-19 to improve trust. Decentralization or shared leadership is needed, as rapid responses from team leaders in specific fields are imperative to sustain the performance of an organization and effectively solve the problems of management teams. AL behavior is beneficial for boosting SERs and trust since authentic leaders build authentic relationships with colleagues and subordinates. However, receiving care and concern for leaders can nourish a culture of trust in their organizations. Although there is difficulty managing trust and SERs in the process of work from home, high-quality leadership can manage it effectively (Contreras et al., 2020).

The paper can benefit leaders in finding the proper procedure to increase trust in organizations so that organizations can maintain outstanding performance. To survive during a crisis, administrative teams must understand the factors affecting trust in organizations.

Limited and further study

The coronavirus disease is still prevalent, leading to difficulties in increasing data collection. Data for this study were only collected from Thai managers. Further study, leader-follower relationships are an exciting issue for expanding knowledge about organizational relationships.

**Conflicts of Interest:** The authors declare no conflicts of interest.

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**Appendix A. The sub-factors of leader behaviors during COVID-19**

<b>Managerial ability with ethics</b>	<b>A positive working relationship</b>
(1) Actions of supervisors increase trust from followers.	(1) Subordinates treat their supervisors like family leaders.
(2) Subordinates are taken care of by supervisors.	(2) Employees who do telework interact intimately with their coworkers online.
(3) Well-being of subordinates is vital for supervisors.	(3) Supervisors and followers expand their interdependence online.
(4) Supervisors can meet their follower expectations; as a result, their followers are productive and healthy.	
(5) Supervisors can manage changes successfully.	
(6) Followers are promoted by supervisors with fairness.	
(7) Supervisors nourish their subordinate confidence by emotional intelligence.	