A moderated-mediation analysis of psychological empowerment: Sustainable leadership and sustainable performance

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ABSTRACT

Business cannot escape the impact of climate change that is deteriorating day by day. Many organizations are becoming motivated more than ever to introduce new business models, modern technologies, and supportive policies with an effort to cope with critical issues connected to climate change. The present study has investigated the mediating effect of psychological safety on the relationship between sustainable leadership and sustainable performance as well as evaluating the moderation impact of psychological empowerment on that relationship. To date, the present research is the first attempt wherein the incorporation of psychological empowerment and psychological safety has redefined the association between sustainable leadership and sustainable performance. Using cluster sampling approach, the data for this research was collected from 405 SMEs from Kuala Lumpur (Malaysia), Jakarta (Indonesia), and Bandar Seri Begawan (Brunei Darussalam). Using structural equation modelling (variance-based), this study has analyzed proposed hypothesis. Hierarchical regression analysis (PROCESS Macro) in SPSS was employed to analyze the moderated-mediation impact of psychological empowerment. The empirical results confirm that sustainable leadership has a substantial impact on psychological safety. This study confirms that sustainable leadership has positive indirect effect on sustainable performance through psychological safety which amplifies in the presence of psychological empowerment. Establishment of a psychologically safe environment that encourages knowledge sharing and openness to speaking will improve sustainable performance in the presence of sustainable leadership. Therefore, the development of practices that promote psychological empowerment among employees is essential. This study broadens our understanding of sustainable performance toward sustainable leaders, its underlying mechanism and conditional effect, making contribution to the psychology of honeybee leadership.

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1. Introduction

Climate change, cultural conflicts, political instability, technological innovations, economic integration, and disruptions caused by human migration, require organizations to focus on the local and global environments (de Sousa Jabbour, Vazquez-Brust, Ribeiro and Jabbour, 2019; Hallinger and Suriyankietkaew, 2018). Similarly, disasters, bankruptcies, and external pressures from diverse stakeholders such as public, governments, and NGOs force organizations to achieve sustainability (Iqbal et al., 2018a, 2018b; Khan and Yu, 2019).

Sustainability is a real challenge for both the society and businesses under intense climate change (Amui et al., 2017; Iqbal, 2018; Roscoe et al., 2019). The Association of Southeast Asian Nations (ASEAN) region faces environmentally sustainable growth as a major challenge. Despite progress in the sustainable development goals, propensity towards manufacturing hinders sustainable performance of ASEAN region (International Monetary Fund, 2018). There are rising concerns about the sustainability in the ASEAN region where economic growth depends on the energy-intensive carbon emitting production and polluting industries (Hara, 2018). As, ASEAN states try to excel in the dynamic market, demand for energy would increase. ASEAN region is also going through rapid urbanization and motorization making environmental sustainability more challenging (International Monetary Fund, 2018).

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Furthermore, quality of air is poor in many of ASEAN's major urban centers. There are big challenges for ASEAN member states to achieve growth that involves lower carbon emissions and sustainable management of natural resources (Anbumozhi, 2017).

Sustainable development requires trade-off of social, ecological and environmental goals where employees may think and speak up differently to enhance the performance at individual and organizational level (Iqbal, 2018; Khan et al., 2019). Achieving sustainability requires actions with unknown future results, so risk-taking can lend support to sustainable performance (Banerjee and Gupta, 2017). Risk tolerance may positively influence sustainable development provided leadership and employees share the same environmental and social goals (Gaweł, 2012). The level of risk tolerance within firms does not only depend on the overall organizational strategy, resources but equally relies on the employee's mindset about their work environment (Avery and Bergsteiner, 2011). The dynamic market constitutes of complexity, acceleration, and globalization which make employees feel insecure, and economically unstable (Landy and Conte, 2016). From the organizational psychological perspective, this situation reinforces the vitality of a positive work environment (Fabio et al., 2016). Eichbaum (2018) has recommended to cultivate the psychological safety which enhances employee's performance. The psychological safety refers to the degree employees perceive their work environment as conducive to taking interpersonal risks (Edmondson, 1999). Psychological safety focuses on the more immediate consequences. Under psychological safety, employees talk about conflict openly without fear of being negatively judged by others (Hood et al., 2016).

Keeping in view all forces that formulate employee's perception about their work environment, the most potent is considered to be leadership (Avery and Bergsteiner, 2011). Leadership is vital and key factor that promotes psychological safety (Edmondson and Lei, 2014). Environmental dynamics such as climate change, economic integration and cultural conflicts have led to the emergence of new leadership known as sustainable leadership or sustainability leadership (Avery and Bergsteiner, 2011; Kantabutra, 2012). Sustainable leadership takes into consideration a comprehensive scope of complex interconnections among individuals, the business community, the natural environment, and the global demands where the organization takes care of well-being by concerning social values, obtaining success in long term based on strategic decision-making value and preservation of the ecosystem (Burawat, 2019). For the sake of parsimony and clarity, the present study refers to sustainable leadership, Rhineland leadership, honeybee leadership, sustainability leadership, and leadership for sustainable development under the rubric of "sustainable leadership".

Organizational sustainable practices drive long-term, sustainable, and profitable results (Iqbal et al., 2018a, 2018b; Khan and Qianli, 2017). By providing a roadmap, best practices to structure management approach (Gaan and Mohanty, 2019), and leveraging long-term perspective to bind diverse stakeholders (Avery and Bergsteiner, 2011), sustainable leaders' leadership significantly influences financial performance and sustainable performance (Burawat, 2019). The sustainable leadership practices such as promoting novelty and sharing creation ideas (Avery and Bergsteiner, 2011), focusing on learning and continuous improvement (Rehman et al., 2019), and embracing errors in a non-punitive manner (Eichbaum, 2018) creates an environment where employees feel comfortable and experience new ideas. Doing that will foster psychological safety among employees and direct them to exhibit similar sustainable behaviors in their daily activities.

Although, sufficient studies are available about impact of leadership on the followers, there is a need to reveal the psychological linkages, mechanism and conditions through which employees are motivated to deliver beyond expectations (Newman et al., 2017).

Psychological safety encourages diverse input and motivates passions of all employees. Psychological mechanisms may likely mediate the relationship between leadership and employee's outcomes (Chiniara and Bentein, 2016; Yang et al., 2019). Furthermore, Burawat (2019) recommended to examine the potential mediating variables affecting the relationship between sustainable leadership and sustainable performance while link is missing in the extent literature. As context has a vital effect on the sustainable performance (Burawat, 2019), it may be important to explore potential moderators of such intervening variables to further enhance comprehension of not only what engages employees to perform sustainably but also the conditions necessary for such phenomenon. Therefore, based on the recommendation of Chen et al. (2019), this study investigates the moderated-mediating role of psychological empowerment on the association between sustainable leadership and sustainable performance.

This study contributes to the literature of sustainable development in two ways. First, this research makes an empirical contribution by testing the impact of sustainable leadership on psychological safety and the impact of psychological safety on sustainable performance. Second, the present research contributes theoretically to the sustainability and leadership literature by exploring the potential impact of psychological safety as a mediator linking the influence of sustainable leadership on the sustainable performance. In this regard, this study draws upon theories of social learning (Bandura and Walters, 1977), social exchange (Blau, 2017) and job demands-resources model (Demerouti et al., 2001), to elaborate how sustainable leadership can be used to effect sustainable performance by creating a psychological safe environment for the employees to exploit *opportunities* from the perspective of sustainable development. Previous studies have confirmed the strong relationship between leadership and psychological safety (Liu et al., 2014), and psychological safety and performance (Singh et al., 2013). The present study contributes theoretically by examining the moderating role of psychological empowerment based on the job demands-resources (JD-R) model and investigates the moderating-mediating impact of psychological empowerment on the relationship of sustainable leadership with sustainable performance.

1.1. Research objective

Based on above discussion, the research objectives of this study are as follows;

- To examine the impact of sustainable leadership on psychological safety.
- To investigate the impact of psychological safety on sustainable performance.
- To study the mediating effect of psychological safety on the relationship between sustainable leadership and sustainable performance.
- To study the moderating effect of psychological empowerment on the association of psychological safety with sustainable leadership.
- To examine the moderating-mediating impact of psychological empowerment on the relationship between sustainable leadership and sustainable performance.

2. Literature review

2.1. Theoretical background

This study employed social learning theory as underpinning theory to link sustainable leadership with psychological safety,

social exchange theory to relate psychological safety with sustainable performance. Social learning theory claims that individuals learn from each other through observation and interaction (Bandura and Walters, 1977). Leadership is considered as antecedent of psychological safety (Frazier et al., 2017). Extent literature suggests that leaders who promote participation, value people and focus on production, engender psychological safety among employees (Newman et al., 2017a,b). Sustainable leadership creates a context of psychological safety as they practice open visionary communication, focus on amicable labor relations, systemic innovation, extensive training and development (Suriyankietkaew and Avery, 2016). Sustainable leaders foster collaboration among diverse stakeholders and promotes long term value (Avery and Bergsteiner, 2011). Sustainable leaders maintain psychological health of their employees and maintain learning environment which are useful to accomplish organizational objectives (Peterlin et al., 2015). Learning cultures shapes employee's perception about psychological safety . With reference to social learning theory, listening to employees, providing them assistance, clear and consistent directions ensures employees the safety to take risk and engage in open communication (Liu et al., 2014).

Under psychological safety, employees experience higher level of support and respect in their organizations (Frazier et al., 2017). According to social exchange theory (Blau, 2017), employees will reciprocally deliver sustainable performance along with their emotional attachment and identification to their organizations (Chen et al., 2014). Similarly, Psychological safety enables employees to learn new skills and ways to improve their performance thus ultimately enhancing the sustainable performance.

As, organizations are facing severe pressure towards sustainably and meeting demands of stakeholders (de Sousa Jabbour, Vazquez-Brust, Ribeiro and Jabbour, 2019; Iqbal et al., 2018a, 2018b). In such situations, organizations need employees who could take initiative and foster innovation (Spreitzer, 1995). The JD-R model (Demerouti et al., 2001) elaborates how job demands and job resources interact with each other to affect outcomes (Kirrane, Kilroy, & O'Connor, 2019). Schaufeli and Taris (2014) have recommended risk-taking and performance as job-demands but autonomy and self-efficacy as job resources. Ugwu, Onyishi, and Rodríguez-Sánchez (2014) have identified psychological empowerment as a resource. Psychological empowerment keeps employees on track to perform their jobs (Seibert et al., 2011). This study assumes psychological safety as job demand which is likely to influence sustainable performance whereas psychological empowerment as a resource. With respect to the job demands-resources (JD-R) model (Demerouti et al., 2001; Seibert et al., 2011), perceived psychological empowerment work as job resource for employees which stimulate the effect of psychological safety on the sustainable performance. Following this study, we extend the theoretical landscape of JD-R theory by exploring how psychological empowerment serves as a resource for dealing workplace demands such as psychological safety.

2.2. Sustainable performance

In current business environment, the existence of a shift in measuring the performance of firms can be observed. The performance of firms was typically assessed using economic performance in relation to their assets, liabilities, and historical market position. Nevertheless, a more positive change can be seen wherein efforts are undertaken to balance the firms' high economic profitability with their ecological and social performance (Chin et al., 2015), which further lead to high sustainable performance (de Sousa Jabbour, Vazquez-Brust, Ribeiro and Jabbour, 2019).

Sustainable performance refers to the performance of firms in relation to society, economy, and environment in the era of sustainable development (Argandoña and von Weltzien Hoivik, 2009). Contrastingly, firms' sustainable performance has been defined by Schaltegger and Wagner (2006) as the performance in all aspects and for all stakeholders. Three dimensions of sustainable performance namely economic sustainability, environmental sustainability, and social sustainability (Brent and Labuschagne, 2004) are critical to propel business (Akanmu et al., 2020). Economic sustainable performance is concerned about return on assets, organizational cost reduction and profit in the context for income improvement, and market share promotion (Green et al., 2012). Economic performance is measured in terms of profit, tax, income along with employee's financial welfare (Zhu et al., 2012). Social sustainability performance evaluates the organizations regarding their social commitment, participation, training and development, and healthy work environment. Social responsibility takes into account public welfare support, working conditions, employee benefits, talent development, social response, and employee's relations (Amui et al., 2017). Lastly, environmental sustainability performance is concerned about the reduction of harmful materials, hazardous consumption, usage of resources, and efficient energy (Akanmu et al., 2020). Environmental sustainability is achieved by reducing emission of pollution, resource usage, generation for waste, as a results of undertaken efforts (Iqbal et al., 2018a, 2018b). Yet, sustainable performance is not confined by organizational boundaries so that the concern of both upstream and downstream stakeholders in the business cycle is also considered (Charter and Tischner, 2017). Likewise, the sustainable performance of firms has been evaluated with respect to resource-saving, emission of carbon dioxide, ecological initiatives, workplace health and safety, value creation for both society and community, stakeholder's management, as well as economic impact besides financial figures (de Sousa Jabbour et al., 2019).

There is an abundance of research in the domain of sustainable performance with increasing attention being paid to diverse stakeholders at the organizational level (Burawat, 2019; de Sousa Jabbour et al., 2019; Iqbal, 2018). Organizations currently aspire to reap long-term benefits through the implementation of sustainable activities and practices as the core business strategy (Chabowski et al., 2011). Green practices such as green purchasing, green manufacturing, green information system, and eco-design influences positively firm's performance in the long run (Khan et al., 2017). Similarly, green practices were found out mitigating the negative impact of logistic operations on the environmental sustainability (Khan et al., 2018). Furthermore, the organizations whose major concern was about the high economic performance are equally admired because of their separate voluntary sustainability goals (Iqbal and Hassan, 2018).

2.3. Psychological safety

The concept of psychological safety was introduced by Schein and Bennis (1965) in their work on organizational change. Psychological safety is defined to the extent where employees feel secure and confident about their abilities to cope with change (Schein and Bennis, 1965). The notion of psychological safety has been explored more extensively in the work setting (Newman et al., 2017a,b). Conversely, Kahn (1990) has described psychological safety as the perception and capacity of employees to employ themselves without any fear of negative consequences. Employees would feel psychologically safe when trust and supportive relationship are present in their work environment (Kahn, 1990). In contrast to Kahn (1990), psychological safety has been defined by Amy; Edmondson (1999) as the team-level climate that provides an interpersonal risk-free environment. In psychologically safe

environment, employees do not reject each other for being themselves; employees have positive intentions and mutual respect for each other's competency.

Psychological safety at individual level has been measured within a dyadic relationship, teams, or organizations (Newman et al., 2017a,b). The role of psychological safety has been researched on individual level by adapting the measurement items from Amy; Edmondson (1999) in which the referent "team" was substituted with "organization" (Carmeli et al., 2010; Chen et al., 2014). In the context of team, the perception of psychological safety among team members was aggregated according to their high intra-class correlation coefficient (ICCs) (Newman et al., 2017). Similarly, the items of Edmondson (1999) have been employed by Carmeli et al. (2010) in measuring the psychological safety at the organizational level where the word "team" was replaced with "organization". The score was subsequently aggregated to the organizational level based on the ICCs. Chen and Tjosvold (2012) argued that leadership and team characteristics have a significant influence on employee's perception of psychological safety. In contrast, a high level of compatibility at the organizational level is quite unlikely because employees experience diverse experience and norms in large organizations (Newman et al., 2017a,b). Following the idea proposed by Newman et al. (2017), this study aims to investigate role of psychological safety in small firms.

Psychological safety has been analyzed at different levels and one of them concerns the organizational learning. Earlier literature has focused on the relationship between psychological safety, learning and performance outcomes (Newman et al., 2017). Research has suggested the association of psychological safety with elements of innovation, creativity, communication, voice behaviour, knowledge sharing, and employees' attitude. The extant literature has been developed using multiple principles, including theories of social exchange, social learning, social identification, and social information processing (Carmeli et al., 2010; Chen et al., 2014; Liu et al., 2014; Schaubroeck et al., 2011). It has been discovered that psychological safety is significantly correlated with employees' engagement at individual level (Newman et al., 2017). Furthermore, Hansen et al. (2016) have deduced a significant relationship between psychological safety and other outcomes, such as task conflict and poor relationship. In addition to enhancing the frontline system (Carmeli et al., 2010), psychological safety also improves the employee's feedback-seeking and feedback-giving behaviour. Carmeli et al. (2010) has also argued that psychological safety enables employees to adapt and execute new practices that ultimately affects the improvement projects. Similarly, Amy Edmondson and Lei (2014) have concluded that psychological safety is helpful in the implementation of new technologies.

2.4. Sustainable leadership

The concept of sustainable leadership was first introduced according to the notion that organizations have a contribution to natural world. This idea highlights on the creation of sustainable value where the revenue of organizations is supported by physical, social, ethical and economic reasons (Shrivastava, 1995). The roots of sustainable leadership are found in Rhineland management (Avery and Bergsteiner, 2011), that emphasizes the responsibilities of the organizations to the society. Rhineland leadership, a predecessor to sustainable leadership foster a long-term perspective, corporate social responsibility, and ethical behaviour (Hallinger and Suriyankietkaew, 2018). Sustainable leaders try to meet the needs of present generations without weakening the ability of future generations to progress (Hargreaves and Fink, 2012). According to Ferdig (2007), sustainable leaders act responsibly by comprehending and acting on sustainable issues irrespective of their formal leadership positions. Avery (2005) emphasized that sustainable leaders take a long-term perspective in making decisions, promote systemic innovation in order to develop a skilled, engaged, and loyal workforce, deliver quality products and services, increase value-addition. Sustainable leadership is characterized by foundation practices, key performance drivers, and higher-level practices (Avery and Bergsteiner, 2011). Foundation practices are concerned with technical, human, and operational skills; key performance drivers focus on the innovation and engagement among employees; higher-level practices encompass organizational culture and team development along with cognitive thinking. The trade-off between three performances, namely ecological, social, and economic performances under sustainable development requires the integration of all of these skills from organizational leadership. In addition, swift adaptation, up-to-date technologies, and value creation at both individual and organizational levels are crucial for sustainable development (Van Dun, Hicks and Wilderom, 2017).

The concept of sustainable leadership has been addressed in business research where academic discussion brings a vital impact on business organizations (Iqbal, 2018). Sustainable leadership enables organizations to learn better, faster, and become more flexible and adaptable than their competitors (Hargreaves and Fink, 2012). In the context of sustainable leadership, organizations attempt to create value that is beneficial for both society and all stakeholders (Burawat, 2019). The notions of sustainability and sustainable leadership are always relevant to the triple bottom line (TBL) perspective (Amui et al., 2017). Elkington and Rowlands (1999) who have coined the term TBL; comprising of three P's, namely people, profit, and planet. This perspective focuses on balancing of people, planet and profit to ensure a sustainable future.

Sustainable development provides competitive edge to organizations which steer towards continuous improvement (Slankis, 2006). According to Slankis (2006), sustainable leadership comprises of ten pillars such as change orientation, social and environmental consciousness, broad systems thinking, business savvy, credibility, adaptability, patience, translational skills, persuasiveness, energy, passion, mentoring and development. Long-term goals will be emphasized by leadership compared to short-term objectives under sustainable development. The sustainability of individuals contributes to the development of employees along with that of organizations.

2.5. Psychological empowerment

Empowerment is described as the creation of power through working with others (interactive empowerment) as well capability to influence one's ideologies (self-empowerment) (Vogt, 1990). From the cognitive perspective, Menon (1995) has defined the perception of employees in terms of their competence, control, and internalization. According to Beach (1996), empowerment is intrinsic to employees and free of policy and management practices. Meanwhile (Conger and Kanungo, 1988), have contended that psychological empowerment is a process that ignites feelings of self-efficacy among employees where formal organizational practices and informal techniques of providing effective information remove all factors that reinforce powerlessness. Thomas and Velthouse (1990) have extended this idea by concluding that a comprehensive set of tasks, namely meaningfulness, choice, competence, and impact can motivate employees intrinsically. Based on the work of Conger and Kanungo (1988) and Thomas and Velthouse (1990), psychological empowerment has been defined by (Spreitzer, 1995) as the psychological process or state that is manifested in four cognitions, i.e. competence, impact, self-determination, and meaning. Competence refers to the self-

efficacy and belief to perform a certain task. Meaning creates a sense of feeling about the importance of work. Self-determination concerns about freedom in order to initiate and execute the activity or job. The impact is described as the degree to which a job or behaviour makes a difference in the work environment. All of these dimensions construct the whole notion of psychological empowerment despite being distinct (Spreitzer (1995).

Empowered employees participate easily in exchanging ideas and opinions at large (Newman et al., 2017). Based on the framework that has been developed by Wu and Lee (2017) using the integration of social exchange theory and positive perspectives of organizational behaviour, empowered employees are characterized with high knowledge sharing and learning. Empowerment also facilitates employees with a course of action where they are fully responsible and accountable for the results. Attitude and behaviour directly affect each other and self-belief will create a variation in the attitude and behaviour among employees. Furthermore, responsibilities, resources, and work outcomes are properly distributed among empowered employees (Kirrane et al., 2019). Due to the limited research in the domain of psychological empowerment (Solansky, 2014), this study aims to provide empirical evidence about its moderating and moderating-mediation role.

2.6. Hypotheses development

2.6.1. Sustainable leadership and psychological safety

Psychological safety fundamentally concerns a type of work environment where employees feel safe so they can express feelings and share ideas openly (Ahmad et al., 2018). Psychological safety among employees is substantially influenced by perceptions about the behaviors of leadership (Newman et al., 2017). According to Slankis (2006), the sustainable leaders possess change orientation, broad systems thinking, high credibility, patience, translational skills, energy and passion, foster persuasiveness, mentoring and development. Sustainable leaders behave ethically which ignites voice behaviour (Chen et al., 2019), signifying the presence of psychological safety. Employees also have plenty of opportunities to express themselves freely since sustainable leaders are open to new ideas (Ahmad et al., 2018).

It has also been found that the element of social responsibility contained within sustainable leadership has a significant impact on psychological safety (Ahmad et al., 2018; Chaudhary, 2019). Employees will also feel safe and confident when the practices of sustainable leadership are viewed as intrinsic in nature (Rupp et al., 2013), thereby delivering a high level of psychological safety. Employees feel safe based on their perception regarding the way in which their leaders behave socially and cater to the needs of all stakeholders (Farooq, 2016). Responsible leaders influence the sense-making of employees, which further result in positive outcomes (Hansen et al., 2016). Consequently, this discussion leads to the development of the proposition below:

H1. Sustainable leadership significantly influences the employee's perception of psychological safety.

2.6.2. Psychological safety and sustainable performance

Psychological safety substantially influences the performance at individual and team levels (Schaubroeck et al., 2011; Singh et al., 2013). Firm performance at the organizational level is significantly improved by the collective perception of psychological safety (Frazier et al., 2017). It should be highlighted that the performance is measured in terms of the return on assets and goal achievement. Empirical evidence has also suggested an association between perceived psychological safety and creativity among employees (Carmeli et al., 2010). Additionally, perceived psychological safety

considerably influences creativity and risk-taking behaviour at the team level (Palanski and Vogelgesang, 2011). Extant literature has discovered a significant positive relationship between psychological safety and innovative performance (Gu et al., 2013) as well as knowledge creation (Edmondson and Lei, 2014). Furthermore, the social exchange theory postulates that performance outcome may be affected by psychological safety (Schaubroeck et al., 2011; Singh et al., 2013). Research has proven that psychological meaningfulness and availability are vital to promoting work engagement (Asiwe et al., 2017). Contrastingly, the lack of psychological safety creates a substantial loss of both economic and social aspects to the employees and ultimately to the organizations (Haftador and Koohsari, 2015). Therefore, this discussion leads to the development of the proposition as follows:

H2. Psychological safety significantly influences sustainable performance.

2.6.3. The mediating role of psychological safety

Employees who work in a psychologically safe workplace share their information and ideas, talk openly about relevant resources and issues, request for necessary resources, as well as raise issues and problems linked to their job scope (Edmondson and Lei, 2014). It has been found that entrepreneurial leadership encourages employees to engage in opportunity-focused activities, share ideas, experiment, and innovate in the psychological safe workplace (De Jong, Parker, Wennekers and Wu, 2015), further leading to optimum performance (Miao et al., 2019). Based on this justification, it is proposed that sustainable leadership will affect sustainable performance by providing psychological safety in organizations:

H3. Psychological safety mediates the relationship between sustainable leadership and sustainable performance.

2.6.4. The moderating role of psychological empowerment

Sustainability is critical for organizations where a trade-off between ecological, social, and economic performance is made (Pislaru et al., 2019). Chen and Chen (2019) have argued that compliance significantly affects ecological and environmental performance whereas, commitment has a strong impact on the environmental and social performance. It has been concluded that the integration of compliance, commitment, and moral values among employees enable organizations to deliver sustainable performance.

Likewise, it has been discovered that psychological empowerment has a strong impact on employees' commitment. Employees express their values through competence, self-determination, and impact, therefore, affecting their commitment level. Psychological empowerment also alters the commitment level (Farooq, 2016), where the loss of psychological empowerment is vital that it is irrevocable to substitute with new induction.

Job performance is significantly influenced by meaning and self-determination based on the job characteristics theory (Hackman and Oldham, 1980). Employees increase their efforts to accomplish their tasks on a persistent basis in the presence of psychological safety.

In a psychologically safe environment, employees would predict problems and act proactively and independently (Ugwu et al., 2014) where their high level of commitment lead to optimum sustainable performance. Based on the discussion above, the subsequent hypothesis is proposed as follows:

H4a. Psychological empowerment moderates the relationship between psychological safety and sustainable performance such that high psychological empowerment will have strong psychological safety-sustainable performance relationship.

2.6.5. The moderating-mediation role of psychological empowerment

Empirical pieces of evidence have suggested the positive impact of psychological empowerment on the performance. In addition to feeling a high sense of self-efficacy, psychologically empowered employees also have a substantial responsibility and authority over their job (Jha, 2018). In an environment characterized with psychological empowerment, employees are facilitated with specific responsibilities, resources, and processes for certain work output (Kirrane et al., 2019). According to Avery and Bergsteiner (2011), sustainable leaders will take into consideration the macro view of the organization. This effort is done by prioritizing the aspects of mental and physical health of employees, designing a conducive work environment in order to create multiple intelligences, and emphasizing on the socially accepted activities. Accordingly, employees who feel psychologically safe will participate in higher knowledge sharing and take risks in order to make high quality and sustainable decisions. Similarly, Jha (2018) has suggested that empowered employees are more likely to arrive at effective decisions. In a psychologically safe environment, employees possess a learning-oriented attitude where they take part in the critical discussions (Carmeli et al., 2010). Hence, it is proposed that an effective decision-making process substantially influences sustainable performance.

H4b. Psychological empowerment moderates the indirect relationship between sustainable leadership and sustainable performance through psychological safety such that this relationship is strong in the presence of high psychological empowerment.

3. Research methodology

SMEs are commonly defined with respect to their economic and business conditions. In Malaysia, 98.5% of approximately 920,624 enterprises are SMEs which contribute 65.3% of employment rate and 36.6% of GDP (OECD/ERIA, 2018). In Malaysia, 89.2%, 5.3%, 4.3%, 1.1%, and 0.1% of all SMEs operate in the service, manufacturing, construction, agricultural, and mining and quarrying sectors respectively (OECD/ERIA, 2018). In Brunei Darussalam, 98.37% of 9302 established businesses are categorized as SMEs. Meanwhile, there are approximately 99% SMEs in Indonesia which contribute a rate of 61% of GDP and 87.8% of employment (BPS Statistics, 2015).

This study has employed cluster sampling approach. SMEs across Malaysia, Indonesia, and Brunei Darussalam were divided into different clusters based on their geographical location where SMEs in Kuala Lumpur, Jakarta, and Bandar Seri Begawan were chosen for data collection using simple random sampling. Based on G*Power application in the presence of 15 predictors, power 0.80, and effect size 0.15 (Faul et al., 2009), minimum respondents required in this study are 139. Keeping in mind the average response rate of 35.5% with standard deviation 18.8 (Baruch and Holtom, 2008), authors along with local faculty members made contact to managers of 600 SMEs in these three cities where 405 complete and valid responses were collected. Therefore, this sample size of 405 is more than enough to employ PLS-SEM. The response rate in this study is 67.5%.

The individual-level analysis was employed in this study in addition to SPSS for frequency and descriptive analysis. The present study comprised of male (67.9%) and female (32.1%) respondents. Most respondents (56.8%) can be considered as young (21−28 Years) with an experience of one to five years. The proportions of respondents from Malaysia, Indonesia, and Brunei Darussalam were 43.5%, 39.5% and 17.0% respectively. Further details of the respondents of this study are illustrated in Table 1 below.

In this study, survey form was divided into six sections, i.e.

sustainable leadership, psychological safety, psychological empowerment, sustainable performance, and demographic data of respondents. The five-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree) was used for each question. This study has employed 15-items sustainable leadership questionnaire (SLQ) developed by McCann and Holt (2010) based on the Slankis (2006) ten pillars of sustainable leadership. Al-Zawahreh et al. (2019) have also used the same questionnaire in their study with reliability statistics of 0.93. This study has considered sustainable performance in terms of financial, environmental, and social performances. The 15-items measurement scale of sustainable performance was adopted from the study of Khan and Quaddus (2015). Iqbal, Ahmad et al. (2018) have used same measurement scale in their study where reliability value was 0.83. Based on the study of Edmondson (1999), Carmeli et al. (2010) have adapted five items to measure psychological safety. The same five items have been employed to measure the psychological items in this study. Furthermore, psychological empowerment was measured using the 12-item scale adopted from the study of Spreitzer (1995). This measurement scale has been also used by Newman et al. (2017) with 0.86 as reliability value. Anderson and Gerbing (1988) has recommended that CFA is performed to check the model fit in research studies. The model fit indices of four-factor model in the present study is better $\left(\frac{CMIN}{DF} = 3.477, \ GFI = 0.596, \ the \ CFI = 0.918, \ and \ RMSEA - = 0.043 \right)$ ANOVA test of differences has been used to identify any difference among the respondents from the three different countries, i.e. Malaysia, Indonesia, and Brunei Darussalam. Absence of any statistically significant difference indicates that this study is free from response bias issue.

Before data analysis was conducted, data screening was performed to investigate the missing values, outliers, normality, test of differences, and common method variance (CMV). The mandatory requirement for all survey items to be answered has ensured the absence of missing values in this study. The Z-Score was calculated for each respondent in SPSS version 23. It can be concluded that there was no outlier in this study as the values of Z-Score for all respondents were less than 3.29 (Tabachnick et al., 2007). Additionally, skewness and kurtosis criteria were used to check the normality of data (Hair et al., 2017). Normality of data occurs when skewness and kurtosis vary from −3 to +3 (DeCarlo, 1997). Evidence from this study suggested that the skewness values varied from −1.041 to 0.360, while the kurtosis values varied from −0.627 to 1.257 (See Table 2). Hence, normality of data was present in this research.

According to Sekaran and Bougie (2016), mean values of equal or less than 2.99 are low, 3 to 3.99 are moderate, and mean values greater than 4 are deemed high in the case of five-point Likert scale. Based on Table 2, the mean value of psychological safety is 3.754, indicating that the level of psychological safety in the organizations is considered as moderate by the employees. The employees possess a fair agreement with psychological empowerment (mean = 4.116) and sustainable leadership (mean = 4.239), suggesting a high perception of employees about the presence of these elements.

A variance-based structural equation modelling (PLS-SEM) provides more reliable construct scores to use in further analysis as compared to the covariance-based structural equation modelling (PLS-CB) (Henseler et al., 2015). Furthermore, PLS-SEM is considered perfectly fit in case of explanatory research and complex model (Henseler et al., 2018; Ringle et al., 2018). Provided, this research is explanatory in nature and model is complex (comprises of direct, mediating, and moderating effect) so PLS-SEM analysis has been applied herein. The PLS-SEM analysis comprises of measurement model and structural model assessment.

Table 1
Respondent's profile.

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Female	275	67.9	67.9	67.9
	Male	130	32.1	32.1	100.0
Age	21–28	230	56.8	56.8	56.8
	29–36	135	33.3	33.3	90.1
	37–44	17	4.2	4.2	94.3
	45–52	23	5.7	5.7	100.0
Experience	<1	75	18.5	18.5	18.5
	1–5	225	55.6	55.6	74.1
	6–10	60	14.8	14.8	88.9
	11–15	5	1.2	1.2	90.1
	16–20	17	4.2	4.2	94.3
	21–25	18	4.4	4.4	98.8
	>25	5	1.2	1.2	100.0
Country	Malaysia	176	43.5	43.5	43.5
	Brunei Darussalam	69	17.0	17.0	60.5
	Indonesia	160	39.5	39.5	100.0

Table 2
Descriptive statistics and fornell-larcker criterion.

	N	Mean	S.D.	Skewness		Kurtosis		1	2	3	4
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error				
Sustainable performance	405	3.602	.400	-.084	.121	.065	.242	0.729			
Psychological Empowerment	405	4.116	.314	-.684	.121	.636	.242	0.294	0.763		
Psychological Safety	405	3.754	.622	.360	.121	-.627	.242	0.127	0.152	0.726	
Sustainable Leadership	405	4.239	.510	−1.041	.121	1.257	.242	0.260	0.117	0.218	0.772
Valid N (listwise)	405										

The measurement model which was analyzed prior to structural analysis, comprised of internal consistency and construct validity. Construct validity consists of convergent validity and discriminant validity (Sekaran and Bougie, 2016). According to Hair et al. (2017), there is convergent validity when the value of AVE is equal to or greater than 0.50 and values of factor loadings are equal to or higher than 0.708 or 0.70. The values of factors loadings are considered acceptable in the range of 0.50–0.70 (Chin, 1998). Hair et al. (2017) have proposed that the items with loading values of less than 0.40 are deleted. Hence, one item of sustainable leadership was removed from the present model because the values of AVE were lower than the standard criterion. Conversely, Hair et al. (2017) have recommended that the items with values ranging between 0.40 and 0.70 are not deleted if the values of CR or AVE or both are not affected. Table 3 demonstrates that the values of all measurement items in this study lie in the range of standard criterion. The items with factor loading below 0.70 have not been deleted as AVE and CR for all constructs in this study have already passed the acceptable values. Furthermore, the values of all constructs in this study are higher than 0.70 (See Table 3), suggesting sufficient convergent validity. The discriminant validity in this study was evaluated using Fornell-Larcker criterion. This criterion states that the square root of the AVEs of all constructs in the model should be higher than their correlations with respective constructs. As presented in Table- 2, it is evident that this study possesses discriminant validity.

Table 4 below clearly shows that there is a significant positive relationship between sustainable leadership and psychological safety among employees ($\beta = 0.258$; $P < 0.05$), supporting the hypothesis H1. This result is similar to the findings of Burawat (2019) and Wolff (2020) where they have recommended supportive leadership and ideas sharing culture as strong predictors of psychologically safe environment. It has been recorded that psychological safety has a significant positive influence on the sustainable performance ($\beta = 0.157$; $P < 0.05$). There is also a

signifincat mediating impact of psychological safety on the association of sustainable leadership and sustainable performance ($\beta = 0.40$; $P < 0.05$). Therefore, both hypotheses H2 and H3 in this study are accepted. In support of empirical evidence of H2, Newman et al. (2017) has recommended that psychological safety ignites social exchange relationship between employees and organizations so performance gets better. As, open sharing of ideas foster feedback seeking behaviour which delivers optimum performance (Edmondson and Lei, 2014; Jha, 2018), the findings of H3 is consistent in relations to the past studies.

Based on the hypothesis H4a, it was anticipated that psychological empowerment would moderate the relationship between psychological safety and sustainable performance. Additionally, supporting the hypothesis of moderation, the strength of indirect value (mediation) is likely to rely on the value of moderation (i.e. psychological empowerment) which is known as conditional indirect effects or moderated mediation (Hayes and Rockwood, 2019). Based on Table 4 the hypothesis H4a is supported as the coefficient of interaction between psychological safety and psychological empowerment has a significant effect on the sustainable performance ($\beta = 0.403$; $P < 0.05$). The interaction term of psychological empowerment and sustainable leadership also significantly influences the sustainable performance ($\beta = 0.483$; $P < 0.05$) as presented in Table 4 below. Moreover, it was discovered that the higher value of psychological empowerment would result in stronger relationship between psychological safety and sustainable performance. The moderating impact of psychological empowerment on the relationship between psychological safety and sustainable performance is clearly depicted in Graph I. Previous studies have confirmed the presence of moderators on the association of psychologically safety and performance (D'Innocenzo et al., 2016; Edmondson and Lei, 2014), the present empirical evidences of psychological empowerment as moderator is consistent to this study from the perspective of job-demands resource model.

There is moderated mediation of psychological empowerment

Table 3
Convergent validity.

Latent Variable	Items	Standardized factor Loadings	Average Variance Extracted	Composite Reliability
Sustainable leadership	SL01	0.532	0.596	0.929
	SL02	0.739		
	SL03	0.813		
	SL04	0.777		
	SL05	0.747		
	SL06	0.901		
	SL07	0.816		
	SL08	0.729		
	SL09	0.833		
Psychological Safety	PS01	0.830	0.527	0.844
	PS02	0.682		
	PS03	0.787		
	PS04	0.768		
	PS05	0.519		
Psychological Empowerment	PE01	0.621	0.582	0.787
	PE02	0.771		
	PE03	0.812		
	PE04	0.780		
	PE05	0.815		
	PE06	0.791		
	PE07	0.588		
	PE08	0.764		
	PE09	0.765		
	PE010	0.829		
	PE11	0.871		
	PE12	0.656		
Sustainable Performance	Economic Performance	0.408	0.531	0.758
	Environmental Performance	0.857		
	Social Performance	0.832		
Economic Performance	EP01	0.762	0.536	0.848
	EP02	0.790		
	EP03	0.764		
	EP04	0.689		
	EP05	0.671		
Environmental Performance	EnP01	0.761	0.517	0.820
	EnP02	0.696		
	EnP03	0.866		
	EnP04	0.487		
	EnP05	0.793		
Social Performance	SoP01	0.745	0.531	0.849
	SoP02	0.800		
	SoP03	0.770		
	SoP04	0.641		
	SoP05	0.681		

Table 4
Hypotheses testing.

Hypotheses	Coefficient	S.D.	T-value	P-value	LLCI	ULCI
Sustainable leadership > Psychological Safety	0.258	0.011	2.628	0.03	0.568	0.604
Psychological Safety > Sustainable Performance	0.157	0.262	0.602	0.048	0.481	0.561
Sustainable Leadership > Psychological Safety > Sustainable Performance	0.040	0.093	0.363	0.017	0.044	0.2
Psychological Safety* Psychological Empowerment > Sustainable Performance	0.078	0.020	3.755	0.002	0.037	0.118
Sustainable Leadership* Psychological Empowerment > Sustainable Performance	0.083	0.030	3.461	0.014	0.159	0.192
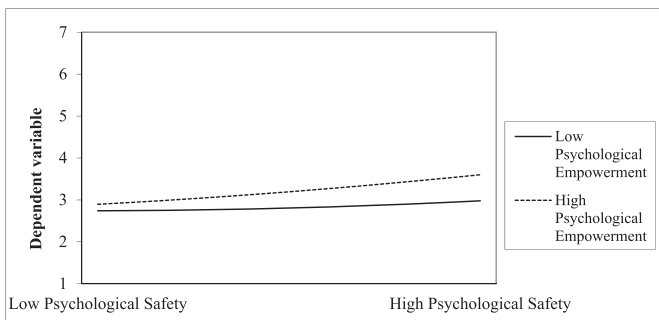
Graph 1. Interaction plot of psychological empowerment and psychological safety.

provided there is indirect effect of sustainable leadership on sustainable performance through psychological safety with respect to different values of psychological empowerment (H4b). It should be noted that the magnitude of the indirect effect of sustainable leadership on sustainable performance via psychological safety will differ across the low, medium, and high levels of psychological empowerment that are experienced by employees. The present study has employed Hayes (2013) PROCESS macro of SPSS to assess the impact of moderated-mediation for sustainable leadership-sustainable performance relationship. The psychological empowerment was defined as low and high based on one standard deviation above and below its mean score. Table 5 exhibits that the values of estimates, standard errors, and bootstrap confidence

intervals for the conditional indirect effects of psychological safety respectively lie on the low, medium, and high level of psychological empowerment. As indicated in Table 5, the conditional indirect effect of psychological safety is significantly stronger at the higher level of psychological empowerment (0.034) and significant with relatively lesser strength at the lower level of psychological empowerment (0.014). Therefore, the hypothesis H4b is supported. The empirical evidences of H4b are consistent in relations to the findings of Hill and Bartol (2016). As highest the psychological empowerment, higher employees feel to be in power (Hill and Bartol, 2016) so psychological safe employees deliver optimum performance in the presence of sustainable leaders.

4. Discussion

To date, the present research is the first empirical work that investigates the relationship between sustainable leadership, psychological safety, and sustainable performance. It is significant to note that all five hypotheses have been validated by results. The present findings contribute to sustainable literature by employing an empirical approach, one that also leads to policy and managerial implications and provides some future research directions. The results are elaborated as follows.

First hypothesis H1 is significant, which proves the positive substantial impact of sustainable leadership on perceived psychological safety. This empirical evidence is the same as in prior studies, which also claimed the same positive linkage (Burawat, 2019; Farooq, 2016; Wolff, 2020). Sustainable leaders possess high level of communication and conversation skills where they learn from their mistakes in order to develop an ingenuity for the future growth of their organizations (Farooq, 2016). This empirical evidence is consistent with the work of Burawat (2019) which has found that psychologically safe working environment is created by leaders who support their employees and promote the culture of sharing ideas. Furthermore, sustainable leadership promote creative problem-solving skills and deep learning (Wolff, 2020). This empirical evidence presents the foundation for future studies and a bridge associating prior research. This study has employed social learning theory to link sustainable leadership with psychological safety. Hypothesis H1 concludes that sustainable leadership contributes to the perceived psychological safety. With reference to H1, social learning theory encourages employees to emulate and follow their leaders.

Second, this study has confirmed the positive significant impact of psychological safety on the sustainable performance. This empirical evidence is the same as in prior literature, which also support positive association between psychological safety and sustainable performance (Newman et al., 2017; Schaubroeck et al., 2011; Singh et al., 2013). Psychological safety enhances performance outcomes provided management foster social exchange between the employee and organizations (Newman et al., 2017). There is strong and direct impact of psychological safety on the performance at the individual (Singh et al., 2013) and team levels (Schaubroeck et al., 2011). Additionally, employee's perception of psychological safety strongly influences firm performance, as

measured by goal achievement and return on assets (Frazier et al., 2017). The present study has employed social exchange theory to link the psychological safety with sustainable performance. Proposed relationship is confirmed as there is need to emphasize on the psychologically safe environment in order to foster sustainable development.

Third hypotheses H3 is significant where this study has discovered the mediating impact of psychological safety on the relationship between sustainable leadership and sustainable performance. It was found that employees who possess a high perception of psychological safety tend to ask more questions and support the favorable practices that lead to sustainable performance. Based on the social learning theory, employees are encouraged by sustainable leaders to deliver their services sustainably in the psychologically safe environment. It has been argued by Amy Edmondson and Lei (2014) that psychologically safe environment promotes feedback-seeking behaviour which ultimately enhances self-awareness and self-improvement, further resulting in optimal performance. Similarly, Jha (2018) has deduced that open sharing of ideas and information among psychologically safe employees lead to effective performance. Furthermore, the empirical findings reveal that support in the form of sustainable leadership in psychological safe workplace would ensure optimum performance. This finding is similar to the enhanced support-learning philosophy (Hajro et al., 2017).

The hypothesis H4a and H4b, which proposes that psychological empowerment among employees moderates direct impact of psychological safety and indirect impact of sustainable leadership on sustainable performance, is supported by the research outcome. Based on the job-demands resources (JD-R) model, this study has investigated the moderating impact of psychological empowerment on the relationship of psychological safety and sustainable performance. The present empirical evidence of H4 are the same as in the previous studies which support the moderators between psychological safety and performance (D'Innocenzo et al., 2016; Edmondson and Lei, 2014). While the existing literature supports the significant influence of psychological safety on the performance in the presence of numerous factors (D'Innocenzo et al., 2016; Edmondson and Lei, 2014), this study has consequently enhanced the understanding of this domain in the context of JD-R model.

Finally, this study supports the hypothesis that the psychological empowerment moderates the indirect effects of sustainable leadership on the sustainable performance. This empirical evidence enforces the conclusion of previous studies (Hill and Bartol, 2016; Jha, 2018). Psychological empowerment instigates the feelings of being in powerful and control among employees. But, the mere presence of structural empowerment is not enough to deliver effective performance (Jha, 2018). Therefore, in the presence of sustainable leaders, psychologically safe employees will deliver better performance if they feel that extending support from leaders is vital for the organization (Hill and Bartol, 2016; Jha, 2018). The empirical evidences of the present study comprehend the influence of sustainable leadership (McCann and Holt, 2010) on the sustainable performance, the role of psychological safety (Edmondson, 1999) and psychological empowerment (Spreitzer, 1995). The

Table 5
Results of conditional indirect effect.

Moderator Value	Conditional Indirect Effect	Bootstrap SE	Bootstrap LLCI	Bootstrap ULCI
Outcome Variable: Sustainable performance; Independent variable: sustainable leadership				
47.000	0.014	0.016	0.012	0.047
49.000	0.031	0.017	0.017	0.070
53.000	0.034	0.020	0.020	0.080

Notes: LLCI = Lower level confidence interval; ULCI= Upper level confidence interval; Level of Confidence = 95%; Number of bootstrap samples = 5000; SE= Standard error.

presence of psychological empowerment facilitated the sustainable leadership-psychological safety and sustainable performance relationship. Nevertheless, many extent studies support the sustainable leadership and sustainable performance relationship, the outcomes may not be as simple as it looks, but undertakes several underlying phenomena (Avery and Bergsteiner, 2011; El-Chaarani, 2014; Suriyankietkaew and Avery, 2016).

5. Conclusion

The objective of this research was to examine how sustainable leadership contributes to the sustainable performance through psychological safety, as well as investigating the moderating and moderation-mediating impact of psychological empowerment using cross-sectional survey data from the selected ASEAN countries. The empirical evidences revealed that sustainable leadership significantly influences psychological safety whereas psychological safety has significant impact on the sustainable performance. There is empirical evidence about the mediating impact of psychological safety on the relationship between sustainable leadership and sustainable performance. Furthermore, the present study confirms the moderating effect of psychological empowerment on the psychological safety and sustainable performance along with its moderation-mediating impact on the sustainable leadership and sustainable performance.

The present research contributes theoretically and practically. Theoretically, this study has contributed to the domain of social learning theory by elaborating the relationship between sustainable leadership and psychological safety. This study has also enhanced the literature in the arena of social exchange theory by confirming the association between psychological safety and sustainable performance. Furthermore, the job-demands-resource model was utilized to investigate the moderating impact of psychological empowerment on the relationship between psychological safety and sustainable performance. The available empirical evidences confirm the strong explanatory power of the social learning theory, social exchange theory and the job-demands-resource model. Practically, this paper offers policy recommendations for policy makers based on the results of empirical evidences. Based on the present empirical evidences, management of organizations need to develop strategies to promote sustainable leadership in order to drive the psychologically safe environment which results into optimum sustainable performance. At large, this study is a preliminary exploration of the linkages of psychological variables between the relationship of sustainable leadership and sustainable performance. Along with this, management of firms need to facilitate employees with psychological empowerment.

5.1. Practical implications

Based on the research discussion, several practical implications should be considered by business organizations in order to promote sustainable performance among employees. First, this study has confirmed the need to foster sustainable leadership in employment settings. Specific training and development programs could assist managers to improve the skills that would enable them to better exhibit sustainable leadership behaviors. Second, as sustainable leaders create a conducive environment by encouraging employees to share their ideas, information, and take risks, the focus should be given to their top management as the crucial element to fostering sustainable development. Top management of organizations should be responsible for creating compatibility and harmony with employees in order to facilitate them in a psychologically safe relationship. Top management must focus on low performing employees compared to their capability, competence,

and skills. Third, organizational leadership can offer training related to employee's job descriptions, roles, and responsibilities to enhance psychological safety (Zhang et al., 2017). All employees should also be assessed for their perception about a psychologically safe environment for the purpose of appointment in challenging tasks for future projects.

Fourth, the level of psychological empowerment among employees must also be understood in order to create a psychologically safe environment. Fifth, both implicit and explicit needs of all employees who have low psychological safety, must be addressed so that the relationship between psychological safety and sustainable performance may be reinforced. Furthermore, sustainable leaders should inspire employees to religiously practice sustainability. As sustainable leaders are aware of the environmental challenges and employee's needs, there is a need to highlight the integration of these courses within the psychologically safe workplace. Hence, the sustainable leadership's endeavor to execute such transformation among employees will enhance the progress at the individual level, save time, and boost the confidence level of individual employees. When feeling empowered, psychologically safe employees recognize their responsibility toward reaching the common goal through a conducive workplace which leads to effective sustainable performance.

5.2. Limitations and future research directions

This study has numerous limitations. First, this study is cross-sectional in design. As cross-sectional study lacks the ability to assess causal relationship, the longitudinal studies could better explain the significant associations herein. Second, data has been collected from representatives at management positions within firms so additional sources such as employee's supervisors could be considered to enhance objectivity and elude potential bias. Third, this study has investigated the impact of leadership on individual level. Future research is recommended to assess the effect of leadership on multi-level to ads on the insights into how the model operate. Fourth, As the present study has only assessed the mediating role of psychological mechanism; future research should further explore the potential mediators to enhance the understanding about the relationship between sustainable leadership and sustainable performance.

As this study has been conducted only in Muslim countries of ASEAN region, future studies should consider multiple sectors, cultures, and team formations to cope with generalization issue. Furthermore, unique results may also be obtained using an experimental analysis in future research. Future research is further recommended to investigate the aspect of structural empowerment and organizational learning to supplement the existing literature in this domain. To finish, since psychological safety has been found to improve complacency (Jha, 2018); the adverse impact of complacency in the psychologically safe workplace should also be examined in future studies.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jclepro.2020.121429.

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