Green human resource management practices and environmental performance in Malaysian green hotels: The role of green intellectual capital and pro-environmental behavior

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ARTICLE INFO

ABSTRACT

This study examines the role of green human resource management practices towards the environmental performance of green hotels in Malaysia. It also investigates the mediating effect of green intellectual capital and pro-environmental behavior. The target population consisted of employees of green hotels in Malaysia. Data collected using a survey questionnaire from 374 employees was subjected to PLS-SEM for analysis. The findings revealed that green human resource practices (Green training & development and green discipline management) are significant predictors for green intellectual capital further positively contribution towards pro-environmental behavior. Findings also proved that employees' pro-environmental behavior plays a significant role to enhance the environmental performance of hotels. Moreover, it is shown that green human resource management practices indirectly contribute to environmental performance through green intellectual capital and pro-environmental behaviors. This study is one of the few attempts to integrate the green human resource management practices with green intellectual capital and pro-environmental behaviors in the domain of environment management. It explicitly contributes towards a new line of research to understand the crucial role of green human resource management practices to improve the environmental performance of hotels. The study findings have postulated green training and development as a key practice to build intellectual capital and foster pro-environmental behaviors. It can help the managers in their effort to build the intellectual capital that facilitates to generate pro-environmental behaviors. In order to cope with the rising environmental concerns of the hotel industry, the present study suggests that managers should maintain green discipline by punishing or fining employees for not observing the environmental policy of hotels.

1. Introduction

That last six decades proved to be beneficial for tourism as it resulted in 1.5 billion international arrivals in 2019, which represents an approximate 3.8% year-on-year increase. Notably, spending on global tourism increased from 495 billion USD to 1.5 trillion USD, and it also accounted for the 7% exports in goods and services (United Nations World Tourism Organization, 2019). Consequently, room occupancy and room revenue also increased due to increased international tourism.

Smith Travel Research (STR, 2019) reported an increase in the revenue per available room in the United States for 10 years in a row. The European hospitality industry experienced slower revenue per available room, the Middle East has been on a downward trend for six consecutive years since the 2014 drop in oil prices, Africa enjoyed a positive rooms revenue per available room, and the Asia Pacific reported a drop in rooms revenue per available room along with a drop in occupancy as well, indicating a growth trend in above-mentioned regions.

Similar situations also prevail in Malaysia. It is famous for tourism

among the other countries in the South Asia region (Amin, 2013). As per the statistics of Tourism Malayisa (2020), the number of tourists touring Malaysia is increasing, and over 2.6 million tourists visited Malaysia in 2019, resulting in 86.1 million ringgit receipts. Similarly, with the increase in tourism, the hoteling industry has also grown, which resulted in an increase in the number of hotels from 4512 (2017) to 4750 (2018) (My Tourism Data, 2020b). In addition, room availability has also increased from 292.29K in 2017 to 308.21K in 2018 (My Tourism Data, 2020a). Moreover, room occupancy also ranged from 31% to 78.8% in different states of Malaysia. The above-mentioned statistics speak for themselves regarding the growth of the hotel industry in Malaysia. Moreover, the Malaysian tourism industry significantly contributes to the economic growth of Malaysia (Mohammed and Rashid, 2018), and it is highly supported by the government as a strategy to move towards long-run economic development in 2020 (Yadegaridehkordi et al., 2020). Particularly, tourism and hospitality are regarded as the most favorable Malaysian sectors regarding growth as it has a contribution of approximately 20 billion USD towards the gross domestic product (Bhuiyan et al., 2013).

However, with the phenomenal growth of the hotel industry over the years, hotels are also facing pressure to be responsible towards the environment by paying appropriate attention and adopt eco-friendly activities that are not harmful to the environment. The pressure to become eco-friendly is stronger in hotels as they are directly responsible for environment-related issues such as water, energy, and waste (Graci and Kuehnel, 2011). Hotels are being pressured to improve their environmental performance due to their waste generation. The hotel industry resulted in environmental issues in different ways, and evidence in this regard is also available. For instance, Hoang et al. (2017) reported that 0.35 kg/room/day to 4 kg/room/day ranged from small to a 4-star hotel in Hoi, Vietnam. On the other hand, Otoma et al. (2013) also reported 89.72 kg/hotel/day to 0.95 kg/room/day waste generation in Danang Vietnam. A similar situation also prevails in Malaysia as well. A recent study has reported that the tourism and hotel industry proved to be economically beneficial for Malaysia is considered as the second-largest sector to contribute to GDP after the manufacturing sector. But the growth of the tourism and hotel industry has also posed a threat to the nature if it is not appropriately managed (Abdulaali et al., 2019).

(Nilashi et al., 2019; Nilashi et al., 2019). The above statistics reveal that it has heavily contributed to the global and Malaysian economic context. However, the phenomenal growth of the hospitality industry resulted in several environmental challenges such as environmental degradation globally as hotels are responsible for higher consumption of energy, water for heating, cooling, and lighting (Abdou et al., 2020). Therefore, in an attempt to positively contribute to the environment, the hotel industry is adopting green human resources management, and by adopting such practices it aims to create a win-win situation for the hotels and stakeholders. It warrants more research in the domain of green HRM practices and how do they contribute towards environmental performance, particularly in the context of the hotel industry (Yusoff, Nejati, Kee, & Amran, 2018a).

Previously, studies in the Malaysian context have reported that the hotel industry accounts for high water and energy consumption along with producing tons of waste that negatively influences the environment (Yusof and Jamaludin, 2013). Notably, the hotel industry is harmful to the environment, and 75% of its negative influence is due to the excessive utilization of consumables, energy, and water (Mohamad et al., 2014). It seems that the Malaysian hotel industry is well aware of its influence on the environment, but still has not been proactive in regards to green initiatives (In form of GHRM) (Siti-Nabiha et al., 2011). Accordingly, Amran et al. (2017) contended that the majority of the hotel managers in Malaysia are considering the green practice in a positive manner. However, the statistics presented by the Ministry of Tourism, Arts, and Culture Malaysia are not satisfactory as there are only 24 hotels in Malaysia that are rated as green hotels (Ministry of Tourism,

2020). Moreover, one study (Amran et al., 2017) has contended that Malaysian hotel managers are still not sure about decision making regarding the implementation of the green practices in their hotels. Further, Amran et al. (2017) also added that the hotel managers are gradually making progress in adopting green practices, however the majority of them are not adopting them. Therefore, more research is required on the link between green HRM and environmental performance particularly in the hotel industry to provide empirical evidence that green HRM practices boost environmental performance.

Green human resource management practices are necessary to be considered as a predictor of environmental performance as greening an organization influences the overall supply chain; production, waste management, culture, values, strategies, and employee behaviors are just a few examples to mention (Benevene and Buonomo, 2020). Additionally, human resource management practices facilitate the implementation of green policies and practices by its different practices such as recruitment, compensation, rewards, and exit policies (Renwick et al., 2013). Greening an organization is a new shift that asks for a commitment from both the employees and the management. It does not happen by only practices influenced by GHRM but also by the promotion of green behaviors among the members of an organization (DuBois and Dubois, 2012). Hence, the present study aims to examine the process through which green human resources management practices can increase environmental performance particularly in the context of Malaysia.

Additionally, the relationship between the GHRM and green intellectual capital is at its early stage, and there is a need to conduct more research (Malik et al., 2020). Besides, previously it was recommended that the green intellectual capital can be investigated as a mediator between the GHRM and OCB in the theory of ability motivation, and corporate social responsibility (Yusliza et al., 2020). The green HRM literature scope should be extended by examining the intellectual capital as a mediator between the relationship of green HRM and sustainable performance (Yusliza et al., 2020). Previous studies have also suggested studying green intellectual capital (Yong et al., 2020; Yusliza et al., 2020). Moreover, Yusoff et al. (2019) argued that few studies have considered green intellectual capital and its contribution to the environment, which warrants more research on its effects on environmental performance. Additionally, they also contended that green intellectual capital, being a novel concept, is not well-known among academicians and practitioners. Thus, it must be studied as it can positively contribute to the environment. Recent studies recommended conducting research on the relationship between GHRM and green intellectual capital in the services industry context (Yusliza et al., 2020; Yusoff et al., 2019).

Organizations can enhance environmental performance by widening the scope of green HRM practices (Yadav and Ramaswamy, 2020). The study intends to present a research framework that builds the intellectual capital and results in environmental performance. Thus, the present study has considered green discipline management, which is not covered under general HRM practices and is a relatively novel construct. Further, the study also intends to validate the scale for green discipline management as the previous studies (Al Mamun, 2019; D'Mello et al., 2016; Nagarajan, 2020a; Uddin, 2020) have used different items to measure green employee discipline management but followed the same conceptual ground. From the contextual perspective, various studies have contended that green HRM is widely studied in the western context, which warrants more research in developing countries (D'Mello et al., 2016; Mishra, 2017; Renwick et al., 2013). Therefore, the present study addressed the aforementioned research gaps by considering green intellectual capital as a mediator between the relationship of green HRM and pro-environmental behaviors which contribute towards the environmental performance.

The aim of the study is to examine the influence of green human resource management practices, namely, green hiring, green training and development and discipline management as well, on the environmental performance of hospitality industry employees by also

considering the green intellectual capital and pro-environmental behaviors as mediators. The study adds and advances the existing literature on GHRM from a discipline management perspective informing how green discipline management will allow the hotels to build the green intellectual capital. Additionally, the study also adds to the literature on green discipline management theoretically and methodologically by validating the measure.

2. Literature review

The literature review provides details regarding the research framework and how it is underpinned by the social cognitive theory. Additionally, it individually discusses the hypotheses among the variables under study.

2.1. Social cognitive theory

Social cognitive theory (SCT) (Bandura, 1986) provides the foundation for the current study. It has three main components: person, behavior, and environment. The knowledge, attitude, and experiences of the person generate positive behavior. Moreover, the positive interaction between person and environment shapes the behavior of an individual. Green human resource management practices such as green hiring, green training and development, and green discipline improve the abilities, attitude, and experience of employees and boost the positive behavior of employees towards pro-environmental behaviors. Furthermore, the positive behavior in the direction of the environment enhances the environmental performance. The individual has a high level of green intellectual capital when they are hired, trained, and provided with the green discipline values to perform pro-environmental behavior.

Additionally, SCT intends that a variety of personal, environmental, and behavioral variables stimulate the pro-environmental behavior, which ultimately improves the environmental performance. Moreover, green intellectual capital is the knowledge, abilities, and experience of individuals about greening the environment, which fosters positive behavioral outcomes, i.e., when an individual has knowledge, abilities, and experience related to environmental initiatives, he or she is more involved in pro-environmental behaviors. Further, green hiring, green training and development, and green discipline may affect individuals' green intellectual capital and also willingness to transform their environmental goals into actions and perform pro-environmental behaviors. Environmental performance is more likely to be achieved when individuals experience strong organizational supports and less hurdles in form of green HRM practices (Bandura, 1999; Sawitri et al., 2015; Singh et al., 2020).

2.2. GHRM and green intellectual capital

In the environmental context, HRM can ensure the successful formulation and implementation of environmental management (Daily and Huang, 2001) by incorporating the practices such as selection, performance assessment, training, and development with the environmental goals (Jabbour et al., 2013). HRM is increasingly integrated with green concepts (Mishra et al., 2014), which resulted in the emergence of "Green Human Resource Management (GHRM). Renwick et al. (2013) contended that GHRM is a reflection of HRM-related environmental management with primary emphasis on how HRM can reduce pollution by managing organizational operational processes. Additionally, GHRM practices represent the organizational orientation towards protecting the environment and is inclusive of various aspects of HRM practices (Mishra et al., 2014) collectively focused on the instability of ecosystem and ecological effects of organizations due to their economic activities (Boiral, 2002). Moreover, GHRM practices are valuable for external stakeholders, whereas HRM practices are internal stakeholders oriented for profit maximization. GHRM ensures that employees are committed

and involved in pursuing the environmental practices along with their attention on their work for profits as well. By following these practices, an organization may develop a positive image and also benefit future generations. Accordingly, business organizations must behave in an environmental friendly way to become green and competitive in current business scenarios because their survival depends on having a competitive edge by being sustainable (Yong et al., 2019). Although there are various GHRM practices such as green reward management, green performance evaluation, green human resources planning (Uddin, 2020) green performance management, and compensation (Mousa and Othman, 2020a), the present study has focused on a few of them. The strong reason for this lies in the purpose of the study, which is to build the green intellectual capital that can be better accomplished with the practices specifically emphasizing and targeting the intellectual capital building rather than a reinforcement of the desired behaviors. For instance, appraisals and rewards reinforce the behavior as compared to building intellectual capital. Hence, the study has considered the only three practices, namely, green hiring, green training and development and green discipline management.

Intellectual capital (IC) is the organizational value-creating asset which can be enhanced by HRM practices in the form of knowledge and competencies (Kianto et al., 2017). Furthermore, intellectual capital is considered as a non-financial and concrete resource, grounded on organizational abilities, experience, and knowledge to construct competitive advantage and improve performance (Allameh, 2018; Rehman et al., 2020; Sydler et al., 2014; Yong et al., 2019). Green intellectual capital (GIC) is the combination of intellectual capital and environmental initiatives which includes all intangible assets, i.e., knowledge, proficiencies, and collaborations at individual and organizational levels (Chen, 2008). Thus, when individuals are hired on the basis of green initiatives, providing green training and development, and following green discipline practices, which ultimately improves environmental management (Jyoti, 2019; Mandip, 2012). In this way, the green intellectual capital creates value for the organization.

Furthermore, Yong, Yusliza, Ramayah, and Fawehinmi (2019) examined the association between green HR practices and green intellectual capital, and they highlighted that different dimensions of green intellectual capital are significantly related to green human resource practices. Ma, Chen, and Ruangkanjanases (2021) reported that green training provided to the employees enhances their skills, abilities, knowledge, commitments, and attitude towards environment management. Their study findings also proved that green training provided to employees results in green human capital which is one of the components of green intellectual capital. Accordingly, a previous study integrated green HRM practices with green intellectual capital. According to findings, green HRM practices play a key role in enhancing pro-environmental psychological capital. It further identified that green recruitment and selection, green training and development, green compensation, and green performance management are significantly related to green intellectual capital. This study also proposed that improvement in green HR practices could facilitate the enhancement of green intellectual capital for the sake of competitive advance (Jirawuttinunt, 2018). Moreover, a recent study by Yong et al. (2019) also argued that green HRM practices play a significant role towards green intellectual capital and organizational sustainability. Based on the above discussion it can be hypothesized that:

H1. Green hiring is significantly related to green intellectual capital.

H2. Green training and development is significantly related to green intellectual capital.

H3. Green discipline management is significantly related to green intellectual capital.

2.3. Green intellectual capital and pro-environmental behavior

Individual intellectual capital enhances the performance of the organizations because when individuals have good knowledge, abilities, skills, and competencies regarding their job they perform better and enhances the organizational performance (Chen, 2008; Hermawan et al., 2020; Yong et al., 2019). Pro-environmental behavior of employees denotes "willingness to engage in pro-environmental activities" (Scherbaum et al., 2008). Employee pro-environmental behavior has two types: task-related and voluntary pro-environmental behaviors. Moreover, according to SCT (Bandura, 1986) when an employee has non-physical and concrete resources such as knowledge, skills, and abilities related to environmental initiatives, then he or she behaves more environment friendly by performing task duties and extra mile behavior (pro-environmental behavior) according to environmental initiatives. Thus, green intellectual capital is critical in pro-environmental behaviors. Further, the employee's environmental knowledge positively affects employee pro-environmental behaviors.

Intellectual capital is crucial for organizations as it creates value for them. Knowledge exists in different forms in organizations, such as in databases, internal and external relationships, business processes, and systems. Additionally, human skills in the form of knowledge, creativity, and commitment develop sustainable performance. Human capital may be used by the employees to increase their performance, and reduce wastage leading towards sustainable performance (Malik et al., 2020). When the employees are equipped with the appropriate knowledge and skills, they will be more likely to get engaged in environment-oriented behaviors. Accordingly, Tefera and Hunsaker (2020) in their study contended that the intangible asset in form of human, social, organizational (Structural), and psychological capital results in organizational citizenship behaviors. Moreover, the successful steps taken by an organization for long-run environment-related performance hinges upon employee pro-environmental behaviors (Saeed et al., 2019). Green intellectual capital is a distinctive source for improvement of the employee behavior towards greening the environment and enhances the sustainable performance of the organizations (Yusliza et al., 2020). Consequently, the present study argues that when an organization hires employees with green psychology (Orientation), provides them environment-oriented training, develop them and finally, ensures a discipline within an organization ultimately building the green intellectual capital.. Additionally, when the employees are capable, have knowledge, and the organization also has developed the processes and procedures, then it will lead towards the increased pro-environmental behaviors.

H4. Green intellectual capital is significantly related to employees' pro-environmental behaviors.

H5. Green intellectual capital significantly mediates the relationship between green hiring and pro-environmental behaviors.

H6. Green intellectual capital significantly mediates the relationship between green training and development and pro-environmental behaviors.

H7. Green intellectual capital significantly mediates the relationship between green discipline management and pro-environmental behaviors.

2.4. Pro-environmental behavior and environmental performance

Employee's pro-environmental behaviors fundamentally influence environmental performance (Vicente-Molina et al., 2013). Such behaviors and employee participation in eco-friendly behaviors that address the environmental issues are considered as an effectual stratagem to become an organization that values the environment by being environmentally responsible ultimately enhancing the performance regarding the environment (Djellal and Gallouj, 2016; Kangasniemi

et al., 2014; Saeed et al., 2019). In addition, green human resource management practices increase the employees' environmental awareness. When they are aware of the environmental issues, then they will engage in environment-oriented activities ultimately enhancing the environmental performance (Chen and Chang, 2013). Moreover, previous studies explained that the green behavior of employees enhances the employees' green performance (Guerci et al., 2016; O'Donohue and Torugsa, 2016). Nowadays, organizations are facing pressure from their stakeholders. Therefore, there is a need to do more research related to green behaviors and eco-friendly practices (Singh et al., 2020). According to SCT (Bandura (1986), the behavioral factor of a person affect the environmental factors. Thus, the participation of employees towards greening the environment enhances the organization's performance. Furthermore, the pro-environmental behavior of employees improves the employee's environmental performance.

The literature supports the argument that green intellectual capital is significantly related to pro-environmental behaviors, (Saeed et al., 2019; Yusliza et al., 2020), and pro-environmental behaviors are significantly related to environmental performance (Chen and Chang, 2013; Elshaer et al., 2021; Naz et al., 2021; Ojo et al., 2020; Singh et al., 2020; Umrani et al., 2020). Therefore, based on SCT (Bandura, 1986), and empirical evidence, this study assumed that pro-environmental behaviors may play an intervening role and mediate the existing relationship between green intellectual capital and environmental performance. Based on social cognitive theory (Bandura, 1986), it is proposed that green intellectual capital along with pro-environmental behaviors may further predict the environmental performance in a better way. Drawing on a synthesis of previous studies and based on SCT, this study proposes that.

H8. Pro-environmental behaviors are significantly related to the environmental performance of hotels.

H9. Pro-environmental behaviors significantly mediate the relationship between green intellectual capital and environmental performance.

Fig. 1 shows the theoretical framework of the present study. As per the framework the GHRM practices, namely, green hiring, training and development and discipline management builds the green intellectual capital (Jirawuttinunt, 2018; Kim, Kim, Choi and Phetvaroon, 2019a). Hiring the individuals that correspond with the green policies or environmental approach of organization, providing them training and development opportunities, and also maintaining the green discipline results in green intellectual capital. Later on, the green intellectual capital as an ability motivates employees to execute green behaviors, resulting in higher environmental performance. It is also consistent with SCT (Bandura, 1999) which holds that personal, behavior and environmental variables stimulate pro-environmental behaviors, resulting in higher environmental performance.

3. Methodology

Methodology is one of the important sections of a research study. The methodology section provides the details regarding the questionnaires adapted from previous studies, translation of questionnaire, population, sampling, and data collection procedures.

3.1. Questionnaire and pre-test

All the measuring instruments to measure the underlying constructs were adapted from previous studies (See Table 1). All of them were multi-item measures. A scale of GHRM practices is comprised of three dimensions named green hiring, green training & development, and green discipline. Based on a recent study by Mousa and Othman (2020b), a six item scale was adapted to measure green hiring. Eight items were used to measure the green training & development that were adapted from a study by Yusoff, Nejati, Kee, and Amran (2018b).
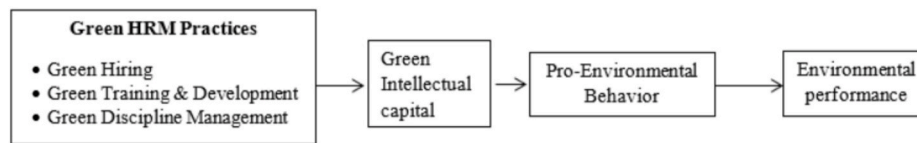
Fig. 1. Theoretical framework.

Furthermore, based on few recent studies Al Mamun (2019), UDDIN (2020), and Nagarajan (2020b), a seven items scale was adapted to measure green discipline management. Green intellectual capital is comprised of three dimensions named as green relational capital, green structural capital and green human capital. Referring to Table 1, a total of 18 items were used to measure green intellectual capital. Five, eight, and five items represent the relational, structural and human capital, respectively; these were collectively used to measure the green intellectual capital and were adapted from Huang and Kung (2011). Moreover, 6 items used to measure pro-environmental behavior were developed by Roberson and Carleton (2017). A 7-item scale developed by Kim, Kim, Choi, and Phetvaroon (2019b) was used to measure the hotels' environmental performance.

The questionnaire was translated from English to Bahasa Melayu using the back-translation method proposed by Brislin (1970). Translation and editing services (English to Bahasa Melayu) were given by the editing and translation section of the Professional Development Unit in the School of Languages, Civilisation, and Philosophy at Universiti Utara Malaysia. The English version of the questionnaire was translated into Bahasa Melayu. Later on, the translated questionnaire (Malaysian version) was translated back to English by other translator. Finally, English and Bahasa Melayu versions were compared to find any discrepancies. All differences were sought out by the translators. Content validity was performed by sending the measurement instrument to five experts including two human resource managers of hotels and three assistant professors having specialized education in hospitality management. Based on their suggestions, some minor adjustments were made. To ensure clarity, a pilot study was conducted, and the questionnaires were given to 35 respondents to seek their feedback. The questionnaires required no amendments at all.

3.2. Sample design and data collection

This study used a deductive approach with a survey questionnaire method. Langkawi city in Malaysia was selected for data collection. According to the Langkawi Development Authority (LADA), Langkawi is one of the most attractive tourist places and a world-class tourism destination with several international and local tourists. Langkawi city was targeted for data collection because it is one of the most popular destinations in Malaysia for tourists. A list of five-star hotels was taken from the Malaysian Association of Hotels (MAH). A total of ten hotels were selected randomly. Data were collected within 3 months (September 2020 to November 2020). Data collection services were availed by a Malaysian organization "Quantum Data Collection (QDC)". Surveyors were hired for data collection. As per the instructions provided to the surveyors, they informed all the respondents regarding the research purpose and then obtained consent to fill the questionnaire. All selected hotels were following the green practices and strictly following the rules and regulations mentioned under the Malaysian Hotels and Restaurants Act. Data were collected from the employees who were directly engaged with the implementation of the green practices of hotels by using purposive sampling. Data were collected from the managerial staff of selected hotels. Due to Covid-19, surveyors collected data by using an online questionnaire in person. Before formal data collection, an invitation letter was send to the HR department of selected hotels to refer to the actual respondents after approval. Selected managers were handed over with the questionnaire to fill it. Out of ten

selected hotels, 650 employees completed the questionnaires. Finally, 374 responses were found valid after the process of data cleaning for further data analysis, giving a response rate of 57%. This response rate is in line with the studies conducted in hospitality and tourism domain (Ali et al., 2021).

3.3. Demographics

This section deals with the demographic characteristics of respondents. A total of 374 respondents participated in this survey. Results show that out of 374 participants, 71.2% (266) were male and 28.8% (108) were female. The majority of the respondents were aged from 31 to 40 years. The survey accounted for 53% (198) of individuals being in that age group. While 38% (142) were of ages up to 30 years old, and the remaining 9% (34) belonged to the age group of 41–50 years. In terms of education, 72.3% (270) of participants had bachelor's degree, followed by 17.7% (66) with Master's degree, 9% (34) fell in the others' category, and the remaining 1.1% (4) had obtained their Ph.D. The results relating to the length of service found that 21.7% (81) of individuals had up to one-year job experience, 54.9% (205) of respondents had 1–5 years of experience, and the remaining 23.4% (88) had 6–10 years of experience in their respective organization.

4. Findings

Hypotheses were tested by using PLS-SEM because it is widely used and is believed to be a modern assessment technique in all business sectors, particularly in the hospitality and tourism area (Ali et al., 2018). This empirical investigation aimed to predict and explain the studied latent variables grounded with contemporary theory. Additionally, it is assumed as a flexible technique for model assessment (Ringle et al., 2005). The next reason for adopting PLS-SEM is concerned with the lesser requirements with respect to sample size as compared to Amos and normality of data (Hair et al., 2016). Therefore, this research used PLS-SEM to avoid data normality issues and sample size. Besides this, the PLS algorithm and bootstrapping technique are conducted to find factor loadings for testing the construct validity and internal consistency reliability (Ali et al., 2018), path coefficients, and corresponding significant level to test the hypotheses. First, the measurement model was calculated, and then estimations were found through structural model assessment.

Although PLS-SEM is a non-parametric analysis tool and does not necessitate the condition of the normal distribution of data as stated in aforesaid para, the data normality distribution must not be neglected before putting on any inferential statistics (Hair et al., 2007). Thus, following guidelines stated by Munro (2005), this research measured the data normality via the skewness, kurtosis, and histogram plots. Results revealed that values of all latent variables lie in the confined threshold (such as for skewness and kurtosis ranges of values should be between -2 and $+2$), inferring that the data were normally distributed. Since these findings delineate that there is no issue of abnormality of data, further analysis can be done by applying PLS-SEM.

Past research proclaimed that a full collinearity test could be deployed to find whether data was flamed with the issue of common method bias while using PLS-SEM. Based on the suggestions by Kock (2015), common method bias was assessed by employing variance inflation factors (VIF)s The results demonstrated that all the scores of

Table 1
Scales for Constructs.

Items
Green Hiring (Mousa and Othman, 2020)
GH1 The hotel prefers to recruit employees that have knowledge about environment.
GH2 Applicants for jobs in the hotel are subject to interviews to test their knowledge about environment
GH3 In addition to other criteria, employees are selected based on environmental standards.
GH4 Job seekers are attracted by the environmental image and policies of the hotel
GH5 The job description includes the job's environmental aspects
GH6 The recruitment message includes hotels' environmental values in job advertisement
Green Training and Development (Yusoff et al., 2018).
GTI1 Training programs about environment are provided to large-scale individuals in the hotel.
GTI2 In general, staff are satisfied with the hotel's green training.
GTI3 Topics offered through green training are modern and suitable for the institution's activities.
GTI4 The hotel provides formal environmental training programs for employees to increase their ability to promote them.
GTI5 Environmental training is a priority and an important investment.
GTI6 The need assessment for green training helps to familiarize employees with environmental practices
GTI7 Evaluation of green training and development helps to measure the employees' level of green knowledge and awareness.
GTI8 Environmental objectives contain green training and development aspects
Green Discipline Management (Al Mamun, 2019; UDDIN, 2020; Nagarajan, 2020)
GDM1 Setting penalties or dismissal for environmental management breaches. Opatha, 2013
GDM2 Developing a progressive disciplinary system to punish employees who violate the rules of green conduct
GDM3 Implementing 'discipline management' as a tool to self-regulate employees in environmental protection activities of the organization.
GDM4 Our hotel maintains green employee discipline management
GDM5 We set penalties for noncompliance on targets in environmental management.
GDM6 We set penalties or dismissal for environmental management breaches.
GDM7 We formulate and publish rules of conduct relating to greening.
GDM8 We establish a clear set of rules and regulations which impose or regulate employees to be concerned with environmental protection
Green Intellectual Capital (Huang and Kung, 2011)
Green Human Capital
GHC1 The employees in this hotel involve a positive productivity and contribution towards environmental protection.
GHC2 The employees in this hotel have an adequate competence towards environmental protection.
GHC3 The employees of this hotel provide high product and service qualities towards environmental protection.
GHC4 The cooperative degree of teamwork towards environmental protection is performed at high levels in this hotel.
GHC5 The managers can fully support their employees to achieve their jobs of environmental protection.
Green Structural Capital
GSC 1 This hotel has a superior management system of environmental protection.
GSC 2 This hotel has a high ratio of employees of environmental management from its total employees.
GSC 3 This hotel makes an adequate investment in environmental protection facilities.
GSC 4 The overall operation processes towards environmental protection in this hotel operate efficiently.
GSC 5 The knowledge management system in this hotel is favorable for the accumulation and knowledge sharing of environmental management.
GSC 6 This hotel has formed a committee to progress on key issues in environmental protection.
GSC 7 This hotel has established detailed rules and regulations of environmental protection
GSC 8 This hotel has established a reward system for accomplishing environmental tasks
Green Relational Capital
GRC1 This hotel designs its products or services in compliance with the environmental desires of its customers.
GRC2 The customers are satisfied about this hotel's environmental protection.
GRC3 The cooperative relationships of this hotel with its suppliers towards environmental protection are stable.

Table 1 (*continued*)

Items
GRC4 The cooperative relationships of this hotel with its clients towards environmental protection are stable.
GRC5 The cooperative relationships of this hotel with its strategic partners towards environmental protection are stable.
Pro-Environmental Behavior (Roberson and Carleton, 2017)
PEB1 Recycling cans, bottles and newspapers, etc., is inconvenient.
PEB2 I hate having to wash out bottles for recycling.
PEB3 Conserving materials, energy, etc., is inconvenient.
PEB4 I hate remembering to turn off lights, computers, etc., to conserve energy/materials.
PEB5 Engaging in pro-environmental behaviors is inconvenient.
PEB6 I hate the time and effort it takes to engage in pro-environmental behaviors.
Environmental Performance (Kim et al., 2019a,b)
EP1 Our hotel has reduced wastes
EP2 Our hotel has conserved water usage
EP3 Our hotel has conserved energy usage
EP4 Our hotel has reduced purchases of non-renewable materials, chemicals, and components.
EP5 Our hotel has reduced overall costs
EP6 Our hotel has improved its position in the marketplace
E7 Our hotel has helped enhance the reputation of our hotel

VIFs for the latent variables were lower than the cut-off value, thereby claiming that data was not contaminated with the error of CMB.

4.1. Measurement model assessment

Before testing the hypotheses, the measurement model was assessed. Factor loadings, average variance extract (AVE), and composite reliability (CR) were used to determine the convergent validity (CV). Table 2 shows the values for convergent validity. Factor loadings should be greater than 0.60. As per the findings reported in Table 2, all of the factor loadings except for few ones are meeting the threshold of 0.60. Values of CR and AVE must be greater than 0.70 and 0.50 respectively (Hair et al., 2016). As per the findings reported all the values of CR and AVE are greater than 0.70 and 0.50 respectively. Items were deleted with the lowest factor loadings (<0.50).

Henseler, Ringle, and Sarstedt (2015) put forward an advanced approach for the assessment of discriminant validity. They contended that the Fornell-Larcker criterion can effectively assess the discriminant validity, however, it may not detect for lack of discriminant validity. Hence, discriminant validity was assessed by HTMT. Table 3 shows values of HTMT for variables understudy. As per criterion HTMT values for all variables must be less than 0.90 (Gold, Malhotra & Segars, 2001). Table 3 shows that HTMT values for all variables are less than 0.90 which establishes the discriminant validity for all variables understudy.

4.2. Structural model assessment

The structural model was assessed after the assessment of the measurement model. Path coefficients, t-values, and standard errors were used to determine the model significance. Bootstrapping procedure was followed for testing the direct and indirect hypotheses (Ringle et al., 2005). Table 4 and Fig. 2 present details about the tested hypotheses. As per the results, only two hypotheses did not find any statistical support, while all other hypotheses were statistically supported. Referring to Table 5, VIF values for all the predictors were less than 5, as suggested by Hair et al. (2011), so it could be said that there was no issue regarding multicollinearity. Referring to Table 5, the exogenous constructs (green hiring, green training and development, and green performance management) contributed to 35.6% of the variance in green intellectual capital. It can be seen that 22.8% of the variance in pro-environmental behaviors was also explained by green intellectual capital. It can be seen that pre-environmental behavior accounted for 21.3% of variance in

Table 2
Convergent Validity.

1ST Order Constructs	2nd Order Constructs	Items	Loadings	Alpha	rho_A	CR	AVE
Environmental Performance		EP1	0.821	0.894	0.915	0.931	0.728
		EP2	0.891				
		EP3	0.862				
		EP4	0.891				
		EP5	0.799				
Pro-Environmental Behavior		PEB1	0.799	0.899	0.903	0.91	0.716
		PEB2	0.856				
		PEB4	0.827				
		PEB6	0.899				
Green Human Capital		GHC1	0.943	0.907	0.929	0.905	0.72
		GHC2	0.968				
		GHC3	0.42				
		GHC4	0.937				
Green Relational Capital		GRC1	0.878	0.858	0.868	0.913	0.727
		GRC2	0.688				
		GRC4	0.902				
		GRC5	0.922				
Green Structural Capital		GSC1	0.915	0.909	0.926	0.942	0.767
		GSC2	0.929				
		GSC4	0.884				
		GSC6	0.781				
		GSC7	0.861				
Green Intellectual Capital		GHC	0.776	0.835	0.843	0.862	0.675
		GRC	0.837				
		GSC	0.85				
Green Hiring		GH1	0.826	0.889	0.911	0.934	0.78
		GH3	0.913				
		GH4	0.917				
		GH5	0.874				
Green Training & Development		GTD1	0.849	0.863	0.884	0.92	0.742
		GTD2	0.857				
		GTD4	0.874				
		GTD5	0.864				
Green Discipline Management		GDM1	0.85	0.865	0.912	0.935	0.784
		GDM4	0.914				
		GDM5	0.885				
		GDM7	0.89				

Note: AVE-Average Variance Extracted; CR-Composite Reliability.

Table 3
HTMT Ratio.

	EP	GDM	GH	GHC	GIC	GRC	GSC	GTD	PEB
EP									
GDM	0.533								
GH	0.511	0.562							
GHC	0.564	0.343	0.241						
GIC	0.851	0.523	0.439	0.894					
GRC	0.734	0.524	0.35	0.637	0.891				
GSC	0.801	0.438	0.471	0.514	0.872	0.596			
GTD	0.575	0.692	0.681	0.381	0.624	0.587	0.574		
PEB	0.499	0.589	0.796	0.336	0.511	0.472	0.459	0.683	

environmental performance.

5. Discussion

This research work examined how green HRM practices contribute towards environmental performance in the context of Malaysian hospitality while considering the mediating role of green intellectual capital and pro-environmental behavior. Findings of the study are presented and discussed consistent with the research hypotheses. Concerning the hypothesis between green HRM and green intellectual capital, the study findings have confirmed the relationship between green training and development, green discipline management, and green intellectual capital. The findings confirm that in order to build green intellectual capital, hotels must provide the employees with the training. These are consistent with previously available literature (Ma et al., 2021; Pham et al., 2020; Yusliza et al., 2020), which also states that hotels must

consider the training activities that will equip the employees with new knowledge, skills and also upgrade their abilities regarding the green initiatives, ultimately leading towards building the green intellectual capital (Pham et al., 2019). Similarly, environmental training provided to the employees enhances their skills, knowledge and ability (Pham et al., 2020), translating into green intellectual capital (Yong et al., 2019). Intellectual capital consists of human, structural and relational capital. Ma et al. (2021) while examining the antecedents of green human capital, presented empirical evidence that green training provided to employees results in green human capital. The study findings also supported the relationship between green discipline management and green intellectual capital. Notably, there is no support found for the relationship between green hiring and green intellectual capital. Additionally, the findings of the study also confirmed a relationship between green intellectual capital and pro-environmental behavior. When the employees do have skill, knowledge, and ability regarding the green

Table 4
Path Analysis.

	Relationships	Beta	t-value	BC L.L	U.L	Decision
H1	Green Hiring -> Green Intellectual Capital	0.047	0.785	−0.078	0.148	Not Supported
H2	Green Training & Development -> Green Intellectual Capital	0.416	6.927	0.298	0.537	Supported
H3	Green Discipline Management -> Green Intellectual Capital	0.205	3.939	0.102	0.311	Supported
H4	Green Intellectual Capital -> Pro-Environmental Behavior	0.478	11.539	0.386	0.548	Supported
H5	Green Hiring -> Green Intellectual Capital -> Pro-Environmental Behavior	0.022	0.761	−0.034	0.076	Not Supported
H6	Green Training & Development -> Green Intellectual Capital -> Pro-Environmental Behavior	0.199	5.75	0.133	0.273	Supported
H7	Green Discipline Management -> Green Intellectual Capital -> Pro-Environmental Behavior	0.098	3.684	0.049	0.152	Supported
H8	Pro-Environmental Behavior -> Environmental Performance	0.462	9.818	0.372	0.548	Supported
H9	Green Intellectual Capital -> Pro-Environmental Behavior -> Environmental Performance	0.221	5.599	0.144	0.296	Supported

initiatives or practices they will be inclined to perform the environment-oriented behaviors (Yusliza et al., 2020); the present study findings are in line with the aforementioned argument. Pro-environmental behaviors and environmental performance were found to be positively associated. These findings are supported with the previous studies. For instance, Elshaer et al. (2021) from the hospitality industry perspective contended that pro-environmental behaviors of employees results in reduced wastage, water conservation, reduced energy consumption, and usage of renewable materials results in environmental performance. Similarly, Naz et al. (2021), Umrani et al. (2020), and Ojo et al. (2020) also reported a positive relationship between pro-environmental behaviors and environmental performance, thus, strengthening the results of the present study.

Results revealed that green intellectual capital and pro-environmental behaviors contribute to the environmental performance of hotels. Green intellectual capital is a multi-dimensional construct and covers human, structural, and relational capital aspects. It is worthy to note that the knowledge, skills, and attitude of the employees are an integral part of green intellectual capital and they jointly build the employees' competence and develops their attitude (Yusliza et al., 2020; Yusoff et al., 2019). For instance, Tefera and Hunsaker (2020) provided evidence that when the employees do have the knowledge, skills, and organizational processes and procedures also support them, they will be more inclined towards performing the OCBs. Accordingly, the present study findings also revealed that intellectual capital results in

pro-environmental behaviors among the hotel employees. The present study findings also state that the training provided to the employees and maintaining the green discipline in the organization build and facilitate green employee competence, which contributes towards pro-environmental behaviors. Findings also confirm that employee behaviors mediate the relationship between GHRM and environmental performance. These findings are in line with the previous research (Kim et al., 2019a; Pham et al., 2019), which also states that environmental performance can be increased by fostering environment-oriented behaviors among employees.

Considering the study findings, it is summed up that green HRM practices positively enhance environmental performance, and they do so by affecting the employees' attitudes and behaviors. Overall findings of the study are consistent with the previous studies (Daily et al., 2009; Datta, 2015; Muster and Schrader, 2011; Paillé et al., 2014), according to whom GHRM practices facilitate an organization to develop greener minds and positive approach towards the environment which lead towards the environment-oriented behaviors. Finally, it ends up increasing environmental performance. The study findings also confirm that the GHRM practices (Except green hiring) facilitate the environmental goals of hotels indirectly by building up the green intellectual capital and fostering pro-environmental behaviors among employees.

5.1. Theoretical implications

From a theoretical perspective, this work carries some implications. Previously it has been argued that green HRM and environmental performance are studied, but there is a lack of studies that incorporate two mediating variables to study the indirect influence of green HRM on environmental performance (Pham et al., 2019). Thus, the present study is a valuable addition to the literature on green HRM influence on environmental performance as it has explained the underlying relationship with two mediating variables and presented empirical evidence regarding a process through which green HRM contributes towards environmental performance. Hence, the mediation process presented by the present research work suggests a comprehensive framework to study the GHRM practices influence on environmental performance. The present research work is also a significant contribution to the existing literature as it has addressed the environmental performance issue in the services sector, particularly, the hospitality which is facing various challenges. There are few studies on green intellectual capital in environmental management (Yusoff et al., 2019), and most of those have marked it as a determinant of sustainable performance (Malik et al., 2020; Yusliza et al., 2020; Yusoff et al., 2019). This study not only examined the green intellectual capital from the environmental management aspect but also enhanced our understanding of how it contributes towards generating/fostering employee behaviors rather than directly resulting in environmental performance.

5.2. Practical implications

Our work also offers several practical implications for hotels. The study findings have postulated green training and development as a key practice to build intellectual capital and foster pro-environmental behaviors. Thus, the hotels are required to provide training to their employees regarding environmental practices and initiatives. Further, hotels are also required to provide opportunities for their employees to implement what they have learned during the training. As such opportunities will result in advancing their environmental skills, knowledge, and abilities, consequently, building up the intellect and foster the pro-environmental behaviors and finally, ending up in improved hotel environmental performance. Further, the research can facilitate managers in their effort to build intellectual capital as it has provided empirical evidence related to the contribution of GHRM practices towards the GIC. Additionally, the findings also aid managers to identify and focus on the particular practices to foster the pro-environmental
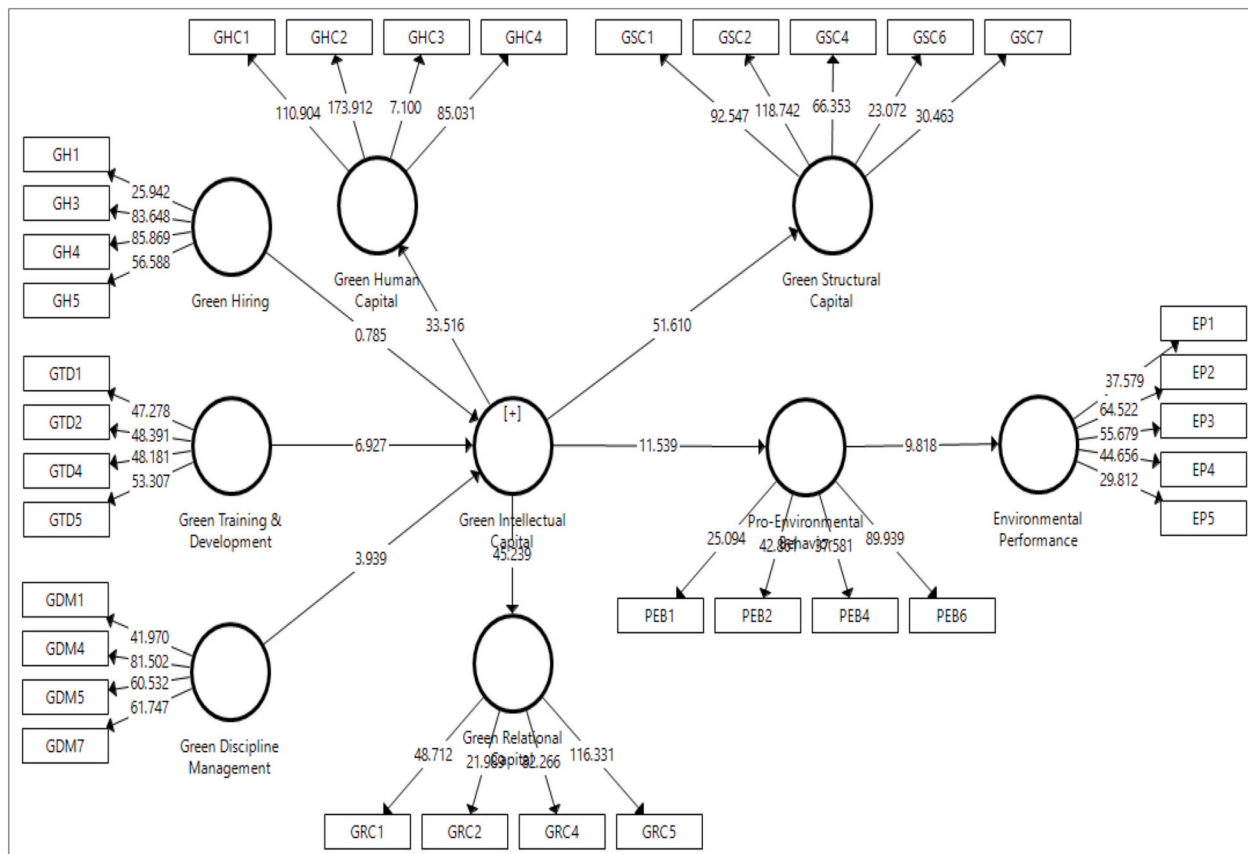
Fig. 2. Structural model assessment.

Table 5
R2, f2, and VIF.

Constructs	R2	Adj. R2	f2	Q2	VIF
Green Intellectual Capital	0.356	0.351	0.038	0.185	1.704
Pro-Environmental Behaviors	0.228	0.226	0.295	0.218	1.087
Environmental Performance	0.213	0.211	0.271	0.236	2.098

behaviors among employees, aimed at to enhance the environmental performance of hotels.

It is also important for hotels that they should hire employees with a passion to preserve the environment. For this purpose, various checks can be developed at hiring time. For instance, HR managers may conduct a test to judge the environmental orientation and awareness of the potential candidates. In order to cope with the rising environmental concerns in the hotel industry, the present study suggests that managers should maintain green discipline by punishing employees or fining them for not observing the environmental policy of hotels. Further, managers should strictly monitor that either discipline is maintained or not.

5.3. Implications for cleaner production policymakers

With this research study, it is suggested that green human resources management practices should be adopted and followed in order to increase environment-oriented behaviors and environmental performance. Application of the green human resources management practices requires that the HR manager use the online forums for the recruitment process in this way the usage of the papers will be reduced ultimately lead towards a drastic reduction in tree cutting. Additionally, they are also required to have online interviews resulting in a reduction of less fuel and energy usage, and lesser carbon emissions. By doing so the recruitment process of organizations can be improved and aligned with

environmental sustainability as it reduces unnecessary waste creation. Besides redefining the recruitment process from cleaner production perspectives, further, it is suggested that hospitality employees may be provided with the online training. In this way, carbon emissions due to travel and excessive energy consumption may be reduced. Additionally, hotels may also develop particular disciplinary actions consistent with the environmental policies to be followed by the hotel employees. For instance, there may be disciplinary action if the employees of the hotel unnecessarily leave the room lights on or there may be disciplinary action if they are using the electronic appliances extensively that may be against the environmental policy. Moreover, hotel employees may be also be trained to reduce food wastage and eliminate the unhygienic foods that are offered to the customers. The reduction of food wastage and production of safe food may be implemented consistent with the cleaner production concept.

5.4. Future research avenues

The research work also carries some shortcomings. First of all, the sample was taken from the service sector, and single-source data collection was followed. Future studies may consider the manufacturing sector to study the current research framework or they can also consider different service sectors to make a comparison. The present study has considered a limited number of green HRM practices. Future studies may consider other green HRM practices that can build green intellectual capital, and being a multi-dimensional construct, it is recommended that future studies should explore the dimensions influencing on behavior and environmental performance to have better insights regarding which aspect of GIC is to be more emphasized. More importantly, the study has examined the building up of the green intellectual capital and did not consider the retention of the employees (If they leave the hotels may lose their intellectual capital). Thus, it is recommended

that future studies should incorporate retention strategies (Rewards and appraisals) as well to retain the intellectual capital since the hotel industry in Malaysia comes under high turnover industries (Abo-Murad and Abdullah, 2019; Zainol et al., 2015). Moreover, it is also interesting to study the moderating variables between the relationship of green intellectual capital and pro-environmental behavior such as green self-efficacy. Finally, the development of generalized measures of green discipline management is recommended for future research studies.

6. Conclusion

The present study is a valuable addition to the existing literature on gaining higher environmental performance, particularly in the Malaysian hospitality context. The role of green human resources management practices was found to be associated with green intellectual capital among hospitality employees. Conclusively, by hiring conscientious employees, providing training and development, and also maintaining the green discipline, hotels can improve their green intellectual capital. As per the findings, green intellectual capital serves as a motivation which enables the employees to think that they can perform certain green behaviors as they have knowledge, skills, abilities and processes as well. Ultimately, this will result in pro-environmental behaviors that later on adds to the improved environmental performance. Study findings are not limited to the intellectual findings but they also revealed that how to do the intellectual capital results in boosting the pro-environmental behaviors among hotel employees ultimately resulting in the higher environmental performance of hotels. Hence, the study has provided evidence from a process perspective of how green human resources management practices result in higher environmental performance. Additionally, the study extended the existing body of knowledge on social cognitive theory by considering GHRM practices that may result in intellectual capital rather than a reinforcement of particular behaviors.

CRediT authorship contribution statement

Qasim Ali Nisar: Conceptualization, Writing – original draft, preparation, Methodology, Formal analysis, Visualization. **Shahbaz Haider:** Conceptualization, Writing – original draft, preparation, Methodology, Formal analysis, Visualization. **Faizan Ali:** Methodology, Formal analysis, Visualization, Supervision, Writing – review & editing. **Samia Jamshed:** Data curation, Writing – original draft, preparation, Investigation. **Kisang Ryu:** Supervision, Writing – review & editing. **Sonaina Saif Gill:** Data curation, Writing – original draft, preparation, Investigation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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