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Factors Influencing Green Practice Adoption and Mediating Role of Green Practice Benefits

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Abstract: Green practices are still uncommon among public workers in the course of their daily work; they do not assist in focusing on saving costs or contributing to environmental preservation. This research aims to examine what factors can influence employees at Politeknik Port Dickson (PPD), Malaysia to adopt green practices. Using the Technological, Organizational and Environmental (T-O-E) theory, this study proposed a research model that consists of green practice benefits, technological factors (compatibility and complexity), organizational factors (management support), and environmental factors (governmental support and environmental uncertainty). Moreover, the mediating role of green practice benefits was tested between the relationship of technological factors, environmental factors and green practice adoption. The online survey was conducted to get feedback from the employees in PPD by using a purposive sampling technique. A total of 153 responses were received and the final data were analyzed using SmartPLS 4.0. The findings found that green practice benefits positively influence green practice adoption. Meanwhile, compatibility (positive) and complexity (negative) influence green practice benefits. The mediating effect result has shown that green practice benefits mediated the relationship between technology factors (compatibility and complexity of the technology) and green practice adoption. The outcome of this study asserts to aid the management and employees at PPD in implementing green practices more efficiently in the future to safeguard the environment's well-being and save administrative costs in polytechnics.

Keywords: *Technological, organizational, environmental, green practice benefits, green practice adoption*

1. Introduction and Background

In general, there are still a large number of individuals on the planet who are unaware of the critical nature of adopting green practices (Junainah & Hanim, 2020). The spread of environmental surveillance systems across many administrative objectives is critical in sustaining the environmental management tradition. Organizations with a higher capacity for environmental management may achieve greater financial success (Wong et al., 2016). Additionally, Subramaniam and Mohd Salleh (2016) stated that environmental issues have become major problems across the globe, as governments are always under a burden to develop environmentally responsible and friendly activities. Companies worldwide are frequently on the lookout for new and creative methods to boost their overall competitiveness, and this responsibility has become a major factor in today's competitive environment. Environmental management has been elevated to a priority in the corporate world, alongside key brands in technology, consumer products, transportation, and a variety of other industries, since it enables businesses to retain economic viability without diminishing environmental capital (Ibrahim & Jaafar, 2016).

Most Asian cities are experiencing harmful and dangerous levels of air pollution, with India recording the highest levels. According to World Health Organization (WHO) data, there exist nine of the ten most polluted cities. Additionally, the statistics indicate that Malaysia is ranked seventh in Asia for environmental sustainability. The Environmental Performance Index (EPI) is an article that highlights environmental health leaders and laggards that bring attention to problems that lawmakers must address. Low EPI ratings highlight the need for sustainability measures, most notably air quality improvement and greenhouse gas (GHG) emission reduction. Malaysia's government has established an energy policy to ensure the long-term viability of energy, the environment, the economy, and society. Additionally, companies must embrace both firm and customer-driven green innovations to increase their efficiency (Musa, Li & Abas, 2016). The Ministry of Energy, Green Technology, and Water Malaysia (KeTTHA) was established on 9 April 2009 to pioneer an innovation aimed at resolving world problems such as environmental pollution, ozone depletion, and global warming. One of the objectives is to define the path for energy, green technology, and water industries by the company's overall growth goals (KeTTHA, 2010).

To guarantee that the Department of Polytechnic Studies and Community College (JPPKK) adheres to the government's green practices standards, the JPPKK established the SmartGreenPolyCC to implement the suggestions. According to SmartGreenPolyCC (2021), the teams seek to support a green culture and preserve polytechnics to generate green-collar workers, consistent with the objective of polytechnic transformation and Malaysia being a high-income, low-carbon developed country by 2025. The PolyGreen Polytechnic Blueprint Program, which began on April 1, 2015, will be extended to include several key components, as well as suggestions for sustainable development for all polytechnics and community colleges. Additionally, Blueprint Smart Green PolyCC programs include strategic cooperation around the implementation of planned green practices that adhere to certain management and organizational criteria (SmartGreenPolyCC, 2021).

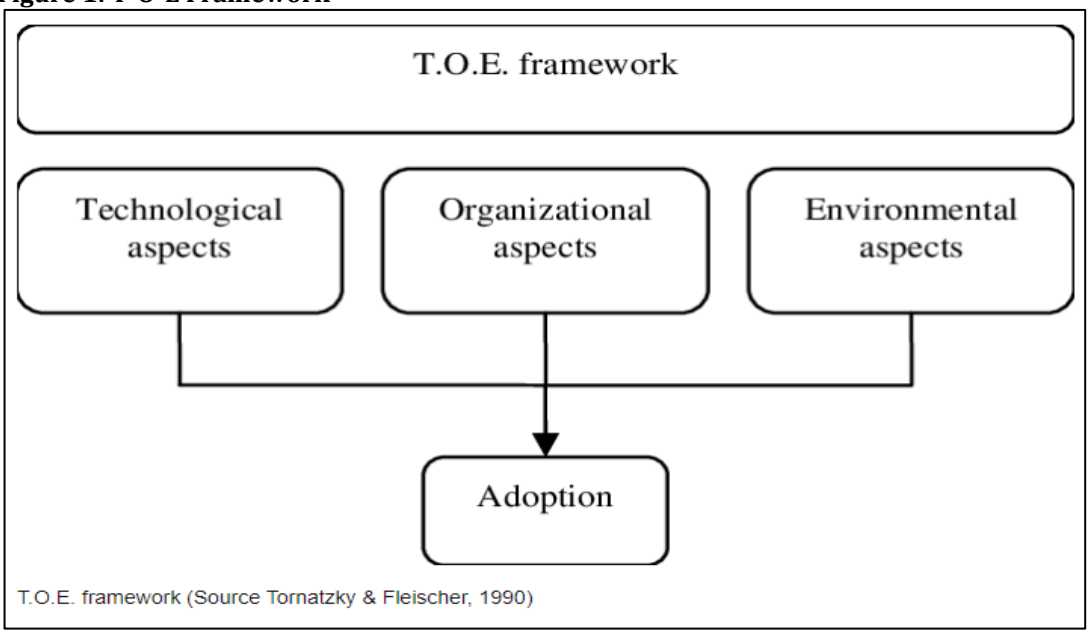
Governments and the World Energy Council (WEC) are key partners in developing and executing a wide variety of green technology projects that will fulfill society's requirements continuously. The obligation is to ensure that no damage is caused by the depletion of natural resources. In other words, the current demands must be satisfied without jeopardizing the capacity of future generations to meet their own (Kamaruddin et al., 2011). Although many studies agree that an organization's efficiency is largely reliant on its innovative features, the adoption of green technology has been seen as a key industry in the 21st Century that will accelerate its development (Woo, Chung, & Chun, 2014). Green technology is the development and deployment of goods, services, and systems that contribute to the protection of the natural environment and natural resources while mitigating and decreasing the adverse impacts of human activities (KeTTHA. 2010). Employees' understanding of green technology and its applications may be improved, and negative environmental impacts can be mitigated (Azmi, Musa, & Abdullah, 2017). To integrate government suggestions, the polytechnic and community college host a variety of activities promoting green practices. If this ecologically beneficial activity is sustained and expanded, it will assist companies in reducing various operational expenses.

Understanding the variables is critical for individuals to successfully adopt green practices and for researchers to fully comprehend the issues that must be addressed. Several researchers have proposed numerous factors that influence an organization's adoption of green practices (Gadenne et al., 2009; Williamson et al., 2006). Investor pressure, eco-friendly regulations, business dimensions, leadership characteristics, and human resources have all been linked to environmental and organizational factors in previous studies (Etzion, 2007; Gonzalez-Benito & Gonzalez-Benito, 2006a). Earlier research, particularly in the area of information technology (IT) adoption, has amassed a substantial body of empirical evidence, demonstrating that appropriate organizational structures complement technology adoption. Besides, such evidence enables organizations to achieve sophisticated productivity gains as a result of technology adoption. The primary objective of this study is to ascertain the variables that impact green practices among employees of the Politeknik Port Dickson (PPD). This study has followed the framework of the study by Mohd Rizaimy (2018) with some changes to reflect the relevance of the study among employees in PPD. Technological factors (compatibility and complexity), organizational factors (organizational support), and environmental factors (governmental support and environmental uncertainty) are the focused factors that influence green practices adoption among employees in PPD. Understanding these variables is crucial as they may affect green practices for them to be implemented successfully and for academics to grasp the issues that need to be addressed. Meanwhile, the current study also intends to highlight the role of green practice benefits as a mediator in the relationship between technological factors and green practice adoption.

2. Literature Review

Theory of Technological, Organizational and Environmental (T-O-E): Tornatzky and Fleischer (1990) have developed the T-O-E framework as shown in Figure 1. It is the first of its sort in the adoption literature, proposing a general set of characteristics that explain and predict the possibility of innovation adoption. Its proposition implies that technology development, organizational conditions, business and organizational reconfiguration and industry environment (Kowath & Choon, 2001) influence adoption.

Figure 1: T-O-E Framework



The TOE framework is used for an organizational-level analysis as stated by Awa, Ojiabo, and Orokor (2017). The paradigm places a focus on high-level qualities such as the technical, organizational, and environmental surroundings, rather than on the specific behaviors of people inside firms. The TOE framework has had modest theoretical progress since its inception, despite its widespread application. According to Zhu and Kraemer (2005), the lack of advancement is because the TOE framework is "too broad" and provides a great deal of latitude for varying factors and metrics; therefore, there is little need to update the theory itself. According to Baker (2012), another key problem is that the hypothesis coincides "too well" with other technology adoption theories and does not offer an alternative explanation. Consequently, there is virtually little pressure to adjust the framework. Alam (2009) as well as Ismail and Ali (2013) observed that the majority of research on organizational technology adoption is grounded in the theory of planned behavior (TPB), the technology acceptance model (TAM), the resource-based view theory (RBV), the diffusion of innovation (DOI), and the technology organization environment model (TEO). However wide these studies are, research undertaken at the organizational level is still scarce.

This research attempts to close a significant gap in previous studies. Based on a comprehensive literature review, this research would determine that the TOE framework is a sound paradigm for analyzing the determinants influencing the adoption of green practices in PPD. The factors delineated in this study namely technological (relative advantages, compatibility and complexity), organizational (organizational support and quality of human resources) as well and environmental (governmental support and environmental uncertainty), are significant enough to influence the organization's green practices adoption.

Organizational Factors and Green Practice Adoption: Many businesses strive to integrate a variety of green practices to improve their environmental performance. According to Suryanto, Haseeb and Hartani (2018), the execution of organizational innovation, particularly in the environmental system, is an important component of management. Applying environmental standards to business operations necessitates experimenting with new resource combinations and repurposing old resources. Firm executives have recognized that green practices are a critical component of long-term development and can provide a competitive edge for the organization (Song & Yu, 2018). Organizational factors may also be referred to as internal factors, implying that the drive for green activities stems from a feeling of environmental responsibility (Ibrahim et al., 2018). Additionally, these variables are linked to the characteristics of the business, such as financial resources available and management focus on green practices adoption.

Organizations with well-educated human capital have a greater chance of responding to technological change.

Many researchers have drawn parallels both total quality management (TQM) and environmental management (EM), for example, in terms of the necessity for an organizational environment that embraces green adoption (Li, Ye, Dai, Zhao & Sheu, 2019). Thus, green practice adoption, like the application of other types of innovation, is a multi-stage process that includes initiation activities, managerial decisions to embrace green practices, and infusion activities (Ho, Lin, & Tsai, 2014). As a consequence, organizational support and the quality of human resources may affect the firm's adoption of green practices (Mohd Rizaimy, 2018).

a) Organizational Support: The term organizational support refers to the degree to which a business encourages its workers to follow green habits via the use of a particular technology or system (Mohd Rizaimy et al., 2018). Additionally, by providing incentives for innovation adoption and guaranteeing the availability of financial and technical resources for innovation, we may help encourage technological innovation adoption (Lee et al., 2005; Jeyaraj et al., 2006). Likewise, organizational support is defined as workers' views of the organization's value and care for them, as well as proof that it is improving internal relationships.

In terms of organizational support, the top management in an organization plays a vital role. Several departments and divisions have to cooperate and coordinate the implementation of numerous green practices. The top management usually supports and encourages green projects to guarantee success (Lin & Ho, 2011). Apart from that, senior management's main duty is to acquire and effectively manage resources for the business to implement green practices. Employees feel secure and confident at work when they believe they have the backing of the company (Lee, 2008). As a consequence, organizational support may both inspire and help workers in implementing green ideas (Acharya, 2013). This is corroborated by Ho, Lin, and Tsai (2014), who found that many companies have adopted green practices in their work environments with the organization's assistance.

Furthermore, Christmann (2000) stated that implementing green practices is a complicated process requiring cross-disciplinary cooperation and significant modifications to current operations. Employees with a high learning capacity will find it easy to engage in training programs that encourage the adoption of green practices. As a result, businesses with excellent human resource skills will be much more likely to effectively implement a green strategy (Christmann, 2000). Ibrahim et al. (2018) stated that adopting green technology would benefit companies with trained people, which will ultimately aid them in implementing successful green practices across the company. Consequently, the following hypothesis was developed.
H1: Organizational support positively influences green practice adoption

Green Practice Benefits and Green Practice Adoption: Adopting green practice usually relates to achieving multiple dimensions of sustainability. Implementing green practices is the actions that individuals and organizations take to reduce their impact on the environment. To adopt green practices, organizations may need to invest in new technology, equipment, or infrastructure. However, these investments can often pay for themselves over time through cost savings and improved efficiency. As stated in the literature by Konietzko et al., (2020), adopting green practices significantly reduces harmful emissions and waste, thus helping organizations enhances ecological performance. Furthermore, according to Premaratna et al., (2021), the adoption of green practices provides green benefits to the environment, financial and operational, improve the health and the conditions of employees and reduce safety risks. Moreover, in the same article, the researchers mentioned that green practice adoption decisions always have a link with costs and benefits. This implies that knowing and realizing the importance of green practice benefits is expected to be able to do greater things. As a result of these observations, the following hypothesis was formed:
H2: Green practice benefits positively influence green practice adoption

Governmental Support and Green Practice Adoption: Environmental considerations relate to the external environment in which a firm operates. Environmental factors also affect the spread of new technology and its uses, regardless of organizational or institutional factors (Assimakopoulos & Wu, 2010). The components of governmental support and environmental uncertainty were found to be often utilized in many researches. As a result, the variables are appropriate for use in this research (Lin & Ho, 2011). The green industry has made significant progress with government aid, but there is still a lot of opportunity for it to grow in the long run, and it requires special attention from managers and decision-makers to make a greater contribution to

society and the economy (Chen, Chen, Xu, Liu, & Niu, 2017). The availability of external resources will influence the adoption of green practices.

b) Governmental Support: Governmental support has aided the company's adoption of green practices significantly. The former may take a variety of forms, including providing subsidies or tax credits to businesses that take steps to reduce environmental hazards and enhance environmental standards throughout the country's sectors (Mohd Rizaimy et al., 2018). According to Lee (2008), government assistance has a major effect on companies' willingness to engage in green projects. Shaharudin, Govindan, Zailani, and Tan (2015) stated that the government's environmental regulations have compelled businesses to use green processes for reverse operations. Thus, this study anticipates that government assistance will have a beneficial effect on organizational adoption of green practices. Consequently, the following hypothesis was constructed.
H3: Governmental support positively influences green practice adoption

Technological Factors and Green Practices Adoption
Technological factors include current technologies and technical abilities as well as emerging technologies within the company making them important to the business. Technology may be seen as a source of data. According to Ibrahim et al. (2018), technology, more often referred to as automated devices or systems, is a word used in the business sector to refer to automated equipment or procedures that may accelerate the completion of a job. It is often used in business to facilitate the exchange of information in the companies. However, Ibrahim et al. (2018) added that technological factors that influence the adoption of green practices are rarely studied. Thus, the compatibility and complexity of the performance that a business seeks to achieve via green practices are referred to as technical considerations. Besides, the type of technology employed in the organization may affect employees' perception of green practice benefits and this will lead to green practice adoption.

c) Compatibility: Compatibility means that the practices that should be implemented are congruent with the organization's current activities, which encourages the business to integrate them into its operations (Ibrahim et al., 2018). According to Rogers (2003), compatibility refers to the degree to which an innovation is seen to befit the business's current values, experiences, and requirements. Based on this, the employees value the benefits of green practices more. Ho and Lin (2012) discovered that compatibility affects attitudes toward green management techniques in Taiwanese logistics companies. This is backed up by Etzion (2007), who claimed that the higher an innovation's perceived compatibility, the larger the potential for environmental effectiveness. Additionally, Ozaki (2011) emphasized that compatibility seems to have a significant effect on users' intent to adopt new technology, especially green processes, in their companies. Compatibility is also critical for green practice uptake (Lin & Ho, 2011). Adopting green practices is not a one-time event, but rather a process of knowledge gathering and integration, since many green practices are enhancements to existing technologies and processes in businesses. Additionally, green practices will be more readily adopted inside an organization when they are consistent with the organization's existing technology and procedures. As a consequence of this, the following hypotheses were developed:
H4: Compatibility of technology positively influences green practice benefits
H4(a): Green practice benefits will mediate the relationship between compatibility and green practice adoption

d) Complexity: Complexity is defined as the degree to which an invention is deemed difficult to comprehend and use. It will impede knowledge transfer and innovation dissemination and is widely believed to be detrimental to innovation uptake. Green activities include both tacit and explicit knowledge, which will complicate the process of acquiring and sharing tacit technical knowledge as a result of sophisticated technology (Ho & Lin, 2012). Hence, a situation of this nature creates a hindrance to elevating performance. Rogers (2003) suggested that complexity may impede the transmission of information and dissemination of innovation. According to Mohd Rizaimy et al. (2018), adopting green practices is complicated since it entails a variety of processes that must be understood and altered. For instance, the greater the complexity of green practices, the more difficult it is to embrace new and creative green practices. Green practices are considerably simpler to adopt in a company if the process is simple and practical. As a consequence of these findings, the following hypotheses were developed:

H5: Complexity of the technology positively influences green practice adoption
H5(a): Green practice benefits will mediate the relationship between complexity and green practice adoption

Environmental Uncertainty and Green Practices Adoption: The most significant element affecting a firm's decision-making has been found as environmental unpredictability (Li & Atuahene-Gima, 2002). It is a term that relates to managers' perceptions of rapid and unexpected changes in client needs, technological development, and competitive activity. Lin and Ho (2011) defined environmental uncertainty as challenges in market competition that are parallel to changes in green technology advances. Hence, this has compelled managers to be proactive and creative to improve performance in uncertain circumstances. Environmental uncertainty has pushed businesses to embrace green practices such as green buying, internal management, and logistics (Lo & Shiah, 2016). When there is a great deal of uncertainty, businesses attempt to collect and analyze information often and rapidly to handle environmental changes (Gupta & Govindrajan, 1991). According to Ibrahim et al. (2018), when environmental uncertainty exists, businesses are required to implement environmental innovations to create the ability to enhance environmental performance in uncertain settings. To maintain competitiveness and survival, firms must use additional environmental measures to reduce market unpredictability. As a consequence of this, the following hypotheses were developed.
H6: Environmental uncertainty positively influences green practice adoption
H6(a): Green practice benefits will mediate the relationship between environmental uncertainty and green practice adoption

Research Framework: The literature has several theories for the variables that influence innovation (Lin & Ho, 2010). While some academics have examined green practice adoption through the lens of technology innovation, little empirical research has examined the combined effects of technological, organizational, and environmental variables. The components under discussion are drawn from several related ideas, hence grouped into a comprehensive explanation of the Technology-Organization-Environment (TOE) framework. Tornatzky and Fleischer (1990) developed the TOE framework to explain technology adoption in organizations and to illustrate how the process of adopting and implementing technological advances is affected by the technical, organizational, and environmental contexts. According to Awa, Ojiabo, and Orokor (2017), the TOE framework is used to analyze organizations at the organizational level. The paradigm places a premium on high-level characteristics such as the technical, organizational, and environmental contexts, rather than on specific actions of people inside companies.

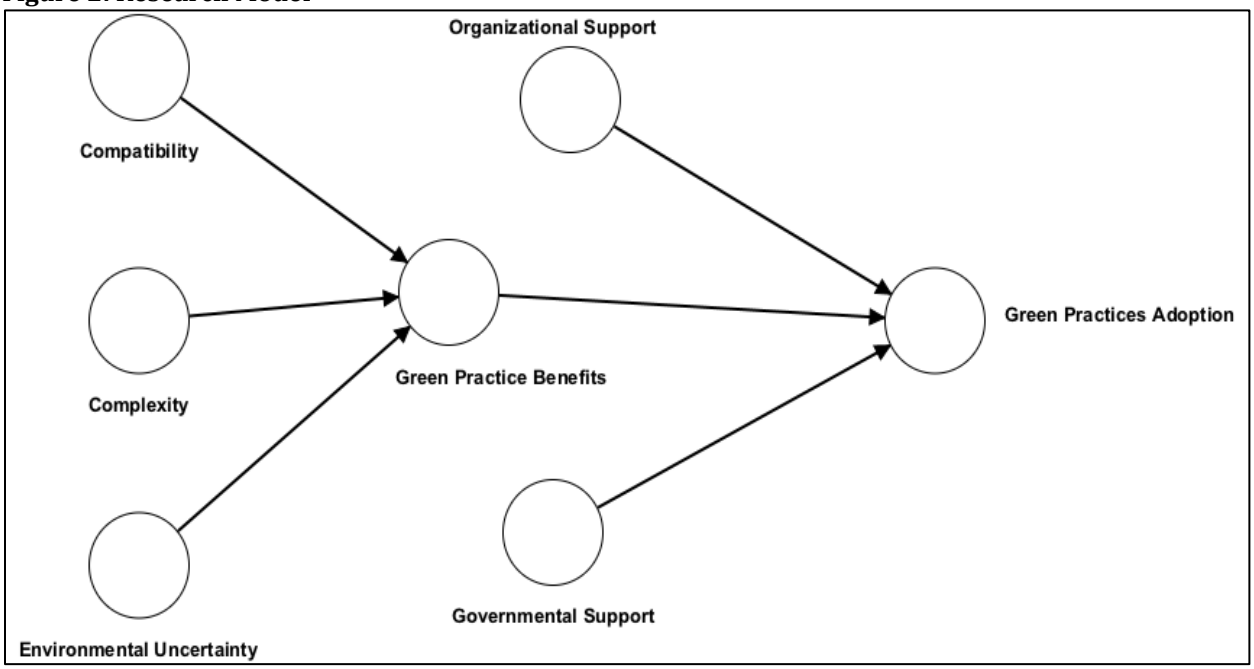
The purpose of this research is to ascertain the fundamental variables that influence an organization's decision to embrace green practices. According to a researcher's observation (Alam, 2009; Ismail & Ali, 2013), the majority of research on organizational technology adoption is based on the theory of planned behavior (TPB), the technology acceptance model (TAM), the resource-based view theory (RBV), diffusion of innovation (DOI), and the technology organization environment model (TOE). However, there is less research conducted at the organizational level. This research attempts to close a significant gap in previous research. After a thorough assessment of the literature, this research determined that the TOE framework is an appropriate paradigm for studying the variables affecting the adoption of green practices in PPD. Numerous studies have utilized the TOE framework to examine the effect of innovation and the uptake of green practices. For example, Lin and Ho (2008) utilized the TOE framework to examine the adoption of green practices in Taiwan's logistics sector. Besides, Weng and Lin (2011) investigated green innovation uptake in China's SME sector. Numerous research studies have shown that combining the TOE framework with additional theories helps to better explain technology adoption (Alatawi et al., 2012).

According to Rogers (2003), the rate of adoption of an invention is determined by five qualities as viewed by members of a social system. Relative advantage, compatibility, complexity, trialability, and observability are five characteristics of innovation. Additionally, the TOE paradigm is compatible with Roger's (1983) theory of diffusion of innovation (DOI). The DOI theory examines adoption choices through the rationalistic lens of strategic choice, to enhance organizational efficiency and performance (Midgley & Dowling, 1993). This theory explains how, why, and at what pace new ideas and technologies spread across cultures, with implications for both individuals and firms (Oliveira & Martins, 2011). In the context of green practice adoption, this study examines just three DOI theory characteristics: relative benefits, compatibility, and

complexity. Additionally, it was shown that relative benefits, compatibility, and complexity have consistent correlations with innovative behaviors (Oliveira & Martins, 2011).

The research model suggested in this work is shown in Figure 2. It is an adaption of the TOE theory and a synthesis of the DOI theory. Based on the review of the literature, this study hypothesized that technological factors (compatibility, complexity), organizational factors (organizational support), environmental factors (governmental support, environmental uncertainty), and green practices benefits could all influence the adoption of green practices by employees. According to Alatawi et al. (2012), the company's processes and procedures can only operate effectively if they are linked with certain related characteristics that may assist the firm in achieving high performance. Firms must identify which variables are most likely to influence the adoption of green practices and, ultimately, the firm's success in this situation.

Figure 2: Research Model



3. Methodology

The target respondents for this study were employees at Politeknik Port Dickson, Malaysia. In identifying the right respondents for the study, a purposive sampling technique was used. This sampling technique helps the researchers to choose the representative sample to represent the entire population. GPower calculation software was used to calculate the minimum sample size. Since the model had a maximum of three predictors (Figure 1) with the effect size as small (0.15) and the power needed as 0.95, the minimum sample size required was approximately 119. Based on this calculation, the total of 119 data collected was fulfilled for the study. The online survey using the questionnaire was via Google Forms and the URL link was shared via email and WhatsApp group. For ethical considerations, several issues have been considered, including the statement of confidentiality and informed consent for participants. The analysis of the study began with analyzing the profile of the respondents using IBM Statistical Package for Social Sciences (SPSS) version 26. The IBM SPSS was also used for data cleaning and normality testing. For model assessment, Partial Least Square-Structural Equation Modelling (PLS-SEM) version 4.0.8 was used to test the measurement model and structural model of the study, discussed in the next section.

To detect common method bias, the researchers used the Herman one-factor test in SPSS. If the variance in this test exceeds 50% of the threshold value, it indicates the presence of common method bias (Rodríguez-Ardura & Meseguer-Artola, 2020). However, in this study, the variance is only 22.23 percent, which is less than the 50 percent threshold, indicating that there is no common method bias. Moreover, the researchers

also ran a full collinearity assessment to test whether common method bias was a concern in this study as suggested by Kock and Lynn (2012). In doing that, a dummy variable was created using the random function in Excel; then, all the related constructs (including the dependent variable) were regressed in the research model against this common variable using SmartPLS.

4. Results

The survey was self-administered, prepared in Google Forms, and distributed online via WhatsApp groups and emailed to all Politeknik Port Dickson employees. Meanwhile, the researchers also sent private invitations to participate in the survey. For this study, the total population of employees in PPD was 575 and the total adequate minimum sample for this study was 103. However, there were 153 respondents responded to the questionnaires; greater than the minimum sample size required for this study as determined by G*Power analysis.

Table 1: Demographic Details

DEMOGRAPHIC VARIABLES		FREQUENCIES	PERCENTAGE
Gender	Male	61	39.9
	Female	92	60.1
Age	21-30 years old	11	7.2
	31-40 years old	65	42.5
	41-50 years old	60	39.2
	51years old above	17	11.1
Race	Malay	132	86.3
	Chinese	13	8.5
	Indian	8	5.2
Education	SPM	20	13.1
	Diploma	24	15.7
	Degree	78	51.0
	Master	27	17.6
	PhD	4	2.6
Years of Working	1-3 years	8	5.2
	4-6 years	8	5.2
	7-9 years	8	5.2
	10-12 years	23	15.0
	13-15 years	45	29.4
	16 years above	61	39.9

Total (n) = 153

Profile of Respondents: Table 1 shows that 60.1% (92 respondents) were female; while 39.9% (61 respondents) were male. It also shows that 42.5% (65 respondents) were between 31-40 years old, followed by 39.2% (60 respondents) who were aged between 41 and 50 years old. Another 11.1% (17 respondents) were 51 years old and above and the remaining 7.2% (11 respondents) were 21-30 years old. In terms of race, the majority of those who responded to the questionnaire were Malays, representing 86.3% (132 respondents), while the Chinese represented 8.5% (13 respondents). Indian race contributed the least 5.2%, (8 respondents). Most of the respondents had a degree as their highest education level at 51.0% of the total respondents, which constituted 78 respondents. It is followed by those with a Master's that constituted

17.6% (27 respondents) followed by Diploma holders 15.7% (23 respondents). Then, it is followed those with Sijil Pelajaran Malaysia constituted 13.1% (20 respondents) and those with Ph.D. constituted 2.6% (4 respondents).

In terms of working experience, most of the respondents were working for 16 years and above 39.9% of the total respondents which constituted 61 respondents. 29.4% (45 respondents) were working for 13-15 years, and 15.0% (23 respondents) were working for 10-12 years. Meanwhile, 5.2% (8 respondents) were working 1-3 years, 5.2% (8 respondents) were working 4-6 years and another 5.2% (8 respondents) were working 7-9 years. In terms of income, it was found that most respondents have an income in the M40 group from RM4,851-RM10,959 at 79.7% (122 respondents). Meanwhile, 14.4% (22 respondents) have an income in the B40 group of less than RM4,850 and 5.9% (9 respondents) in the T20 group with an income of more than RM10,959.

Measurement Model: The measurement model was tested to assess the loading of each item, construct reliability, convergence validity and discriminant validity (Hair et al., 2017). This technique is called confirmatory factor analysis (CFA). As shown in Table 2, the construct validity and reliability test results show composite reliabilities (CR) that exceeded the threshold value of 0.7. Meanwhile, the average variance extracted (AVE) for each construct was greater than 0.5; thus, the cut-off values ensure that at least 50% or more of the variances in the construct are explained by the set of indicators. The collected data have been verified for reliability by calculating Cronbach's Alpha (CA) and the value of CA for each construct was higher than 0.6, which is acceptable. The details of the construct's reliability and validity are presented in Table 2 and the results of the measurement model show that all the constructs are valid measures based on their parameter estimates and statistical significance (Hair et al., 2017).

Table 2: Construct Validity and Reliability

CONSTRUCTS	CA	CR	AVE
Compatibility	0.790	0.876	0.703
Complexity	0.751	0.861	0.678
Environmental Uncertainty	0.735	0.834	0.722
Governmental Support	0.735	0.833	0.633
Green Practice Benefits	0.653	0.812	0.591
Green Practices Adoption	0.797	0.868	0.625
Organizational Support	0.925	0.935	0.617

Table 3 shows all the items loading were higher than 0.6, except only one item to measure environmental uncertainty which is the loading score at 0.563. Most of the constructs score more than 0.3 of mean value, while standard deviation results are close to 1.0. Low standard deviation means (below 0.5) data are clustered around the mean (green practice adoption and green practices benefits), and high standard deviation (above 0.5) indicates data are more spread out (for other constructs). The kurtosis values for each construct are less than three indicating that data are more flat with a wide degree of dispersion. Meanwhile, the skewness values are between +-0.5 and +-1 which represent moderate skewness. However, the skewness value for green practices adoption and green practices benefit is greater than -1 indicating that the data shape is a high degree of skewness. The overall results are presented in Table 3.

Table 3: Item's Loading and Descriptive Analysis

Constructs	Items	Loadings	Mean	Std Dev	Kurtosis	Skewness
Green Practices Adoption	I recommend that our organization adopt green practices.	0.714	4.331	0.518	2.889	-1.197

Constructs	Items	Loadings	Mean	Std Dev	Kurtosis	Skewness
	I recommend that our organization conducts environmental assessments of reporting green practices.	0.812				
	I recommend that our organization follow environmental governance at the national level.	0.739				
	I recommend that our organization should have a legal and regulatory compliance unit related to green practices.	0.884				
	The green practices are compatible with our organization.	0.850				
Compatibility	The green practices are consistent with our organization's values.	0.939	3.711	0.811	-0.099	-0.388
	Integrating green practices with the organization's existing system is easy.	0.683				
	Understanding green practices is difficult.	0.889				
Complexity	Learning green practices is difficult.	0.915	2.536	0.938	-0.345	0.415
	Sharing the knowledge of green practices is difficult.	0.636				
	The advances in green technology in organizations happen quickly and are hard to accept.	0.799				
Environmental Uncertainty	Environmental regulation for green practices will affect the organization's operation.	0.954	2.347	0.988	-0.516	0.569
	The government provides financial support for adopting green practices.	0.563				
Governmental Support	The government provides technical assistance for adopting green practices.	0.859	3.576	0.853	0.710	-0.737
	The government helps train manpower with green skills in organizations.	0.914				
	Top management provides acceptable green technology-related training to employees that can help employees learn new technologies easily.	0.852				
Organizational Support	Top management provides employees with a suitable platform for sharing knowledge.	0.859	3.903	0.764	0.119	-0.956

Constructs	Items	Loadings	Mean	Std Dev	Kurtosis	Skewness
Green Practice Benefits	Top management can help employees deal with environmental issues.	0.633	4.593	0.421	1.674	-1.128
	Top management allows employees to use new technologies to solve problems easily.	0.877				
	Top management provides opportunities for employees to contribute new ideas to the organization.	0.878				
	Our organization provides resources for employees to learn green knowledge.	0.762				
	Our organization provides a code of environmental ethics and standards for green practice.	0.601				
	Our organization provides resources to deal with environmental issues.	0.783				
	Green practices can provide better environmental performance.	0.701				
	Green practices can provide higher economic benefits.	0.838				
	Green practices can enhance our organization's reputation.	0.761				

This study has also run the discriminant validity testing by using the Heterotrait-Monotrait ratio (HTMT) criterion suggested by Henseler et al. (2015). They reiterated that if the ratios were lower than $HTMT_{0.85}$, then the conclusion could be made that all measures were discriminant. Moreover, based on Franke and Sarstedt (2019), if the upper limit of the HTMT bootstrapping value does not contain a 1, then the measures are discriminant. As shown in Table 4, all the ratios are below a cut-off value of 0.85; as such, the measures are distinct.

Table 4: Discriminant Validity: HTMT

CONSTRUCTS	1	2	3	4	5	6	7
(1) Compatibility	1.000						
(2) Complexity	0.152	1.000					
(3) Environmental Uncertainty	0.222	0.626	1.000				
(4) Governmental Support	0.388	0.285	0.300	1.000			
(5) Green Practice Benefits	0.586	0.243	0.163	0.225	1.000		
(6) Green Practices Adoption	0.216	0.276	0.239	0.228	0.475	1.000	
(7) Organizational Support	0.232	0.194	0.155	0.597	0.140	0.242	1.000

To ensure that the data have no multicollinearity issue, this study performed correlation analysis and computed variance inflation factor (VIF). The r-correlation values (Table 5) between the variables are less than 7. Meanwhile, the VIF results shown in Table 6 indicated that no serious concern was present as the VIF values were all below the threshold of 3.3.

Table 5: Correlation Analysis

CONSTRUCTS	1	2	3	4	5	6	7
(1) Compatibility	1	-0.073	0.156	0.196	0.437	0.174	0.151
(2) Complexity	-0.073	1	0.45	-0.163	-0.158	-0.206	-0.01
(3) Environmental Uncertainty	0.156	0.45	1	0.14	0.143	-0.079	-0.016
(4) Governmental Support	0.196	-0.163	0.14	1	0.118	0.195	0.544
(5) Green Practice Benefits	0.437	-0.158	0.143	0.118	1	0.357	0.097
(6) Green Practices Adoption	0.174	-0.206	-0.079	0.195	0.357	1	0.234
(7) Organizational Support	0.151	-0.01	-0.016	0.544	0.097	0.234	1

Table 6: Collinearity Statistics (VIF)

CONSTRUCTS	VIF
Compatibility	1.053
Complexity	1.287
Environmental Uncertainty	1.313
Governmental Support	1.429
Green Practice Benefits	1.016
Organizational Support	1.423

Structural Model: The structural model was tested by assessing the significance and magnitude of the hypothesized relationships using a bootstrapping procedure. As suggested by Hair et al. (2019), the path coefficient, t-values, p-values, and standard errors were reported for the structural model using a 5000-sample re-sample bootstrapping procedure. Additionally, Hahn and Ang (2017) argued that p-values are not a good criterion for testing the significance of a hypothesis and many PLS experts suggested using a combination of criteria such as p-values, confidence intervals, and effect sizes. Table 7 shows a summary of the criteria used to test the hypotheses developed. For measuring the effect size, this study used guidelines by Cohen (1988), whereby the values of 0.02, 0.15 and 0.35 represent small, medium and large effects, respectively.

All the indicated T-O-E dimensions explained about 17.1% of the variance in green practice adoption. Meanwhile, compatibility, complexity and environmental uncertainty explained about 23% of the variance in green practice benefits. The analysis also found that green practice benefits (β = 0.333, t-value = 3.343***, f^2 = 0.132) were the predictors that most positively influenced green practice adoption while organizational and governmental support was insignificant. Compatibility is shown to have a dominant direct effect on green practice benefits (β = 0.395, t-value = 6.269***, f^2 = 0.192), while complexity negatively influences green practice benefits (β = -0.2085, t-value = 2.122**, f^2 = 0.044). Thus, H2, H4 and H5 were supported with a small ll effect size on the indicated outcome. In this study, H1, H3 and H6 were rejected.

The mediating effect and level of significance were measured using the t-value and the differences in the confidence interval. The results of the mediation analysis shown in Table 7 reveal that green practice benefits only mediated two relationships in the model. Green practice benefits mediated the relationships of compatibility (β = 0.131, t-values = 2.740***) and complexity (β = 0.069, t-values = 1.783*) on green practice adoption. Therefore, H7 and H8 were supported while H9 was rejected. The details of the result are shown in Table 7 and Figure 3.

Table 7: Hypothesis Testing

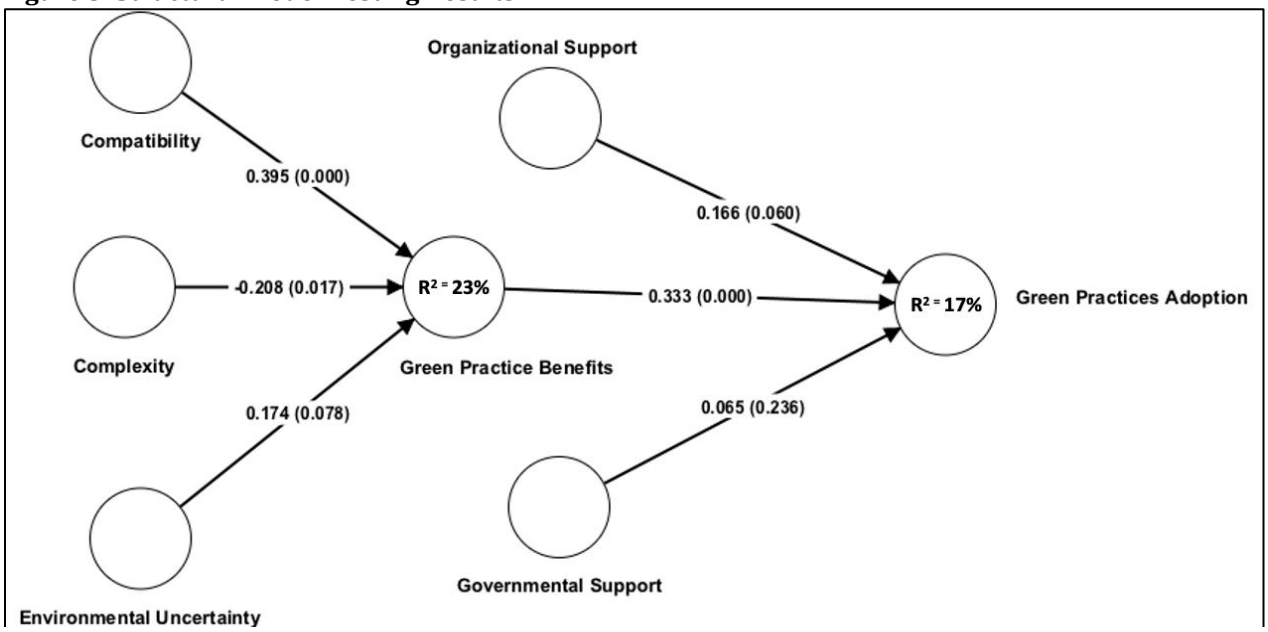
Dependent Variables	R^2
Green Practice Benefits	0.230
Green Practices Adoption	0.171

Table 7a: Hypothesis Testing

Hypothesis	Direct Relationship	*Beta*	Std Dev	T-values	P-Values	5.00%	95.00 %	f^2	Results
H1	Organizational Support -> Green Practices Adoption	0.166	0.107	1.558	0.060	-0.326	0.260	0.023	Not Supported
H2	**Green Practice Benefits -> Green Practices Adoption**	**0.333**	**0.100**	**3.343**	**0.000**	**0.158**	**0.477**	**0.132**	**Supported**
H3	Governmental Support -> Green Practices Adoption	0.065	0.091	0.718	0.236	-0.098	0.200	0.004	Not Supported
H4	**Compatibility -> Green Practice Benefits**	**0.395**	**0.063**	**6.269**	**0.000**	**0.270**	**0.481**	**0.192**	**Supported**
H5	**Complexity -> Green Practice Benefits**	**-0.208**	**0.098**	**2.122**	**0.017**	**-0.349**	**-0.033**	**0.044**	**Supported**
H6	Environmental Uncertainty -> Green Practice Benefits	0.174	0.123	1.420	0.078	-0.136	0.303	0.030	Not Supported

Hypothesis	Indirect Relationship (Mediating Effect of Green Practice Benefits)	Beta	Std Dev	T-Values	P-Values	5.00%	95.00 %		Results
H4(a)	**Compatibility -> Green Practice Benefits -> Green Practices Adoption**	**0.131**	**0.048**	**2.740**	**0.003**	**0.056**	**0.213**		**Supported**
H5(a)	**Complexity -> Green Practice Benefits -> Green Practices Adoption**	**-0.069**	**0.039**	**1.783**	**0.037**	**-0.142**	**-0.015**		**Supported**
H6(a)	Environmental Uncertainty -> Green Practice Benefits -> Green Practices Adoption	0.058	0.044	1.313	0.095	-0.012	0.131		Not Supported

Figure 3: Structural Model Testing Results



Discussion: The analysis of our research data has demonstrated that all the constructs used in this study can be considered valid measures. This conclusion is drawn from the parameter estimates and the statistical significance associated with these constructs. It confirms that the chosen variables accurately capture the intended aspects of the study. The results of hypothesis testing offer important insights into the connections between various elements in the context of green practices. Notably, the results imply that the advantages of adopting green practices do have a considerable impact on adoption. This result emphasizes how crucial it is to highlight the advantages and benefits of sustainable and environmentally friendly practices as a means of promoting their adoption. According to the current investigation, organizational and governmental support has no statistically significant effect on whether or not green practices are adopted. This may come as a surprise, but it implies that other variables are more important in motivating green activities within organizations. The precise obstacles or difficulties that limit the effectiveness of support from these entities could be explored in further detail.

The impact of technological elements on the adoption of green practices is also examined in this study. In particular, the study's findings show that technology compatibility and complexity have a large direct impact on the advantages of green practice benefits. This demonstrates how crucial it is to take technology considerations into account when developing and putting into practice sustainability efforts. On the other hand, it was discovered that environmental uncertainty has less of an effect on the advantages of green practices benefits. This shows that factors other than the immediate environmental setting may have a more significant impact on how green practices are regarded to be advantageous. The complex relationship between environmental uncertainty and sustainability activities could be the subject of further study. The current study provides valuable insights into the factors influencing the adoption of green practices within organizations. These findings can guide decision-makers in crafting more effective strategies to promote sustainability and environmentally conscious practices. However, it's essential to acknowledge the limitations of this study, such as the specific context and sample size, which may influence the generalizability of these findings. Further research in this field is encouraged to gain a more comprehensive understanding of these complex relationships.

Managerial Implications and Recommendations: Six direct and indirect hypotheses, concentrating on organizational issues, environmental factors, technological factors, and the benefits of green practices as mediators have been addressed in this study. The outcome showed that technology's relative advantages had a substantial impact on the advantages of green practices. Using Roger's Diffusion of Innovation Model to assess Politeknik Port Dickson's (PPD) suitability for digital technology, it can be said that PPD is at the early

adopter stage. Early adopters are the second-fastest group of people to accept a new technology. The PPD's objective is to provide a curriculum that is driven by industry and improve graduation readiness through coordinated industry involvement; this statement is specifically intended for PPD (JPPKK, 2020). PPD is one of the educational institutions that use technology to help students get ready for the demands of the industry. Significantly, PPD frequently implements green practices due to the comparative benefits they experience, which may eventually enhance their environmental performance.

This study found that employees' opinions of the advantages of green practices are greatly influenced by technical compatibility and complexity. Even though PPD is one of the educational institutions working towards employing the most up-to-date technology for activities, the majority of staff still finds it challenging to implement green practices because the technology is quite limited and does not assist them. In addition, it has been asserted that the green practice procedure does not work well with PPD's current system. Additionally, this study discovered that if workers see the advantages of green practices, the link increases in technical compatibility and complexity as well as the adoption of green practices. The management of PPD must therefore offer green practices training to increase employee understanding of the advantages of using green practices, hence encouraging adoption. For technological environmental uncertainty, the result revealed that the relationship between this construct and green practice benefits was not significant, and the hypothesis is not supported. In this case, employees in PPD did not perceive environmental uncertainty as the factor that influenced their perception of green practice benefits. This is because employees at PPD are still in the early stages of awareness and the basic implementation of the adoption of green practices. Therefore, they are not completely experiencing the issues of environmental uncertainty in the existing process. However, this factor needs to be further analyzed for a better understanding of the reasons behind the non-significant effects.

About the adoption of green practices, this study discovered that government support did not have a substantial impact. Companies must offer enough resources, incentives, encouragement, and inspiration from the top management to ensure that all employees adopt green practices in PPD (Irwan et al., 2019). Employee buy-in is essential to the success of the implementation of green practices. Adopting green practices necessitates in terms of values in human resource capabilities and competencies. Since green practices are still in their infancy, there will undoubtedly be more labor involved than in the existing approach. Many tasks and jobs related to green processes were accelerated quickly because of the quality of the employees, which included traits like inventiveness and problem-solving abilities. The implementation of green practices will be more successful if human resources are competent (Ho & Lin, 2012). This boosts the organization's attitude towards environmental activities. Government support has not been shown to have a substantial impact on the adoption of green practices. To conduct the savings program at PPD, including funding, it was required to utilize existing resources and efforts since PPD is most likely a government-affiliated institution under the Ministry of Higher Education. According to Garis Panduan Penjimatan Perbelanjaan Awam, 2022, internal savings must be implemented by the ministry, department, agency and federal statutory body to ensure that all expenditures are compliant with the guidelines and rules for financial management established by the Ministry of Finance (MOF) from time to time. Not all equipment, resources, or technology linked to going green can be purchased by PPD without government approval. This is because each transaction must have approval from the government.

5. Conclusion

To improve the findings about the impact of the independent variables, specifically, the technological component, organizational factor, environmental factor, and green practice benefits, on the adoption of green practices, several ideas and recommendations may be applied to this research. The fundamental suggestion is that every employee takes responsibility for their activities for an organization to implement green practices. When a person is aware of the damage that can result from ignoring environmentally friendly practices, their sense of responsibility grows. Employees who incorporate green practices into daily routines for doing jobs should therefore receive increased exposure to and coaching on the adoption of these practices. It may then be suggested that the organization form a team or group to adopt green technology and practices. This committee's creation will enable it to guide the business towards greater environmental responsibility. To raise morale and promote wider adoption, the organization's higher management could offer rewards to

workers who adopt this ecologically friendly approach. This is because implementing a green practice requires a lot of work and sacrifice on the part of the employee. Organizations must, among other things, offer pertinent training to staff to help them comprehend and quickly adopt green practices within the company. To hold seminars on applying green practices for all staff, organizations can work with GreenTech Malaysia and the Malaysian Ministry of Energy, Water, and the Environment (KeTTHA). The outcomes would be astounding if every organization started to implement green practices. Only two of the many advantages are money and energy.

The government should intensify its effort to inform the people about the value of adopting green practices by spreading information through a range of avenues, including the media, the radio, the television, and even exhibitions. Such initiatives should be stepped up nationwide to make people aware of the significant benefits of adopting green practices for themselves, their organizations, and most importantly the environment. To achieve Malaysia's goal of achieving the Sustainable Development Goals (SDG 13: Climate Action) in 2035, the government also needs to step up the implementation of the Green Technology and Sustainable Development Policy at the national and state levels. Therefore, through education and awareness campaigns as well as by boosting essential institutional and human capacity, the government needs to step up efforts towards early warning, readiness, mitigation, and adaptation to climate change. Finally, it should be encouraged from an early age to embrace green practices and participate in this awareness drive. The individual is not the only one with this insight. Every person, every organization, every government agency, every business, every non-profit, and the media are included in this. Due to this, it is our responsibility to raise awareness of environmentally friendly practices for the benefit of the planet's sustainability and those of all living things.

The researchers are obligated to conduct this study to plan when to look into the research on the adoption of green practices. About this study, future researchers need to identify other factors and traits that might encourage people to adopt green practices. To identify the variables that affect green practices, the researcher also needs to assess the organization's situation. For instance, it is challenging to identify any important technology for the adoption of green practices. Furthermore, the bulk of government organizations do not exploit systems or technology to their fullest degree. The study expects that these suggestions might give future academics insights into the elements that affect whether green practices are adopted by public or private businesses.

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