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EXTENDING THE NORM ACTIVATION MODEL FOR EXPLORING PRO-ENVIRONMENTAL BEHAVIOUR IN HEALTHCARE SECTOR

By

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Abstract

Purpose: The healthcare system that happens to be the largest contributor of biomedical waste seem to be struggling into pursuing a completely pro-environment agenda due to the nature of its operations. Accordingly, there is lacking in research pertaining to the aspect of pro-environmental behaviour (PEB) among healthcare workers. To gain a better understanding of the determinants of PEB among healthcare employees, this study aims to examine the impact of the Norm Activation Model (NAM) components, specifically Awareness of Consequences (AC), Ascription of Responsibility (AR), and an individual's viable Personal Norms (PN), alongside the effect of Mass Media Exposure (MM), and perceptions of Green Work Climate (GC) on PEB.

Design/methodology/approach: In fostering environmentally sustainable work behaviour within the healthcare sector, the partial least squares structural equation modelling (PLS- SEM) has been utilised to analyse the data collected from 200 respondents working in all avenues of healthcare practices spread around Malaysia through purposive sampling.

Findings: Results revealed that PEB can indeed be fostered via exploring the components of the NAM, and GC does pose a positive moderating effect in strengthening the relationship between PN and PEB amongst healthcare employees. However, mass media exposure fails to instigate awareness which in turn leads to a domino effect of not being able to evoke PEB amongst healthcare workers.

Research limitations/Implications: Understanding how AC, AR, PN as psychological factors and mass media exposure acting as an environmental stimulus can influence PEB in healthcare employees offer actionable insights. These insights may inform the development of targeted interventions or training programmes aiming to enhance environmental consciousness and sustainable practices within healthcare settings.

Practical Implications: Findings of this study aid healthcare practitioners in implementing strategies to encourage sustainable behaviour upon their work practice. The strategy mayinvolve fostering a supportive green work climate or integrating sustainability practices into daily routines.

Value/Originality: This study contributes to the nuances of a sector specific research in this environmental positive behaviour attributed to this concept of extended NAM. This study also gauges positive behavioural conditioning and affirmation as a basis to extend an environmentally sustainable healthcare practice. This study could be a pioneer in engineering a criterion to promote green hiring in the healthcare sector.

Keywords: Pro-environmental behaviour, Norm Activation Model, mass media exposure, green work climate, healthcare.

1. Introduction

The world is literally crying for help with its ever-evolving climate changes and destruction of nature. Causes of the daunting climate change and erosion of environment is nobody's fault but the human species themselves (Nandhikkara, 2022). Increasing health issues following the environmental decline has been imposing much demand from the operation of the healthcare system. Medical doctors and healthcare personnel toil their way into preserving and improving health of the general public that has been tainted by the worsening environmental pollution. However, the irony of this matter is, healthcare industry happens to be on the front-tier contributor towards natural resource depletion, mass producers of biohazard waste and a significant agent of changing the frontier of environmental sustainability (Jamerton & Pierec 2001).

Sustainability has become a pro-environmental term that has become a mandatory manifesto of almost all the industries in the world. This pro-environmentalism notion has been growing to become more significant amongst every trade and industry line globally (Ardito et al.,
2019). Many companies and organisations have incorporated the Pro-Green anecdote into the way they do business (Kar & Praharaj, 2017). South Korea has emerged as a nation that takes pride in being the utmost pro-environmental organisations whereby every line of their pharmaceutical skincare regimes and healthcare equipment developments screams eco- friendly and pro-environment (Lee et al., 2018). Hence, million-dollar industries around theworld have been amending their ways of business into being more pro-environmental so that they would be able to

connect better with the current and upcoming generation that is somehow very much environmentally inclined (Forbes, 2021).

Hence in a growing world that stumps hard upon sustainability and green practices, how can the healthcare industry here in Malaysia particularly, being the major contributor of environmental pollution containing pathological, pharmaceutical, chemical, radioactive, and other wastes skew their practices in a way that is environmentally sustainable? Malaysia's healthcare industry has been undergoing a radical transformation since the 2000s in which certain states have been known to be hotspots of medical tourism. The Malaysian healthcare system consists of public and private institutions that operate to serve 40% and 60% of the country's population (Statista, 2021). So how can the healthcare organisations in Malaysia particularly foster pro-environmental practices amongst its personnel that could cumulatively transform our healthcare system to be more environmentally sustainable? The paramount factor of any environmental based approach in an organisation always culminates to the "human factor" (Jabbour et al., 2019). Therefore, the success of fostering and rejuvenating environmentally sustainable healthcare practices amongst employees or medical personnel in a healthcare organisation dominantly depends on the ability of the employee themselves to cultivate a greener work practice and environmentally positive behaviour.

Speaking about behaviour specifically targeted upon environment, the Norm Activation Model (NAM) (Schwartz, 1977) comes into sight, whereby NAM is a model that elaborates on the altruistic behaviour and the individual towards the environment (Palmer, 2022). Where most people prefer to stay in and ideal clean environment, there are certain vices and negative urges to act in an environmentally unfriendly ways, because the root cause of any environmental issue when pinpointed are always and almost always associated with the lifestyle of individuals. Thus, in order to create an idealistic and clean environment, it is pertinent to comprehend people's decision-making process that could affect the environment in a negative manner. Furthermore, many researchers and analysts who are inclined in the matter of corporate environmental sustainability in regards to organisational corporate social responsibilities have recently voiced out the necessity to encourage pro-environmental behaviour in the workplace (Grilli & Curtis, 2021).The employee's green work climate insights can identify the connection between the presence of an organisational sustainability policy and pro environmental behaviour (Ramus
& Steger, 2000). Former environmental studies have proved that mass media exposure is viable in promoting public's pro-environmental behaviour by evoking their concerns and awareness regarding environmental issues (Ando et al., 2021; Holbert et al., 2003; Östman,
2013; Trivedi et al., 2018). Hence, this paper aims to study the effect of the NAM in exploring the pro-environmental behaviour (PEB) amongst healthcare workers which could be moderated by the fundamentals of a green working climate along with the influences of mass media exposure.

2. Theoretical Bases and Hypotheses Development

In prelude, there is a lack in healthcare-sector specific studies towards fostering PEB amongst healthcare especially in the Malaysian setting. As noted, very limited papers have been about discussing the effect psychological and strategic factors into fostering PEB in healthcare organisations (Mateen et al., 2022). There were quite a number of studies which actually incorporated the NAM into expressing PEB amongst individuals or a set of employees of an organisation, but no specific studies have actually merged the NAM into advocating PEB amongst healthcare workers or within the health sectors in scrutiny. The Norm Activation Model (NAM) was introduced by Schwartz in 1977 that is a vested model that explains altruistic and environmentally friendly behaviour that is based on personal attributes. The NAM suggests there are two factors which affects the provocation of an individual's personal norms, which in return encourage altruistic or environmentally concerned behaviour (Thogersen, 2006). The dui-factors of NAM are Awareness of Consequences (AC) and Ascription of Responsibility (AR). These items as independent variables are discussed below. Previous research implemented these constructs on different levels of specificity and sensitivity. Some studies utilized specific items such as energy use items (de Groot & Steg,
2009).

Onwezen et al. (2013) transcribes that positive self-conscious emotions such as Awareness and Responsibility does support the reasoning whereby the individual personal norms in relation towards the environment which in return would guide behavioural choices an individual makes towards the environment. Wang et al. (2022) connotes personal norms are the key factors in establishing PEB amongst employees of an organisation. This paper alsodiscusses the effect of mass media in integrating the NAM into moulding a specific set of behaviour. Norton et al. (2012) testimonies via their study that positive relationship between green work climate and environmental sustainability practices among employees do exist. Therefore, this study will act as a prodigal extension of the studies above, integrating each aspect which in turn would contribute towards a more nuanced aspect of investigating a targeted group of employees, here being healthcare workers using the NAM, assessing their personal attributes and analysing if the attributes can in fact showcase an effect towards a more environmentally sustainable healthcare practice in Malaysia.

Constituents of NAM and Personal Norms (PN)

AC is where people being aware of the environmental issues caused by an individual act. That is, they should acknowledge that their routine actions actually directly or indirectly can affect the environment (Valkengoed et al., 2022). AR simultaneously depicts the self-induced accountability after developing awareness is followed by one's consideration into contributing actions to the environmental issues, hoping to create a solution for it (Nordlund
& Garvill, 2003). AC manages to evoke a proper AR response from an individual which in return aids in conjuring a PEB in an individual. Recent literary evidences does endorse that NAM is an effectual stimuli which directly and positively strategically impacts an individual's attitude as well as personal norms, which in turn directly propels their behavioural responses and navigate the consequences of their actions (Xuan et al., 2023).

In this study, both the NAM components of AC and AR are considered to positively evoke the practice of Personal Norms (PN) (Han et al., 2017) while the former also positively influencing the latter interdependently. In addition, individualism-based literatures pins down that introspective norms appeal act as stronger motivators compared to collective or social norms in instilling environmentally friendly intentions (Saracevic et al., 2022). Hence, the following hypotheses proposed:

H1: Awareness of Consequence poses a positive influence over Ascription of Responsibility

H2: Awareness of Consequence has a positive influence over Personal Norms

H3: Ascription of Responsibility has a positive influence over Personal Norms

PN and PEB

The key influencing component on fostering PEB could be gauged by investigating behavioural norms. Norms can be divided into personal and social norms. An individual's altruistic intentions can be scrutinized by a positive assessment of their behaviour or innate attitude, provided they are individuals with clear insights (De Leeuw et al., 2015; Chen et al.,

2016). DeGroot et al. (2009) argued that the effectiveness of social norms in promoting PEB is a cheap and convenient strategy. However, exploring personal norms would mean drilling into an individual's own moral compass which can be a stronger motivator to encourage pro- environmental intentions and sustainable behaviours (Schultz et al., 2016).

Multiple evidence from past research have strongly indicated that the stronger one's personal norm directed towards a PEB, the more fortified their intentions and behaviour related into materialising this norm and to act in an environmentally friendly manner (Aertens et al.,

2009). Thus, as the literatures emphasizes the positive influence of Personal Norms towards fostering PEB, thus proposing the hypothesis:

H4: Personal norms positively influence the premise of PEB

Mass Media Exposure (MM) and AC

Environmental comprehension is one of the most potent predictors of PEBs (Liu et al., 2020). It is unnatural for individuals to be consciously careful about environmental issues or self- righteously perform environmentally sustainable behaviours without being properly exposed to prevalent environmental problems (Gifford & Nilsson, 2019).

Moreover, many people manage to only obtain their fundamental information and grasp on environmental issues from the media. Mass media is a potent tool that provides important details of educational information for the public and aids to improve the knowledge and understanding of the society about environmental problems (Ballew et al., 2004).

Rising empirical evidence also proposes that media use has pertinent influence on people's attitudes, intentions which in return affect the way they behave towards the context of being pro-environment. Therefore, considering the importance and effect of environmental knowledge and the use of proper media exposure in environmental protection, especially with regards to individuals attached to the healthcare sector, this study attempted to investig ate the relationship between the variable of mass media use and their effects on the health careworkers awareness and intentions towards being more environmentally friendly in their work practices. Thus, the following hypothesis was proposed:

H5: Mass Media Exposure positively influences the Awareness of Consequences

Moderating role of Green Work Climate (GC) between PN and PEB

Betwixt the internalised norms and personal moral compass into realizing an individual's righteous and ethical obligation towards Mother Nature and the environment, a little external push can never be disregarded. Especially in an organisation where employee green behaviour is the fundamental basis in revolutionizing an organisation's macro level sustainable progress strategy into concrete practice.

Green work climate revolves around employees' notion of their organisation's environment and its priorities. Although there is booming evidence that green work climate may be an important tool in evoking employee PEB, the exact mechanism by which climate exerts its effects remains unclear. Previous studies have shown that it is not necessary to have positive relationship between organisational policies and employee behaviour (Ramus & Steger, 2000, Whitmarsh, 2009). However there has been one promising study avenue by Norton et al. (2015) which investigated how a green work climate ascends employee motivation for engaging in PEB. They based their model on the theory of normative conduct, which attributes behaviour to social norms (Cialdini, Reno, & Kallgren, 1990).

As an extension to the literatures above, this study argues that green work climate perceptions despite not directly inducing PEB, can act as a moderator of a positive relationship between the perceived PEB and the innate employee personal attributes. Hence, the following hypothesis was proposed:

H6: A green work climate possesses a positive indirect effect on the relationship between PN and PEB Figure 1 presents the research framework of the study.

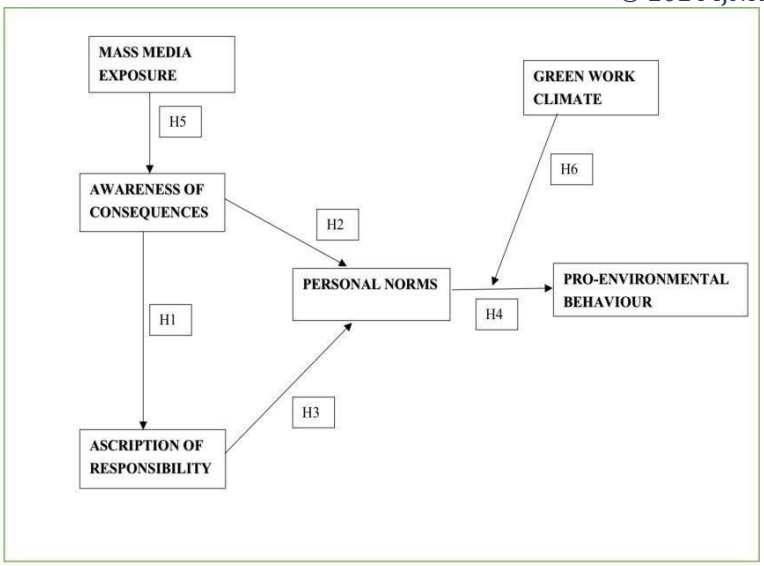


Figure 1: Research Framework.

3. Research Method

Sample

Target respondents for this study were healthcare workers working in various operational healthcare facilities in Malaysia. A non-probability purposive sampling method was used to gather the target sample, via utilising purposive sampling to screen and gather respondents. Based on the statistical power analysis performed (Faul et al., 2009), a minimum sample size of 119 was required (effect size = 0.15 [medium], $\alpha = 0.05$) to achieve 95% statistical power. However, this study managed to obtain up to 200 respondents in total.

This research has been done based on the cross-sectional study method using survey methodology. Hence, the data were gathered by a structured questionnaire method designed to answer the research questions. Due to logistical challenges of reaching respondents physically albeit the post Covid19 phenomenon and time constraint, response collections for this study were done using self-administered questionnaire, which was distributed via online sharing forum platform such as national healthcare associations and work based digital platforms. The questionnaires were then propagated in the form of forwarding which reached to all our respondents, where upon completing the questionnaire, these healthcare workers were then asked to help forward the online questionnaire to their associates within the

healthcare sector. The questionnaire contained 3 segments; part A, B, and C. A screening question of Job category within health sector was inserted in the part A, the demographic section to ensure that the respondents truly fit the qualifying criteria, being a part of the healthcare system.

The procured sample of 200 respondents represented a majority of females accounting to 65.5% of the total responses, the robust responses obtained from the Tricenarian age group, with the most common job specification being healthcare assistants' category which comprised of nurses and medical assistants. Majority of the respondents were qualified with a Bachelor's degree. The maximum numbers of responses of the 200 were from the avenue of private hospitals, amounting up to 44%. In summation, with the 200 respondents acquired for this study, the target minima sample size was exceeded, based on acceptable level of statistical power at 80%, thus sufficing to say that the results are considered robust (Hair et al., 2017).

Table 1: Respondent Profile

eatures	haracteristic	requency(pax)	ercentage %
ender	ale emale	9 31	1.5% 5.5%
ge	0-29 years old 0-39 years old 0-49 years old 0-59 years old 0 years old and above	3 0 8 9 0	6.5% 5% 4% 9.5% %
thnic group	alay hinese Indian Others	0 2 5 3	5% 6% 2.5% .5%
ighest Education evel	lementary / Primary school econdary school / Vocational edu igher Diploma / Bachelor's Master's egree / PhD	2 30 6	% 6% 5% 8%
ob specification	pecialist/Consultant edical Officer House Officer Nurse edical/clinic assistant on-clinical thers	9 3 5 7 6 2	4.5% 6.5% 2.5% .5% % % %
onthly income ange	M 1500 and below M 1501 – RM 3000 M 3001 – RM 5000 M 5001 – RM 7000 M 7001 – RM 9000	6 3 5 4	% 8% 6.5% 7.5% %

	Above RM 9000	0	0%
Avenue of clinical practice	Public hospital	6	3%
	Private hospital Government clinic	8	4%
	Private clinic	9	.5%
		7	3.5%

Measurement

All the constituents of the questionnaire construct were adapted from renowned, well- established studies and literal entities which have been validated and endorsed by academicians and technical experts. The survey questionnaire was pre-tested by two industrial experts and one academician to ascertain its content validity. The technical experts were asked to examine the questionnaire items regarding their wording, clarity, and relevancy. In addition, the estimated necessary time for completing a single questionnaire was around 10-15 minutes. Based on feedback from the industrial experts and academicians, no modifications were required to be applied to the questionnaire. Accordingly, AC, AR and PN were measured with four, two and four items respectively as adapted from Onwezen et al. (2013). Two items were used as metrics to measure MM which were adapted from the works of Wang et al, (2022). As for GC, four items were used as measure and they were attuned from Norton et al. (2015). And finally, for PEB, the constructs were measured by seven items adapted from the study of Robertson and Barling (2012). All these measures were scored on a Likert scale. Five points Likert scale ranged from 1 (strongly disagree) to 5 (strongly agree) were used for the items denoting all variables of AC, AR, PN and one part of MM. For the other part of the MM item, a 5-point scale, ranged from 1 (Never) to 5 (Always) was used. As for the items covering PEB and GC items, a 7-point Likert scale ranged from 1 (strongly disagree) to 7 (strongly agree) has been used instead. Based on extant studies (Hansmann & Binder, 2020), the gender, age, and education from the demographic data were engaged as control variables in relation to PEB.

4. Analysis and Findings

Data collected were analyzed using SEM-PLS via software PLS 4. SEM is a multivariate data analysis technique which allows a researcher to examine the relationships among multiple independent and dependent items and variables simultaneously. PLS-SEM is able to approximate complex relationships and emphasise prediction (Hair et al., 2019). The reason for utilising this SEM-PLS method is due to its given which does not require a normal

distribution of the data. Concomitantly, the measurement model was evaluated first and the structural model evaluation was done.

Measurement Model Evaluation

The quality of our measurement model was gauged by assessing the reliability, convergent validity and discriminant validity. To begin with, as stipulated in Table 1, the composite reliability for all constructs was greater than the threshold of 0.70 (Hair et al., 2017; 2019), which demonstrates a valid internal consistency amongst all constructs. Furthermore, the outer loadings and average variance extracted (AVE) were further scrutinized to assess the convergent validity. As depicted in Table 2, AVEs for all constructs were higher than the suggested value of 0.50 which exhibits satisfactory levels of convergent validity. Hence all these findings affirmed the satisfactory levels of all constructs.

Table 2: Results of Measurement Model

nstruct and Indicators	oadings	CR	VE
vareness of consequences	856		597
e effects of pollution on public health are worse than we realise	768		
llution generated in one country harms people all over the world	777		
e balance in nature is delicate and easily upset	788		
er the next several decades, thousands of species will become extinct	758		
een work climate	965		875
r hospital / clinic is worried about its environmental impact	876		
r hospital / clinic is interested in supporting environmental causes	956		
r hospital / clinic believes it is important to protect the environment	950		
r hospital / clinic is concerned with becoming more environmentally friendly	957		
ass media exposure	844		733
ften read/watch information about environmental protection from mass media (e.g. public signboards, television, newspapers, magazines, internet, social media, etc.).	960		
w often do you come across information about environmental protection from mass media e.g. public signboards, television, newspapers, magazines, internet, social media, etc.)?	738		
o-environmental behaviour	913		601
hen at work, I print double sided whenever possible.	752		
hen at work, I put compostable items in the compost bin.	695		
hen at work, I put recyclable material (e.g. cans, paper, bottles, batteries) in the recycling bins.	724		
ring reusable eating utensils to work (e.g. travel coffee mug, water bottle, reusable containers, reusable cutlery).	837		
hen at work, I turn lights off when not in use.	805		
ake part in environmentally friendly programs (e.g. bike/walk to work day, bring own local lunch day) at my workplace.	784		
nake suggestions about environmentally friendly practices to managers and/or environmental committees, in an effort to increase my hospital/clinic's environmental performance.	821		
rsonal norms	900		693
eel a moral obligation to protect the environment	793		
eel that I should protect the environment	876		
eel it is important that people in general protect the environment	795		
cause of my own values/principles, I feel an obligation to behave in an environmentally friendly way	863		
cription of responsibility	828		707
ery citizen must take responsibility for the environment	850		
eel partly responsible for the environmental problems on our planet	832		

Note: CR = Composite Reliability; AVE = Average Variance Extracted

Besides that, the heterotrait–monotrait (HTMT) ratio of correlations (Henseler et al., 2015) was appraised to showcase discriminant validity. Discriminant validity polices a construct measure to be empirically unique and represent events of interest that other measures in a structural equation model are not able to gauge (Hair et al., 2017; 2019). The HTMT ratios of all constructs were less than the threshold of 0.90 which denotes how significantly different each construct is from one another. This can be noted upon looking at Table 3 as shown below. After inspecting both Table 2 and Table 3, it becomes evident that all the constructs in the research model demonstrate acceptable reliability and validity.

Table 3: Discriminant Validity (HTMT Criterion)

.Awareness of consequences						
.Green work climate	.109					
.Mass media exposure	.063	.420				
.Pro-environmental behaviour	.135	.475	.320			
.Personal norms	.305	.202	.299	.313		
.Ascription of responsibility	.250	.160	.178	.186	.691	

Structural Model evaluation

After imploring the reliability and validity of the outer model, it can further delve into the structural model of this study. A structural model is where conceptual variables are connected to each other, which is the equivalent of a system of regression equations or a path model, in which the multicollinearity, path coefficient, coefficient of determination, effect size and predictive relevance of a study. After establishing the absence of multicollinearity, analysis proceeds to the hypotheses of this study. As aware of, there were 5 direct and 1 indirect hypotheses developed. As tabulated by the results in Table 3, the postulation of the direct hypotheses were corroborated as explained accordingly, AC (β=0.172, $p < 0.01$) does positively influence AR; AC (β=0.163, $p < 0.01$) does positively influence PN; AR(β = 0.501, $p < 0.01$) heavily influences PN on a positive note; PN(β= 0.217, $p < 0.01$) in return does impact PEB positively. However, as for MM, MM (β=0.123, $p > 0.05$), it does not pose a significant effect on the AC.

Based on Table 4, it can be deduced that Hypotheses 1,2,3,4 were supported, meanwhile hypothesis 5 was not supported and falls behind in negation. Among all of that, upon looking

at the significant relationships, based on the literature of Cohen's (1988) guidelines, AR poses the strongest effect (f^2=0.350, large) upon PN, hence securing the strongest relationship of constructs in this study. As illustrated in Figure 2 below, the structural model path coefficients depict that its findings do signify the predictive validity of the research model.

Figure 2: Structural model path coefficients

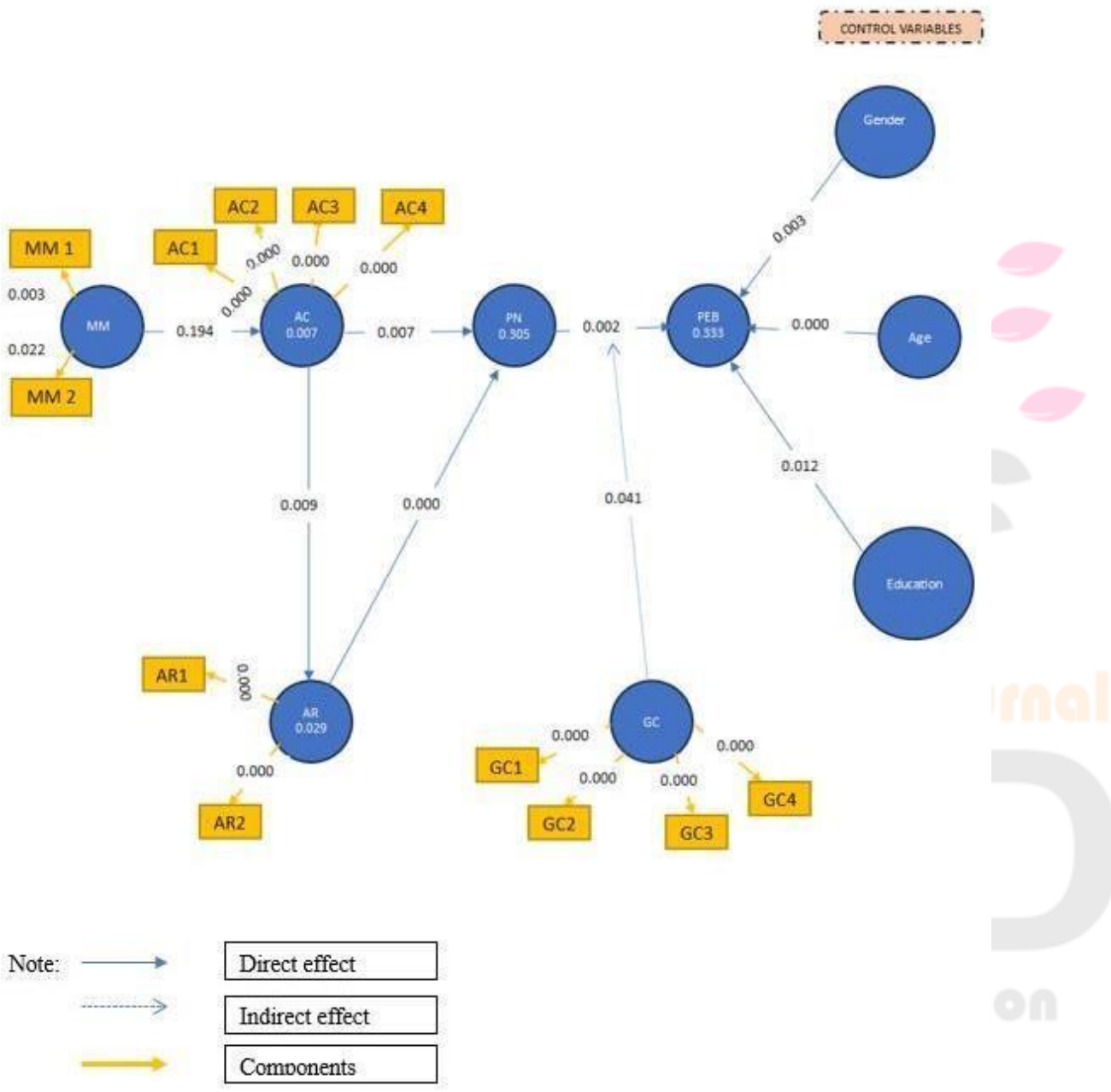


Table 4: Results of Measurement Model

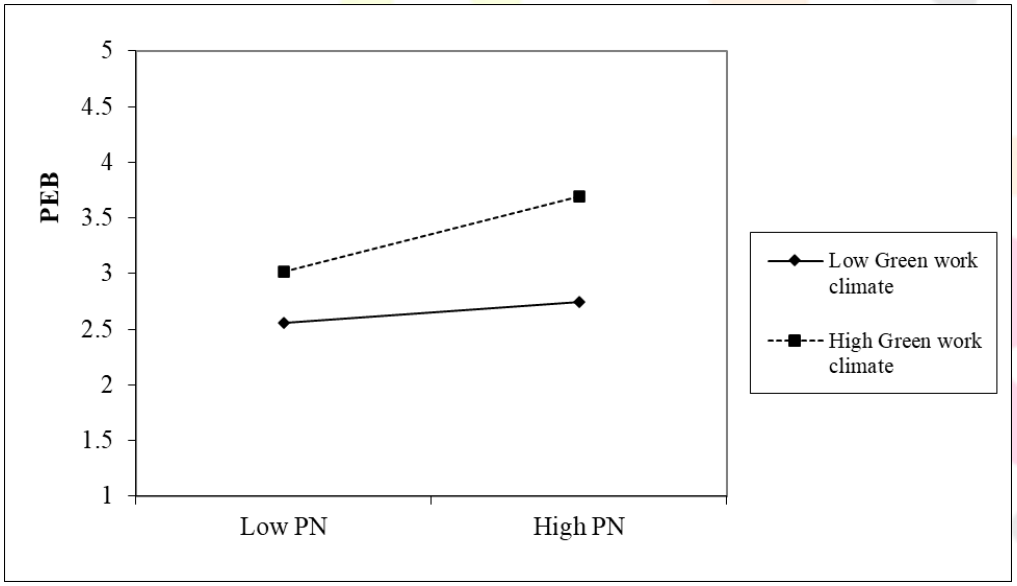
Hypothesis	Path Coefficient	Std. Error	t-value	95% confidence interval	*f*2	Decision
irect effect						
1: Awareness -> Responsibility	.172	.072	.377**	.042, 0.276]	.030	upported
2: Awareness -> PN	.163	.066	.451**	.049, 0.268]	.037	upported
3: Responsibility -> PN	.501	.047	0.657**	.415, 0.570]	.350	upported
4: PN -> PEB	.217	.075	.900**	.096, 0.342]	.066	upported
5: Mass Media -> Awareness	.084	.098	.863	0.082, 0.207]	.007	ot supported
ıdirect effect						
6: Green Work Climate*PN -> PEB	.123	.071	.734*	.010, 0.238]	.023	upported

ote: * p<0.05; ** p<0.01 (one-tailed)

Moderation effects

Hence, via the bootstrapping (5000 resampling) method done, it signifies that PN does pose a positive indirect effect (strengthening) on PEB through GC as the moderator, thus supporting hypothesis 6. Figure 3 announces this positive moderating effect of GC on PN in fostering PEB. The graph below proves that the higher the weightage of PN, the greater the occurrence of PEB when coupled with moderating effects of GC.

Figure 3: Moderating effect of GC on the relationship between PN and PEB



5. Discussion

This study has empirically demonstrated that the NAM can be converged into fostering pro- environmental behaviour amongst healthcare workers by tapping into the core attributes of personal norms and via instilling green work climate as a moderator. This study is a deeper affirmation of its predecessor studies done by Norton et al. (2012) which testimonies via their study that positive relationship between green work climate and environmental sustainability practices among employees does exist in general. The green climate is still very much under the weather in Malaysia. More participation is needed to champion the green agenda. The environmental crisis and climate change derivatives calls more intervention in Malaysia. This worrying scenario has adverse effects on the general public's health.

A survey conducted on 2021 Consumer Intelligence Series yielded a result of 91% of organisation leaders, and business chiefs believe that their organisations have a definite responsibility to act on environmental sustainability issues (MGTC, 2023). In addition, this study also serves as a prodigal reassertion towards the study carried out by Onwezen et al. (2013) which transcribes that positive self-conscious emotions such as Awareness and Responsibility do support the reasoning of the individual personal norms in relation towards the environment which in return would guide apt behavioural choices for the individual to make towards the environment. Few scholarly articles have discussed on the development and installation of environmentally friendly behaviour in workplaces, such as according to Wang et al. (2022), personal norms are the key factors in establishing pro-environmental behaviour amongst employees of an organisation. Vicente-Molina et al. opinioned that pro-environmental behaviour can be changed by public-sphere behaviour such as public policies and general sustainability settings. The basis of any sustainable development is founded upon three essential pillars: social, economic, and environmental.

Prior researchers have vigorously focused on the economic scale of applying green energy sources to come to terms with environmental related issues. However, a glaring gap has always been present in most environmental or clean energy-related studies where most of the literature focuses on the curbing of the production of bad environmental energy, thus neglecting the fundamental critical subject which lies within the primary perception of a green environment coupled with the consumption of the procured green energy (Peng et al., 2022). Hence this study has attempted to bridge that gap by pivoting the more fundamental

aspects of personal values and principals of sound individuals in evoking the need of being altruistic towards the environment, that said being sector specific, thus focusing on the creed of healthcare system here. This could be a precursor in identifying relevant norms that could be consolidated into the field of healthcare which in return could potentially translate into a more environmentally friendly operational practice. However, as conflicting as it towards the proposed expectations, mass media exposure does not seem to have worked its course in creating environmental awareness in the healthcare sector. The adoption of digitalisation and propagating sustainability is key phenomenon that has changed perception and behaviours of the general public lately (Yildirim, 2021). Yet, the alarming lack of green propaganda within our healthcare system can be scrutinized via the results of this study in where majority of the respondents were indifferent and naïve in receipting mass media tools in comprehending what environmental sustainability is. These results are devastatingly inconsistent with pre- existing environmental studies which were emphasising the crucial need of mass media campaigns and exposures in raising the public's awareness of environmental issues and stimulating the sense of responsibility (Ando et al., 2021; Östman, 2013). Instead, the direct effect of mass media exposure on evoking awareness is not supported by the factual evidence as shown, where the findings clearly demonstrate that such an effect cannot be transmitted to foster pro environmental behaviour through the bouts of personal norms.

Theoretical Implications

There are a few salient theoretical implications that can be derived from this study. To begin with, this study has contributed towards a more nuanced aspect of investigating a targeted group of employees, here being healthcare workers using the NAM in Malaysia. This study has once again proved with its validated findings of PN does in fact influence PEB positively reaffirms that personal attributes of an individual does contribute towards igniting altruistic emotions over the environment. Secondly, this study also presses on the knowledge of the NAM which deepens the understanding of the investigated determinants influencing pro- environmental behaviour among healthcare employees.

This study supports the notion of its predecessor studies of employee's green work climate perceptions in identifying the relationship between the perceived presence of an organisational sustainability policy and pro environmental behaviour (Ramus & Steger,

2000), with its glaringly positive result of how GC positively imposed an indirect influence over PEB as a moderator through attributes of PN.

Practical implications

Based on the failed theoretical proposition of mass media exposure failing to influence the fostering of pro-environmental behaviour amongst our respondents consisting of healthcare workers of all sorts, a certain dire action can be whereby the national medical organisations should be prompted into incorporating more environmentally sustainable practices and relevant issues in medical publications such as Malaysian Medical Association published annual booklets and health magazines. Nevertheless, in one's day to day life, the common individual tends to make his or her daily choices and might forgo their goals when making life decisions (Weßel et al., 2019). Human beings mainly rely on specific set of thinking systems to facilitate them into making such decisions (Kahneman, 2003), especially in this fast running, paper chasing world. This opens doors to further probe this study into the dimensions of social nudging. Nudging, as a concept itself was introduced in 2008 by Richard Thaler and Cass Sustein, which brings upon a definition of "any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives (Thaler & Sustein, 2008). Meanwhile, the construct called "choice architecture", as mentioned in the definition, implies to the "environment in which an individual makes a choice" (Thaler and Sustein, 2008).

On top of that, this study empirically reveals that green work climate does positively influence the personal norms of the healthcare employees to uphold a more environmentally sustainable work ethic. It boosts the validity of previous studies that have proven that work climate is a reliable indicator towards the employee attitude and behaviour (Kuenzi & Schminke, 2009). In regard to which some literary works supported the notion that work climate is an important factor to be investigated in order to understand and facilitate pro- environmental behaviour amongst employees of an organisation (Norton et al., 2012). This opens a paradigm of integrating green policy development in healthcare hiring, especially in developing country like Malaysia where it requires additional attention from decision-makers in the healthcare sector. Green growth has been a major focus in the 11th Malaysia Plan
2016-2020 for sustainability in socio-economic development. On the contrary of the goals, medical wastes generated by this country has amounted up to almost 58,000 tons per year.

Incineration capacity has only been manageable up to 20,000 tons as there was a surge in the numbers by 43% since the pandemic. The World Health Organisation (WHO) reports 20% all worldly plastic waste result from medical waste. Unfortunately, the pull for more sustainability in healthcare practices and specific medical device design has not come fast enough and the health care industry remains a significant driver of carbon emissions, plastic use, and waste in landfills around the globe. Although there have been no studies conducted to study the correlation between any behavioural theory towards PEB in this country, there have been individual studies done on PEB and the factors that could mediate it. A study conducted by Razak and Sabri (2019) contributes an understanding of the pro-environmental workplace behaviour in the Malaysian public sector, via also identifying the most influencing factors of pro-environmental workplace behaviour. In addition to this, Yusop and Adam (2021) signified PEB as more of a multidimensional concept which reflects upon an individual action to achieve organisational environmental sustainability goals and to achieve a good environmental performance in the workplace operations. Policymakers can siphon these healthcare related environmental behavioural studies into the budgeting of a national agenda which could in return loom more channels toward the researches and developments which would primarily focus on creating environmentally sustainable medical apparatus and products. This study could potentially act as a subtle push towards advocating for government incentives and policies that support and adopt PEB and green work practice in healthcare sector.

Limitations and suggestions for future research

By default, just as any other research or study, this research also contains its version of limitations. The data collected was restrained only to the healthcare facilities in Malaysia and focused into the operational healthcare institutions only. This limits the exponential generalisability towards other regions of the world and non-operational healthcare institutions such as medical colleagues, academies, and public health screening avenues. Also, this research is confined to its inability to screen individuals based on their true introspective perceptions, this is due to time and logistical constraints. Nevertheless, this study holds the potential to be further explored in healthcare sectors of various demographics based on cross geographical distribution, if given the opportunity. Apart from that, as this study was done using the cross-sectional design, it is limited in its comprehension of the results as to be only of correlational relationships amongst the constructs or variables. Despite this study being

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guided by the NAM in exploring the personal attributes via using a mediation path of green work climate, it would be further fruitful for upcoming research in adopting a more longitudinal design to demonstrate specific causality among the variables perceived in the study. Furthermore, given the non-significant influence of MM towards triggering AC and in turn evoking PEB, future study may warrant a moderator that could liaise the MM effect onto AC. Into the bargain of making this study more metier, the independent variables could be further categorised into specific entities comprising of psychological climate, organisational politics and green human resource management within the healthcare sector as indicators to assess the dogma of pro-environmental behaviour. Ambitiously, this study could also be perpetuated into divulging further into the concept of social nudging in promoting a more environmentally sustainable healthcare as the nudging approach holds colossal prowess towards a "green" context since this particular perspective is yet to commercially adopted for the basis of promoting pro-environmental behaviour (Siaw et al., 2021).

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