

ADOPTING SUSTAINABILITY: THE ROLE OF MOTIVATION AND INTENTION TO FORMING GREEN BEHAVIOR

Khrisna Vembri Yudanto¹, Fanny Martdianty

Department of Management, Faculty of Economics and Business, Universitas Indonesia
Jl. Prof. Dr. Sumitro Djojohadikusumo UI Depok 16424, Indonesia

Article history:

Received
10 January 2024

Revised
6 March 2024

Accepted
22 May 2024

Available online
30 September 2024

This is an open access
article under the CC BY
license ([https://
creativecommons.org/
licenses/by/4.0/](https://creativecommons.org/licenses/by/4.0/))



OPEN ACCESS

Abstract:

Background: In the midst of increasingly worrying environmental conditions, various actions are needed from both individual and organizational sides in determining their behavior. All behavior is believed to have an impact on the environment, depending on the behavior itself. It was discovered that employee green behavior (EGB), was used as an instrument to realize corporate sustainability.

Purpose: This research aims to determine the influence of employee knowledge and awareness on EGB, which is mediated by the factors of green motivation and behavioral intentions.

Design/methodology/approach: This research uses primary data taken from a survey from a state-owned company in Indonesia running in the energy sector, disguised as XYZ Company. The sample used was 422 employees. The data analysis was conducted by structural equation modeling (SEM) with Lisrel 8.80.

Finding/result: This research found that green motivation and behavioral intentions were proven to significantly mediate the relationship between employee knowledge and awareness on employee green behavior.

Conclusion: This research has deep implications in enriching the perspective of implementing environmentally friendly behavior in the business environment and strengthening managerial management by providing comprehensive considerations for management in realizing environmentally friendly business processes as a whole, especially in the field of human resource management.

Originality/value (State of the art): This research fills the empirical gap by providing research in the energy sector and increasing the number of samples used from previous research.

Keywords: behavioral intention, green behavior, green motivation, knowledge and awareness, sustainability

¹ Corresponding author:
Email: khrisna.vembri@ui.ac.id

INRODUCTION

Scientists and environmentalists around the world agree that the cause of environmental degradation, increased pollution, and loss of biodiversity lies in human behavior (Mtutu and Thondhlana, 2016). The human behavior in question is all activities that can harm the environmental ecosystem, leaving pollution impacts that affect the health of living things, be it humans, animals, and plants, as well as environmental ecosystems. An environmental problem that is increasingly worrying today is its rapid degradation. Then, from the emergence of the phenomenon of environmental problems, it was discovered that employee green behavior (EGB) was used as an instrument to realize corporate sustainability. Employee green behavior is defined as employees who behave friendly to the environment, are oriented towards the principles of sustainability, and are not wasteful in the use of resources, which are beneficial for the company's sustainable development (Hasebrook et al. 2022). Environmentally friendly behavior has a complex pattern and includes various behavioral characteristics. Examples include environmentally conscious travel habits (using public transport instead of private vehicles), sourcing sustainable products, and reducing single-use items.

A number of recent studies state that several factors that positively influence EGB are employee knowledge and awareness of the environment, as revealed by Safari et al. (2018). The same thing was expressed in other studies, where environmental knowledge and awareness also influence employee motivation and then encourage these employees to improve EGB (Maqsoom et al. 2023). The global average temperature at the beginning of June 2023 has reached 1.5 degrees Celsius hotter than pre-industrial temperatures, which is the critical limit for global warming according to the 2015 Paris Agreement (Ahmad, 2023). According to ERA5 data, the 5th generation global weather forecast model produced by ECMWF (European Center for Medium-Range Weather Forecasts), the daily global average temperature was at or above the 1.5 degrees Celsius threshold between June 7-11, reaching a maximum of 1.69 degrees Celsius above it on June 9 (ECMWF, 2023).

The Grand theory used in this research is in accordance with the description of the theory of planned behavior (TPB) put forward by Ajzen in 1991, which is based on the premise that individuals make logical and

reasonable decisions to engage in certain behavior by evaluating the information available to them regarding a problem.

This available information can be related to an individual's knowledge and awareness regarding this problem. So from here it is known that there is a possible relationship between environmental knowledge and awareness on EGB. Apart from that, it is interesting to discuss the mediating factors consisting of green motivation, behavioral intentions, environmental attitude, and green commitment, which in previous research, namely Safari et al. (2018) and Maqsoom et al. (2023), have not been carried out simultaneously in the test. It is hoped that this research can contribute to filling the research gap and enrich the discussion regarding the variables studied.

So far, almost no previous studies have discussed Behavioral Intention's mediation in the connection of environmental knowledge and awareness toward EGB. Also, the use of green motivation in separated form of intrinsic and extrinsic as a mediation (Qureshi et al. 2021). So the author uses other research that can predict this relationship. For example, findings Maqsoom et al. (2023) reveal that environmental knowledge and awareness practices in accordance and significant impact on employee green behavior. Likewise, behavioral intention is significantly and positively related to employee environmental performance. This research aims to determine the influence of employee knowledge and awareness on employee green behavior (EGB) which is mediated by the factors of green motivation and behavioral intentions. Testing green motivation separately has never been done before in relation to environmental knowledge and awareness and EGB as far as the search has been carried out, so it will be a novelty in this research.

METHODS

This study ran in a quantitative research method, with the intention of building and developing mathematical models for analyzing data to prove hypotheses. This research collects primary data utilizing a survey through corporate electronic mail (email). Considering the total employee population amount of 42.163, Slovin's formula has been used to calculate the sample size for at least 396 employees conducted in purposive sampling. The sample criteria are employees

who have worked at a company in Indonesia that run in the energy sector, known as XYZ, at least 1 year from being declared as a permanent employee. This means that interns and on-the-job training employees are excluded from this research. Apart from that, with 1 year of experience, it is hoped that employees will have sufficient understanding of company rules and regulations as well as company culture. They also have strong views on company culture and represent most of the age groups as a whole. The sample will involve all levels of education starting from high school, diploma, bachelor's, master's and doctoral levels.

Respondent data will be collected through a single cross-sectional survey questionnaire or collected over a certain time period. Single cross-sectional data collection has several advantages, such as describing a more representative sample and avoiding bias in responses because it is only collected once in a certain period of time (Malhotra, 2009). The research was deployed around August, 2023.

Measurement Tools

Some additional steps in creating a questionnaire include a readability test to find out whether other people understand the words used in the questionnaire; A pretest was also carried out to test the initial validity and credibility of the questionnaire. Finally, the main test will be carried out to determine the results of hypothesis testing. This will be done using measurement models and structural models, modeled using structural equation modeling (SEM). For data processing, it is planned to use Lisrel 8.80 to test measurement models and structural models. Measurements in this study use a Likert Scale to explain whether someone agrees with the statement in the questionnaire on a scale of 1 to 7. The Likert scale values are as follows: The Likert scale used in this study is (1) strongly disagree, (2) disagree, (3) quite disagree, (4) Neutral, (5) quite agree, (6) agree, (7) strongly agree.

Malhotra (2009) explains frequency distribution as a mathematical distribution with the aim of getting the sum of responses with different values and to convey this calculation in the form of a percentage. This section will analyze the frequency distribution by grouping data into certain categories and the amount of data in each category can then be seen to enrich information about the data from this research. The grouping of data can then be presented in several forms such as bar charts,

pie charts and tables to make it easier to visualize the information you want to convey.

Ullman & Bentler (2003) explain structural equation modeling (SEM) as a collection of statistical techniques that can show the relationship between one or more independent variables, both continuous and discrete, and one or more dependent variables, both continuous and discrete. The SEM method would be suitable for use in research where there are latent variables that cannot be directly observed or measured. Measurement model analysis is also called confirmatory factor analysis (CFA). Brown & Moore (2012) explained that the purpose of conducting CFA is to determine the magnitude and nature of the factors that influence variation and covariation between indicators. An indicator is said to be valid if it is able to measure variables correctly. The validity measure of the indicator is when the t value is > 1.96 or the t value is < -1.96 at the 95% confidence level (two tailed) and also has an SLF value > 0.5 (Wijanto, 2008). Reliability discusses the consistency of a measurement. An indicator can be said to be reliable in CFA if it has a construct reliability (CR) value > 0.7 and average variance extracted (AVE) > 0.5 (Wijanto, 2008).

This research will use 28 items in total. Six question items from Gatersleben (2002), which were also used in the research of Safari et al. (2018) is used to explore employee knowledge and awareness. The EGB will be analyzed by use 8 question items from Kim (2016). Then, examine motivation factors related to environmentally friendly aspects separately, namely green intrinsic motivation and green extrinsic motivation using indicators formulated by Li et al. (2020), both utilizing 5 question items. In analyzing behavioral intentions, will use 4 items from Safari et al. (2018).

Individual behavior that is relatively more positive and friendly towards the environment is known as pro-environmental behavior (PEBs). This behavior is arguably based on environmentally responsible behavior, environmentally sustainable behavior, and environmentally friendly behavior. Thus, pro-environmental behaviors and green behavior are the same thing (Wang, 2016). EGB can be explained as employee behavior that can be measured and contribute to building sustainability of the environment in the workplace (Ones & Dilchert, 2012; Norton et al. 2015). Previous research concerned with the subject

of environmental sustainability, including Ones and Dilchert (2012), Paille' and Boiral (2013), and Norton et al. (2015), has just underlined the importance of encouraging environmentally friendly behavior in the workplace (Bissing-Olson et al. 2013). According to Kirkwood and Walton (2014), environmentally friendly processes in organizations include recycling programs, implementing environmental policies, reuse, minimizing the use of resources (reduce), energy conservation through technology, reducing energy usage, water consumption efficiently, decreasing carbon dioxide emissions, managing supply chains focused on environmentally friendly issues, deploying life cycle analysis (LCA), calculating environmental effects, conducting an environmental management system, and also running energy audits. The idea of employee green behavior can be said to be the extent to which employees contribute to pro-environmental activities as well as go further their tasks in everyday life (Bissing-Olson et al. 2013).

In accordance with Davenport & Prusak (1998), knowledge is known as "a mixture of experience, values, contextual information, and expert insight that provides a framework for evaluating and combining new experiences and information." Likewise, Bollinger and Smith (2001) consider knowledge as "an individual's interpretation of information based on personal experience, skills, and competencies." Findings Maqsoom et al. (2023) reveal that environmental knowledge and awareness practices have a positive and impactful impact on EGB. Thus, the hypothesis is considered as follows:

H1: Environmental knowledge and awareness has a positive significant effect on employee green behavior.

Green motivation consists of intrinsic motivation and extrinsic motivation. Intrinsic motivation is the driving force for people to perform their tasks passionately without the presence of external benefits or rewards, according to Deci & Ryan (1985). People who are very interested in their work, because of curiosity or love for their work, feel more focused and involved when performing their tasks, which makes them enthusiastic and satisfied after completing them (Amabile et al. 1994). Adding the environmental concern factor to intrinsic motivation, it develops into green intrinsic motivation, which is defined as the desire, love, or interest for pro-environmental and environmentally friendly behavior that is driven by the power of internal satisfaction, not external rewards. and benefits (Li et

al. 2020). Extrinsic motivation, such as incentives, can influence pro-environmental behavior, where the value or reward of behavior encourages people to participate (Fang, 2021). The complex relationship between intrinsic and extrinsic motivation and self-regulation mechanisms forms environmentally friendly behavior (Taberero & Hernández, 2012). Based on previous references, the hypothesis is formulated as follows:

H2: Environmental knowledge and awareness has a positive significant effect on employee green behavior through intrinsic green motivation.

H3: Environmental knowledge and awareness has a positive significant effect on employee green behavior through extrinsic green motivation.

Based on socio-psychological research, intention is known as the main contributor to the form behavior or behavior of an individual (Chen & Lai, 2014). Many other investigations, including Ajzen (1991) and Chen & Lai (2014), confirm the predictive role of intentions on real behavior. Bae et al. (2014) defined which intentions are affected by attitudes, subjunctive norms, and perceived behavioral control. This research, according to Ajzen's (1991) Theory of Planned Behavior (TPB), analyzes behavioral intention aspects. The TPB is one of the most salient frameworks for explaining environmental-based behavior (Bamberg and Moser, 2007). According to this paradigm, attitudes about an action, social norms, and perceived behavioral control all influence how intentionally people behave (Ajzen, 1991; Francis et al. 2004). Attitudes were also revealed as a predictor in enhancing behavioral intention towards a trend in online shopping behavior (Putri & Alversia, 2024). Hence, the hypothesis is stated as:

H4: Environmental knowledge and awareness has a positive significant effect on employee green behavior through behavioral intentions.

The research gap from the previous reference study, Safari et al. (2018) and Maqsoom et al. (2023), has not specifically tested the research objects on companies operating in the utilities sector or the energy sector. Then in the research of Maqsoom et al. (2023), they have not tested the role of motivation separately, even though motivation itself can be differentiated as intrinsic motivation defined as desire, love, or interest to carry out a behavior that is driven by the strength of each individual's internal satisfaction, while extrinsic motivation is driven by external factors such as the existence of certain awards or appreciation (Deci & Ryan, 1985). As in research conducted by

Qureshi et al. (2021), who examine green motivation at the dimensional level consisting of green intrinsic motivation and green extrinsic motivation, so that it is known which dimensions have a more significant influence on the environmentally friendly movement. Testing at this dimension level is expected to be able to find out which dimensions need to be focused more on in providing suggestions for the development of this research. For this reason, this research will test the green motivation variable with the dimensions of green intrinsic motivation and green extrinsic motivation.

Therefore, the model that the author will test is as follows, namely looking at the mediating role of green motivation and behavioral intentions, on the connection between environmental knowledge and awareness and employee green behavior. So, based on previous research models from Safari, et al. (2018), Maqsoom, et al. (2023) and the description of motivation variables by Qureshi et al. (2021), then developed by the author to suit the current research context with the following scheme (Figure 1).

RESULTS

Descriptive Analysis

From the Table 1 we can see that the overall profile of 422 respondents can be seen. Of this number, male respondents dominated around 72.7% of the total. In terms of length of work classification, it was found that respondents were dominated by those who had worked 6-10 years as much as 41.7%. Furthermore, in terms of education, it is known that the majority of respondents were at the S1/D4 level at 67.3%. Then the profile was also mapped based on the level of position that most dominates involvement in this research, namely at functional level 4-6/ Upper-Basic Supervisory at 86%. Then the final profile was classified according to the field of work according to the branch of profession at XYZ itself where the three largest of the 17 branches of profession involved as respondents were distribution at 21.8%, then transmission at 13.7%, followed by commerce and customer management at 13%.

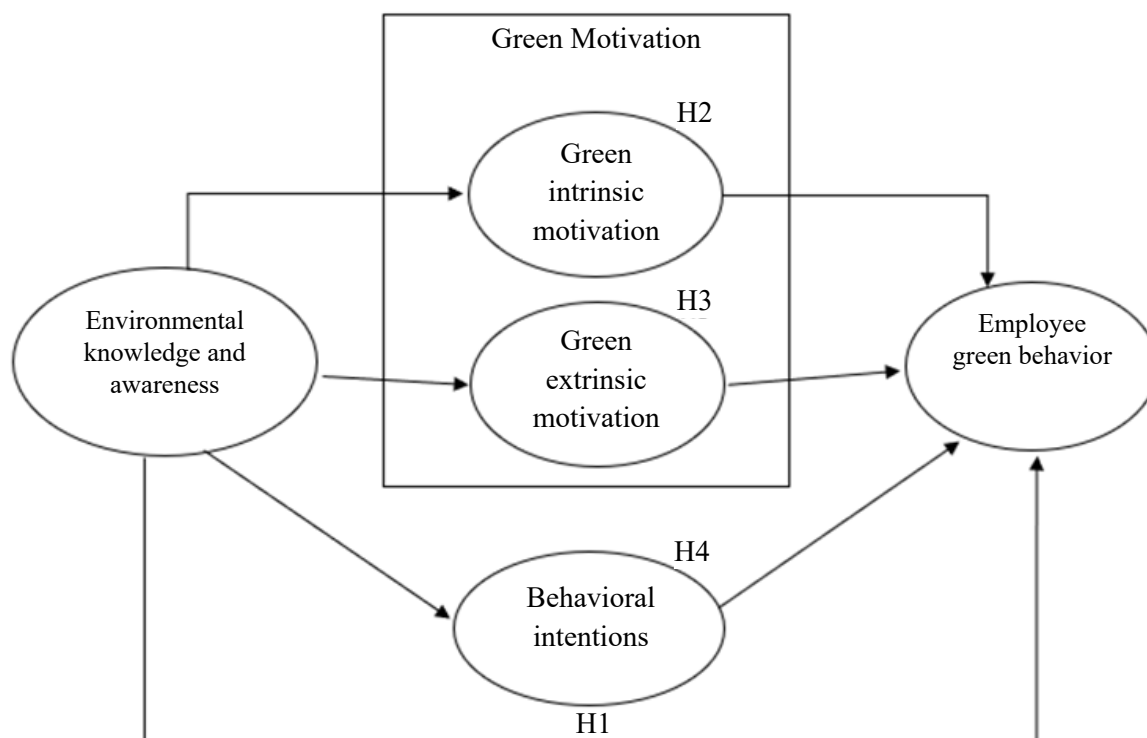


Figure 1 Hypotheses model

Table 1. Research sample demographic profile

Profile	Classification	Frequency	Percentage
Gender	Man	307	72.7%
	Woman	115	27.3%
Length of Service	1-5 years	95	22.5%
	6-10 years	176	41.7%
	11-15 years	59	14.0%
	more than 15 years	92	21.8%
Education Level	SMA/SMK or equivalent	37	8.8%
	D1/D2/D3	73	17.3%
	S1/D4	284	67.3%
	S2	28	6.6%
Position Level	Functional 4-6/Supervisory Basic-Upper	363	86.0%
	Functional 3/Basic Management	44	10.4%
	Functional 2/Middle Management	13	3.1%
	Functional 1/Upper Management	2	0.5%
Working Field	Generation	9	2.1%
	Transmission	58	13.7%
	Distribution	92	21.8%
	Commerce And Customer Management	55	13.0%
	Safety. Health And Environment	33	7.8%
	Engineering And Construction	27	6.4%
	Research And Development	0	0.0%
	Learning	12	2.8%
	Certification	2	0.5%
	Supply Chain Management	20	4.7%
	Regulatory And Compliance	8	1.9%
	Information Technology	3	0.7%
	Human Resources	29	6.9%
	Finance	38	9.0%
Communication. CSR And Office Management	24	5.7%	
Corporate Management	12	2.8%	

As shown in the Table 2, it is known that the validity test results are based on a Standardized Loading Factor value of more than 0.4, so all items in the questionnaire used can be said to be valid (Hair et al. 2021). Then, to find out the reliability of each dimension or variable being tested, you can find out the Composite Reliability (CR) and Average Variance Extracted (AVE) values. According to Fornell & Lacker (1981) a CR value ≥ 0.6 indicates that the dimensions or variables tested are quite reliable. Meanwhile, the expected result for the AVE value is ≥ 0.5 . However, if it is found that the CR value meets the desired level of reliability and the AVE value does not meet the requirements, then the reliability measurement is still acceptable (Lam, 2012).

As shown in the Table 3, based on the output of the model suitability test from Lisrel, it can be seen how good the model formed is based on the indicators above. Indicators of absolute model fit (Absolute Fit Indices) such as P-value Chi Square and SRMR show poor values. However, the RMSEA value shows good results. Meanwhile, the GFI value shows marginal value.

Furthermore, the incremental fit indicators (Incremental Fit Indices) which are indicated by the NFI, NNFI, CFI, IFI and RFI values all show that the relationship between these latent variables is good. So based on the test results above refer to Wijanto (2008) it can be said that the overall model has a good fit.

Table 2. Measurement model result

Variable	Dimension	Indicator	SLF	Validity	CR	AVE	Reliability
Employee Knowledge and Awareness		EKA1	0.64	Valid	0.793	0.390	Reliable
		EKA2	0.65	Valid			
		EKA3	0.60	Valid			
		EKA4	0.58	Valid			
		EKA5	0.7	Valid			
		EKA6	0.57	Valid			
Green Motivation	Green Extrinsic Motivation	GEM1	0.7	Valid	0.830	0.502	Reliable
		GEM2	0.76	Valid			
		GEM3	0.83	Valid			
		GEM4	0.73	Valid			
		GEM5	0.47	Valid			
	Green Intrinsic Motivation	GIM1	0.77	Valid	0.917	0.689	Reliable
		GIM2	0.88	Valid			
		GIM3	0.83	Valid			
		GIM4	0.88	Valid			
		GIM5	0.78	Valid			
Behavioral Intention		BHI1	0.81	Valid	0.840	0.568	Reliable
		BHI2	0.76	Valid			
		BHI3	0.72	Valid			
		BHI4	0.72	Valid			
Employee Green Behavior		EGB1	0.70	Valid	0.883	0.490	Reliable
		EGB2	0.69	Valid			
		EGB3	0.75	Valid			
		EGB4	0.78	Valid			
		EGB5	0.8	Valid			
		EGB6	0.75	Valid			
		EGB7	0.56	Valid			
		EGB8	0.52	Valid			

Table 3. Model fitness criterias

Goodness of Fit Criteria	Goodness of Fit Value	Counted Value	Conclusion
Absolute Fit Indices			
P-value	$p\text{-value} \geq 0.05$	0	Poor Fit
RMSEA	$RMSEA \leq 0.08$	0.064	Good Fit
SRMR	$SRMR \leq 0.05$	0.063	Poor Fit
GFI	$GFI \geq 0.90$	0.86	Marginal Fit
Incremental Fit Indices			
NFI	$NFI \geq 0.90$	0.94	Good Fit
NNFI	$NNFI \geq 0.90$	0.96	Good Fit
CFI	$CFI \geq 0.90$	0.96	Good Fit
IFI	$IFI \geq 0.90$	0.96	Good Fit
RFI	$RFI \geq 0.90$	0.94	Good Fit

In order to explain the direct effect, it can be seen that with a t-value ≥ 1.645 , it can be said that the relationship between variables is significantly positive while the t-value ≤ -1.645 is significantly negative. So according to the calculation criteria, it can be seen that direct relationships show results that are not significant in the connection between Environmental Knowledge and Awareness and Employee Green Behavior.

Then, to measure the significance of the mediation or indirect relationship, the Sobel test will be used. Preacher & Hayes (2004) stated that one way to determine the significance of a mediating variable is to carry out the Sobel test. The Sobel test is considered stronger than the mediation significance measurement approach by Baron & Kenny (Preacher & Hayes, 2004). The Sobel test will take into account the path coefficient value and standard error of a relationship between variables. Sobel Test value ≥ 1.96 indicates a significant mediation relationship. Based on the

t-value, it can be shown that all mediation relationships that occur are full mediation relationships. Meanwhile, based on the Sobel test value ≥ 1.96 , it can be seen that significant mediation relationships occur in almost every mediation relationship tested.

According to the results that have been tested, as explained in Table 4, it is known that the relationship between environmental knowledge and awareness and employee green behavior has proven to be insignificant (t-value = 0.63). This contradicts the hypothesis being tested, so in this case hypothesis 1 is rejected. This finding is also in accordance with the theory expressed by Robbins & Judge (2013), where in general humans can experience cognitive dissonance, which occurs when someone's behavior may not match their knowledge and awareness with their attitudes and behavior. So even though someone knows and is aware of how to be environmentally friendly, they do not necessarily implement green behavior.

Table 4. Hypothesis testing result

Inter-Variable Correlation	Path Coefficient	T-Value	Sobel-Value	Description
Direct Effect				
Environmental Knowledge and Awareness → Employee Green Behavior	0.05	0.63	-	H1 Not Accepted
Environmental Knowledge and Awareness → Green Intrinsic Motivation	0.60	10.30	-	
Green Intrinsic Motivation → Employee Green Behavior	0.22	2.76	-	
Environmental Knowledge and Awareness → Green Extrinsic Motivation	0.29	4.74	-	
Green Extrinsic Motivation → Employee Green Behavior	0.13	2.52	-	
Environmental Knowledge and Awareness → Behavioral Intentions	0.53	8.67	-	
Behavioral Intentions → Employee Green Behavior	0.33	4.11	-	
Indirect Effect				
Environmental Knowledge and Awareness → Green Intrinsic Motivation → Employee Green Behavior	0.22	-	2.05	H2 Accepted
Environmental Knowledge and Awareness → Green Extrinsic Motivation → Employee Green Behavior	0.13	-	2.25	H3 Accepted
Environmental Knowledge and Awareness → Behavioral Intentions → Employee Green Behavior	0.33	-	3.73	H4 Accepted

The direct connection between the environmental knowledge and awareness and the green intrinsic motivation has a t -value = 10.30 then the relationship between the green intrinsic motivation and the employee's green behavior shows a t -value of 2.76, so it can be said that there is a significant indirect relationship. On the other hand, the direct relationship between the independent variable and the dependent variable was found to be insignificant with t -value of 0.63. Meanwhile, the value of $sobel = 2.05$ shows a significant value. From this explanation, a full mediation relationship occurs. So it can be concluded that hypothesis 2 is accepted. The findings show that green intrinsic motivation and green extrinsic motivation show the same relationship in mediating environmental knowledge and awareness with green behavior. So it can be said to be in line with previous research where extrinsic motivation, such as incentives, can influence pro-environmental behavior, where value or rewards for behavior encourage people to participate (Fang, 2021).

Direct relationship between the independent variable (environmental knowledge and awareness) and the mediating variable (green extrinsic motivation) with t -value = 4.74 then the relationship between the mediating variable (green extrinsic motivation) and the dependent variable (employee green behavior) shows a t -value = 2.52, then it can be said that there is a significant indirect relationship. Meanwhile, the direct relationship between the independent variable and the dependent variable was found to be insignificant with t -value = 0.63. From these results, it is known that there is a full mediation relationship. So it can be concluded that hypothesis 3 is accepted. This shows that rewards or other incentives from outside can encourage a person's behavior. In addition, other research finds that the complex relationship between intrinsic and extrinsic motivation and self-regulation mechanisms shapes environmentally friendly behavior (Tabernero & Hernández, 2012).

Then, direct relationship between the independent variable (environmental knowledge and awareness) and the mediating variable (behavioral intentions) with t -value = 8.67. Then, the direct relationship between the mediating variable (behavioral intentions) and the dependent variable (employee green behavior) shows a t -value = 4.11, so it can be said that there is a significant indirect relationship. Meanwhile, the direct relationship between the independent variable and

the dependent variable was found to be insignificant with t -value = 0.63, from these results, it is known that there is a full mediation relationship. So it can be concluded that hypothesis 4 is accepted. Meanwhile, other mediating variables, behavioral intention, show significant impact; we can refer to statements made by several previous researchers. Knowledge, attitudes, and social-psychological strengths greatly influence behavioral intentions (Yang et al. 2022). Additionally, Maqsoom et al. (2023) stated that awareness and knowledge about the environment influence the desire to behave. In other words, a better understanding of environmental problems and awareness of their consequences can make people more motivated to take more environmentally friendly actions, which in turn can result in more environmentally friendly actions. For example, previous studies show that behavioral intentions influence environmentally friendly behavior (Gifford & Chen, 2017). Based on the findings, it can be said that to form employee green behavior, employees' environmental knowledge and awareness are affected by behavioral intentions (path coefficient = 0.33), then green intrinsic motivation (path coefficient = 0.22), and the last, green extrinsic behavior (path coefficient = 0.12).

Managerial Implications

For practical impact, management can consider further strengthening the cultivation of environmentally friendly behavior at every opportunity, such as during routine meetings, both online and offline. Then it is also important to provide environmentally friendly educational materials to employees that illustrate the energy transition carried out by the management is not only limited from a technical perspective in their business processes, but also needs to be supported by the behavior of its employees in managing tasks related to the environment. As an effort to encourage employees to implement green employee behavior, management can also consider adopting performance appraisals that consider green behavior by providing rewards that are monetary (example: bonuses and incentives per semester) or non-monetary (example: recognition charter and being presented as an employee of the month). This aims to explicitly encourage employees to act environmentally friendly. As has been done in other countries such as England, where companies there implement incentives for employees who want to take part in environmentally friendly actions.

CONCLUSION AND RECOMMENDATIONS

Conclusions

By employing the theory of planned behavior, we strived to analyze the green behavior phenomenon experienced by employees from mature business just like state-owned companies. We examined the role of environmental knowledge and awareness as a potential trigger for resulting green behavior and how this relationship is affected by several mediators, namely green motivation and behavioral intentions. This study has found that all mediators proposed in this research are proven to be fully mediators. The resulting environmental knowledge and awareness further leads to forming green behavior through indirect relationships, ranked based on the highest mediators, which begin with behavioral intention, green intrinsic motivation, and green extrinsic motivation. Since the direct effect is not significant, the mediation relationship is so-called full mediation.

Recommendations

The present study had a number of limitations. This research involves Indonesian employees at a state-owned company operating in the energy sector as participants; therefore, generalizations to the results of other studies must be done with caution. Research results have the potential to be different when applied in different business sectors or regions, in this case countries with different cultures. The data collected is limited to respondents' responses to the questions in the questionnaire. The questionnaire has a weakness in that the data obtained from respondents is one-way. The researcher did not have the opportunity to confirm how well the respondent understood or the respondent's perception in answering the questions asked.

Further research is recommended to cross-validate the results of this study by using samples from different cultures, or by involving more respondents from other sectors, such as non-profit organizations for example hospitals, schools, etc., to test the generalizability of behavioral phenomena environmentally friendly. Also to gain more deep response, future research should add in-depth interviews with respondents so that information and perspectives related to the topics studied are stronger than just based on independent questionnaires.

FUNDING STATEMENT: This research did not receive any specific grant from public, commercial, or not-for-profit funding agencies.

CONFLICTS OF INTEREST: The author declares no conflict of interest.

REFERENCES

- Amabile T, Hill K, Hennessey B, Tighe E. 1994. The work preference inventory: Assessing intrinsic and extrinsic motivational orientations. *Journal of Personality and Social Psychology* 66(5): 950-967. <https://doi.org/10.1037/0022-3514.66.5.950>.
- Bae T, Qian S, Miao C, Fiet J. 2014. The relationship between entrepreneurship education. *Entrepreneurship Theory and Practice* 38(2): 217-254. <https://doi.org/10.1111/etap.12095>.
- Bamberg S, Möser G. 2007. Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal Environment Psychology* 27(1): 14-25. <https://doi.org/10.1016/j.jenvp.2006.12.002>.
- Bissing-Olson M, Iyer A, Fielding K, Zacher H. 2013. Relationships between daily affect and pro-environmental behavior at work: The moderating role of pro-environmental attitude. *Journal of Organizational Behavior* 34(2): 156-175. <https://doi.org/10.1002/job.1788>.
- Bollinger AS, Smith RD. 2001. Managing organizational knowledge as a strategic asset. *Journal of Knowledge Management* 5(1): 8-18. <https://doi.org/10.1108/13673270110384365>.
- Brown TA, Moore MT. 2012. *Confirmatory Factor Analysis*. New York: Guilford Publications.
- Chen C, Lai C. 2014. To blow or not to blow the whistle: the effects of potential harm, social pressure and organisational commitment on whistleblowing intention and behavior. *Business Ethics: A European Review* 23(3): 327-342. <https://doi.org/10.1111/beer.12053>.
- Davenport TH, Prusak L. 1998. *Working Knowledge: How Organizations Manage What They*. Boston: Harvard Business School Press.
- Deci EL, Ryan RM. 1985. *Self-determination and Intrinsic Motivation in Human Behavior*. Berlin: Springer Science & Business Media.
- Fang S. 2021. The pro-environmental behavior patterns

- of college students adapting to climate change. *Journal of Baltic Science Education* 20(5): 700-715. <https://doi.org/10.33225/jbse/21.20.700>.
- Fornell C, Larcker DF. 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18(1): 39–50. <https://doi.org/10.2307/3151312>.
- Francis J, Eccles MP, Johnston M, Walker AE, Grimshaw JM, Foy R, Kaner EFS, Smith L, Bonetti D. 2004. *Constructing questionnaires based on the theory of planned behaviour: A manual for health services researchers*. Newcastle: Centre for Health Services Research, University of Newcastle Upon Tyne.
- Gifford R., Chen A. 2017. Why aren't we taking action? Psychological barriers to climate-positive food choices. *Climate Change* 140: 165–178. <https://doi.org/10.1007/s10584-016-1830-y>.
- Hair JJ, Hult G, Ringle C, Sarstedt M, Danks N, Ray S. 2021. *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*. Singapore: Springer Nature.
- Hasebrook J, Michalak L, Wessels A, Koenig S, Spierling S, Kirmsse S. 2022. Green behavior: Factors influencing behavioral intention and actual environmental behavior of employees in the financial service sector. *Sustainability* 14(17): 108-114. <https://doi.org/10.3390/su141710814>.
- Kim YJ, Kim WG, Choi HM, Phetvaroon K. 2019. The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *International Journal of Hospitality Management* 76: 83-93. <https://doi.org/10.1016/j.ijhm.2018.04.007>.
- Kirkwood J, Walton S. 2014. How green is green? Ecopreneurs balancing environmental concerns and business goals. *Australasian Journal of Environmental Management* 21(1): 37-51. <https://doi.org/10.1080/14486563.2014.880384>.
- Lam L. 2012. Impact of competitiveness on salespeople's commitment and performance. *Journal of Business Research* 65(9): 1328-1334. <https://doi.org/10.1016/j.jbusres.2011.10.026>.
- Li W, Xuhui W, Bhutto TA, Maitlo Q. 2020. Unlocking employees' green creativity: the effects of green transformational leadership, green intrinsic, and extrinsic motivation. *Journal of Cleaner Production* 85(8): 255-269. <https://doi.org/10.1016/j.jclepro.2020.120229>.
- Malhotra KN. 2009. *Basic marketing research: A decision-making approach, Ed. 3*. London: Pearson.
- Maqsoom A, Umer M, Wesam SA, Salman A, Ullah F, Hassan A, Muhammad AM. 2023. Adopting green behaviors in the construction sector: The role of behavioral intention, motivation, and environmental consciousness. *Building* 13(14): 1036. <https://doi.org/10.3390/buildings13041036>.
- Mtutu P, Thondhlana G. 2016. Encouraging pro-environmental behaviour: Energy use and recycling at Rhodes University, South Africa. *Habitat International* 53: 142–150. <https://doi.org/10.1016/j.habitatint.2015.11.031>.
- Norton TA, Parker SL, Zacher H, Ashkanasy NM. 2015. Employee Green behavior: A theoretical framework, multilevel review, and future research agenda. *Organization & Environment* 28(1): 103-125. <https://doi.org/10.1177/1086026615575773>.
- Ones DS, Dilchert S. 2012. *Managing Human Resources for Environmental Sustainability*. Washington: Jossey-Bass.
- Paillé P, Boiral O. 2013. Pro-environmental behavior at work: construct validity and determinants. *Journal of Environmental Psychology* 36(4): 118-128. <https://doi.org/10.1016/j.jenvp.2013.07.014>.
- Putri CC, Alversia Y. 2024. Understanding The Determinants of Behavioral Intention For Online Shopping on Official Brand Websites. *Jurnal Aplikasi Bisnis Dan Manajemen (JABM)* 10(1): 71-84. <https://doi.org/10.17358/jabm.10.1.71>.
- Qureshi MA, Raza SA, Khan KA, Salam J. 2021. Do green HR practices enhance green motivation and proactive environmental management maturity in hotel industry?. *International Journal of Hospitality Management* 94: 102852. <https://doi.org/10.1016/j.ijhm.2020.102852>.
- Safari A, Salehzadeh R, Panahi R, Abolghasemia S. 2018. Multiple pathways linking environmental knowledge and awareness to employees' green behavior. *Emerald: Corporate Governance* 18(1): 81-103. <https://doi.org/10.1108/CG-08-2016-0168>.
- Tabernero C, Hernández B. 2012. A motivational model for environmentally responsible behavior. *The Spanish Journal of Psychology* 15(2): 648-658. https://doi.org/10.5209/rev_sjop.2012.v15.n2.38876.

- Ullman JB, Bentler PM. 2003. *Handbook of Psychology*. New Jersey: John Wiley & Sons. <https://doi.org/10.1002/0471264385.wei0224>.
- Wang YF. 2016. Modeling predictors of restaurant employees' green behavior: Comparison of six attitude-behavior models. *International Journal of Hospitality Management* 58: 66-81. <https://doi.org/10.1016/j.ijhm.2016.07.007>.
- Wijanto S. 2008. *Structural Equation Modeling dengan Lisrel 8.8*. Yogyakarta: Graha Ilmu.
- Yang D, Fang N, Ramírez-Asís E, Alashker Y, Abourehab MA, Zhang K. 2022. Mediating role of risk perception and environmental quality on the relationship between risk knowledge and traveler's intention in covid-19. *Frontiers in Environmental Science* 10: 902457. <https://doi.org/10.3389/fenvs.2022.902457>.