

Path Model: Effect of Knowledge, Personality and Behavior Intentions toward Climate Change Adaptive Behavior

Dede Tarmana^{1*}, Nadiroh², Agung Purwanto³

¹Jakarta State University, Indonesia. :Email: ddkhansa14@gmail.com.

²Promotor Research, Lecturer of Jakarta State University, Indonesia.

³Co-Promotor Research, Lecturer of Jakarta State University, Indonesia.

Abstracts: This study was aimed at modelling of climate change adaptive behaviour from basic model theory Responsible Environmental Behaviour (REB) by Hines, and to know the effect of knowledge about climate change (CC), personality, behavior intention toward CC adaptive behavior. A survey method was used by involving 481 Cadets at The School of Meteorology Climatology and Geophysics (STMKG) as sample in this study. There were 4 instruments in this research for measuring knowledge about CC (24 items, reliability .923), personality (25 items, reliability .933), behavior intention (34 items, reliability .976) and CC adaptive behavior of cadets (24 items, reliability .964). Data was analyzed by descriptive statistical, path modelling analysis and inferential statistics. The results revealed that path model at CC adaptive behavior have the significant suitability model. CC adaptive behavior significantly direct and indirect affected knowledge about CC, personality, and behaviour intention, but unaffected indirectly by knowledge about CC. Based on those findings, it can be concluded that variations in CC adaptive behavior of STMKG cadets are affected by variations in knowledge about CC, personality, and behaviour intention. It means that Path model can used to predict CC adaptive behavior based on knowledge about CC, personality, and behavior intention.

Keywords: Climate Change, Meteorology, Adaptation, Personality, Adaptive Behavior.

1. INTRODUCTION

In the last 21st century, climate change (CC) and global warming is the main environmental issue in the world, including in Indonesia. Based on data on disasters, Indonesia as part of The Asia Pacific region has experienced the highest number of disasters and is the most at-risk country [1], and also one of the vulnerable CC countries [2]. The climate change phenomenon has the greatest threats to all sectors of human lives, such as agriculture, health, energy, tourism, forestry, and water resources [3]. To face and minimize the negative impact of climate change, all countries in the world have to create strategies. There are two strategies must implemented by countries to antedate, avoid, and reduce climate change impact, namely mitigation and adaptation [4]. On 2014, Intergovernmental Panel on Climate Change (IPCC) stated that adaptation is the alteration process to real condition or expected climate change and its effects, pursuing to decrease or prevent horrible effects or abuse the positive value affect.

In context, the CC adaptation strategy, studied by Mengtian et al. (2021) informs that adaptation behavior toward CC is vital for reducing its impact and individual welfare losses [5]. It means in line with the statement of IPCC (2007) changing human behavior can relieve CC, so everything human activities play an important role to eliminate the effect of global warming and CC. Effectively, the individual needs guidance and support for CC adaptation, the reason why governments and stakeholders have to determine effective ways to motivate individuals to adapt to CC [6]. Similar studies about important human behaviors to adapt to CC explained by some researcher [7,8,9,10,11,12,13,14,15,16,17].

Theoretically, behavior is defined as everything that a person does both verbally and non-verbally, which can be seen or observed directly [18]. The other statement about behavior delivered by Rachel et al. (2015) is an action or anything a person does in response to internal or external events, the other definition of behavior is physical events that occur in the body and are controlled by the brain[19]. Furthermore, to explain the definition of CC adaptive behavior can use the Protection motivation theory (PMT) approach, risk appraisal, and adaptive appraisal [20,21]. Adaptive appraisal is an individual's cognitive process when evaluating their capacity to reduce a particular risk. Synthesis from PMT, CC adaptation behavior is defined as individual action to avoid risk/ the negative CC impact [22].

In actual situations and conditions, human behavior will influence some factors. Ajzen & Fishbein (1985) in the

theory of planned behavior describe that any 4 factors influence behavior, namely behavior intention, attitude, subjective beliefs, and perceived behavioral control [23]. The other theory is responsible environmental behavior by Hines, Hungerford, & Tomera (1987) show that behavior (responsible environmental behavior/ REB) influenced some factors, such as intentional acts, personality, and knowledge of issues [24]. Synthesis from two theories (planned behavior and responsible environmental behavior theory) that CC adaptation behavior influenced many factors. Challenging base on the result of synthesis theory is determined factors that have direct and indirect effects on CC adaptation behavior. Therefore, this study uses the synthesis theory as research propose to create a model of CC adaptive behavior (as a responsible environmental behavior) based on knowledge, personality, and behavior intention. The hypothetical model based on REB Theory can be seen in Figure 1 below:

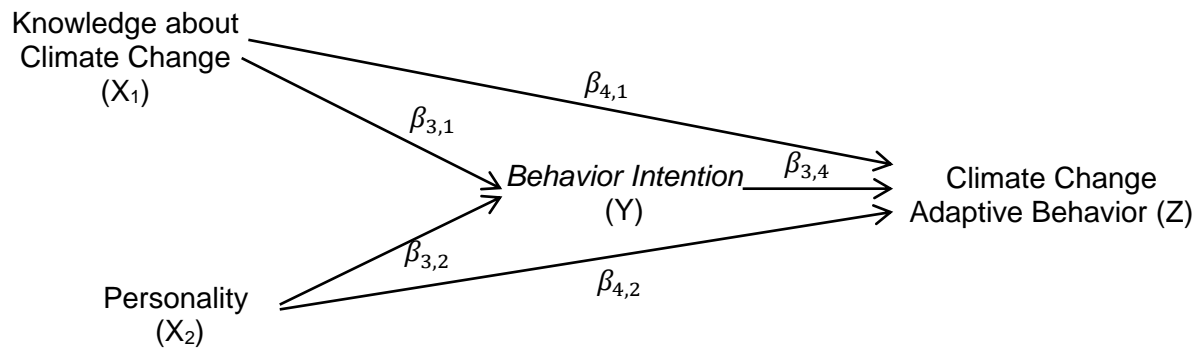


Figure 1: Hypothetical model research

In the model of CC adaptive behavior above shows the antecedent variable of adaptive behavior, such as knowledge and personality, is an exogenous variable. This means that the variable fundamentally has a direct and indirect effect on CC adaptive behavior (responsible environmental behavior). The first exogenous variable is knowledge about CC. According to the state by Bennet (1974) knowledge is a human essential need that determines one's behavior [25]. On the other side, some experts said that knowledge is all that a person knows about a particular subject that is obtained through various processes and has factual, conceptual, procedural, and metacognitive dimensions [26,27,28,29,30,31,32,33,34,35]. So knowledge of CC defined as all that is known by a person about CC through various processes according to the underlying dimensions, namely: factual, conceptual, procedural, and metacognitive.

The second exogenous variable that also influences the CC adaptive behavior is personality. In the reality of human life, personality is a principle component which differentiates one individual from another. The concept of personality contains the meaning of "social image" which a person uses in playing his / her role. Linear with the concept, Ryckman, (2004) states that personality is an organised and dynamic set of characteristic which an individual possess that distinctively impacts his or her cognition, motivation and behaviour [36]. Furthermore, definition of personality is as a collection of certain traits in an individual which is defined as the accuracy of a person's relatively stable characteristics in responding to and interacting with other people and their environment [37]. Previously, the other statement about personality delivered by Allport (1961) that "Personality controls the unique thinking and behavior patterns of an individual" [38]. Related context with behaviour, some experts mentioned that personality traits would be affected human behaviours [39,40]. To measure the personality as exogeneous variable, Goldberg (1993) suggest The Big Five Personality Theory [41], This Theory is reinforced by Durupinar (2009) claims that there are five dimensions of personality, namely openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism [42]. Openness to experience explains an imaginative and creative personality. Conscientiousness describes how much the individual can be controlled and shows caution. Extraversion elaborates a sociable personality, agreeableness represents someone who is very friendly, generous, and tends to work, and neuroticism is associated with emotionally stable behavior.

The last variable in the model, role as an intervening variable and also influences the CC adaptive behavior is behavior intention. Some experts state about behavior intention, their definition explain that behavior intention is the possibility or an indication of how someone wants / is willing to try and instill user trust in information so that it creates

satisfaction in it self [24,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58]. So based on this explanation, behavior intention will determine a person's behaviour to adapt to climate change. In opretational context, Tjiptono (2011) and Japrianto (2006) argue that there are four dimension for behavior intention variable, that is word of mouth, effective management of environmental resources, protecting from the dangers of environmental damage, and maintaining the environment [59,60].

2. MATERIALS AND METHODS

2.1. Study Site and Sampling

This research was conducted on several cadets at the Faculty of Meteorology, Faculty of Climatology, Faculty of Geophysics, and Faculty of Instrumentation School of Meteorology Climatology and Geophysics (STMKG). Previously, the trial was conducted on several cadets. This research is a quantitative method through a survey conducted on cadets and the data analysis technique used is path analysis. This research will create the model path of climate change adaptive behaviour (Z) based on knowledge about CC (X1), personality (X2) and behaviour intention(Y), and also will examines the direct effect and indirect effects between exogenous and endogenous variables. The variables in question are knowledge about CC (X1), personality (X2), behavior intention (Y), and CC adaptive behavior of cadets (Z).

2.2. Data and Analysis Method

There are four instruments used in this research, namely to measure the CC adaptive behavior of cadets (24 items, reliability .964), behavior intention (34 items, reliability .976), knowledge about climate change (24 items, reliability. 923) and personality (25 items, reliability .933). The population of this study was all cadets at the STMKG. The sampling technique used simple random sampling involving 481 cadets as the research sample. Modelling process will calculate path coefficient used least square error method to create path structure equation. Test for significant model used Anova (f-test) and individual test (t-test) for significant individual coefficient. As a prerequisite test, a normality test was carried out using the Kolmogorov Smirnov test (K-S test), linearity, Pearson correlation (product moment pearson), and homogeneity tests using the Levene test.

3. RESULTS AND DISCUSSION

3.1. Descriptive statistics and data preparation

Table 1. displays descriptive statistics for all research variables. All variables show the maximum value on the highest item score, meaning that positively some STMKG cadets have highest score, its mean that cadets of STMKG have good CC adaptive behaviour, high level ability of knowledge about CC, accurate of personality and high behavior intention. Futhermore, Tabel 1 also shows the average values, according average value describes that majority cadets of STMKG have indicated high positive image about CC adaptive behavior, knowledge of CC, personality and behaviour intention.

Table 1: Descriptive statistics for all research variable

	N	Range	Minimum	Maximum	Mean	Std. Dev	Variance	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
X ₁	481	21	3	24	19,95	3,388	11,481	6,172
X ₂	481	75	50	125	85,19	10,584	112,026	1,893
Y	481	92	78	170	148,63	19,907	396,276	-0,076
Z	481	73	47	120	95,28	15,083	227,498	-0,800

3.2. Path Model and Hypothesis Test

The prerequisite test for data analysis including path analysis modelling was carried out on normality, homogeneity, significance, and linearity between cadets CC adaptive behaviour, behaviour intention, knowledge about CC and personality. The result is that all sample data come from normal distribution populations that have homogeneous variances, significant for linearity tests. After the data has been obtained from the various required tests, the next step in modelling and testing the causality model is to carry out a path analysis. Based on the theoretical hypothetical model, a path analysis diagram will be obtained and the coefficient value for each path is calculated.

Calculation of the path coefficient of X1 to Z , X2 to Z, X1 to Y, X2 to Y, and Y to Z. The calculation results can be seen in Figure 2 below:

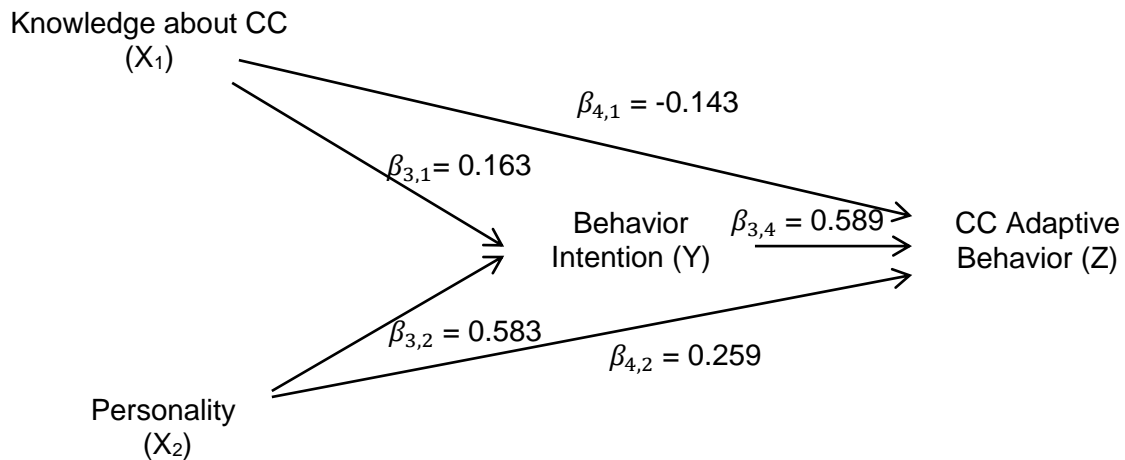


Figure 2: The Calculation result path coefficient in model research

From the calculation result path coefficient (Figure 2) obtained all path coefficient for two equations structure path model, the equation can be seen below :

- Equation structure path model 1 : $Y = 0.163X_1 + 0.583X_2 + e_1$
- Equation structure path model 2 : $Z = -0.143X_1 + 0.259X_2 + 0.589Y + e_2$

The next step is to calculate F and t value for goodness fit test model, The calculation results can be seen in Table 2. below:

Table 2: The Calculation result for path coefficient and goodness fit model test

Model		Standardized Coefficients Beta	t-Stat	Sig.	R	R Square	F-Stat	Sig.
1	Const.		5.129	.000				
	X ₁	.163	4.503	.000	.613	.376	143.7	.000
	X ₂	.583	16.102	.000				
2	Const.		2.268	.024				
	X ₁	-.143	-4.719	.000	.761	.579	218.4	.000
	X ₂	.259	7.020	.000				
	Y	.589	15.652	.000				

The goodness fit test use F-stat or p-value (sig), Table 2 shows that respectively F value for model 1 and model 2 are 143.7 and 218.4 with p-value for all model sig. = .000, it mean The model 1 and 2 have suitable significant to predict CC adaptive behavior base on knowledge about CC, personality, and behavior intention. According determination coefficient R square model 1 = .376, model 2 = .579, e₁ = .789, and e₂ = .649, it mean model 2 better than model 1 with 1453

ability model to describe variance of CC adaptive behavior = 58%. Regarding path coefficient value, the exogenous variable with highest influence toward CC adaptive behavior is behavior intention. Moreover, path coefficient value will be used to explain about direct effect and indirect effect exogenous variable toward endogenous variable through t-test (Table 3). The model 1 has two path coefficients, the first coefficient ($p_{3,1}$) of 0.163 with $t_{cal} = 4.503 > t_{table} (0.05; 481) = 1.645$; $p < 0.05$, which means that knowledge about CC has a significant direct effect on the behavior intention of cadets STMKG. The second path coefficient ($p_{3,2}$) is 0.583 with $t_{cal} = 16.102 > t_{table} (0.05; 481) = 1.645$; $p < 0.05$, which means that personality has a significant direct effect on the behavior intention of cadets STMKG. The model 2 has three coefficients as value for direct effect and two coefficients for indirect effect. The first coefficient at model 2 ($p_{4,1}$) is -0.143 with $t_{cal} = -4.719 > t_{table} (0.05; 481) = 1.645$; $p < 0.05$, which means that knowledge about CC has a significant direct effect on the CC adaptive behavior of cadets STMKG, the second coefficient ($p_{4,2}$) of 0.259 with $t_{cal} = 7.020 > t_{table} (0.05; 481) = 1.645$; $p < 0.05$, which means that personality has a significant direct effect on the CC adaptive behavior of cadets STMKG, the third coefficient ($p_{4,3}$) of 0.589 with $t_{cal} = 15.652 > t_{table} (0.05; 481) = 1.645$; $p < 0.05$, which means that behavior intention has a significant direct effect on the CC adaptive behavior of cadets STMKG, the fourth coefficient ($p_{4,31}$) of 0.096 with $t_{cal} = 0.764 < t_{table} (0.05; 481) = 1.645$; $p < 0.05$, which means that knowledge about CC hasn't significant indirect effect on the CC adaptive behavior of cadets STMKG through behavior intention, the last coefficient ($p_{4,32}$) of 0.343 with $t_{cal} = 7.932 > t_{table} (0.05; 481) = 1.645$; $p < 0.05$, which means that personality has a significant indirect effect on the CC adaptive behavior of cadets STMKG through behavior intention.

Table 3: The Calculation result path coefficient and tcal for coefficient individual test

No	Direct effect	t_{cal}	Indirect effect	t_{cal}
	$X_1 \rightarrow Z$	-4.719	$X_1 \rightarrow Y \rightarrow Z$	0.764
	-0.143		$0.163 \times 0.589 = 0.096$	
2	$X_2 \rightarrow Z$	7.020	$X_2 \rightarrow Y \rightarrow Z$	7.932
3	0.259		$0.583 \times 0.589 = 0.343$	
	$Y \rightarrow Z$	15.652		
4	0.589			
	$X_1 \rightarrow Y$	4.503		
5	0.163			
	$X_2 \rightarrow Y$	16.102		
	0.583			

4. DISCUSSIONS

According to the results of path modelling and hypothesis testing show that the path model CC adaptive behavior has suitable significant based on knowledge about CC, personality and behavior intention. For the results of hypothesis testing show that majority hypothesis getting significant, except hypothesis knowledge about CC hasn't significant indirect effect on the CC adaptive behavior of cadets STMKG through behavior intention. This means that cadets' CC adaptive behavior is influenced by variations in antecedent factors such as knowledge about CC, personality and behavior intention.

The findings of this study are supported other studies, such as the structural equation model 1 is in line with research in entrepreneurship, where the result study in this filed stated that the path model explains the personality variable as an exogenous variable that has a significant positive influence, both simultaneously and partially on interest or desire to behave as a dependent/exogenous variable [61,62,63,64]. The structural equation model 2 similar with other studies that yield information that positive linear knowledge determines environmentally responsible behavior [65,66,67,68,69,70,71,72,73,74]. The structural equation model 2 also supported by Ipikasari et al. (2020) researched to high school students where the result was that students' knowledge of ecological concepts had a strong positive ability in determining students' environmentally responsible behavior [75].

The novelty from the results of this study shows that there is a significant effect of knowledge about CC, personality and behavior intention on the CC adaptive behavior of STMKG cadets' directly and indirectly. When compared with other relevant studies, there are similarities and differences.

CONCLUSION

Based on these findings, it can be concluded that the path model CC adaptive behavior has suitable significant based on knowledge about CC, personality, and behavior intention. Moreover, the other point conclusion if we want to improve the CC adaptive behavior of STMKG cadets, the antecedent factors used in this study such as knowledge about CC, personality and behavior intention need to be considered based on the empiric findings. This estimates that in order for STMKG cadets to have CC adaptive behavior as a provision in shaping the character of the community who cares about the importance of CC adaptation, then the things that need to be considered are strengthening personality and knowledge about CC of lecturers so that lecturers can maximize their role not only in terms of teaching, but also educating and shaping the behavior intention of cadets by implementing the integration of environmental.

Therefore, it could be concluded that the variation or ups and downs or positivity and negativity of the CC adaptive behavior of STMKG cadets' is influenced by variations that are also raised by antecedent factors such as knowledge about CC, personality, and behavior intention. Therefore, it needs to be empowered through various learning strategies for environmental and CC adaptation.

REFERENCES

- [1] EMDAT. (2017). Retrieved from Disaster Trends: http://emdat.be/emdat_db/
- [2] Djalante, R. (2018). A Systematic Literature Review of Research Trends And Authorships on Natural Hazards, Disasters, Risk Reduction and Climate Change in Indonesia. *Natural Hazards and Earth System Sciences*, 18(6), pp. 1785-1810.
- [3] Vargas-Amelin, E., & Pindado, P. (2014). The Challenge of Climate Change in Spain: Water Resources, Agriculture and Land. *Journal of Hydrology*, 518, pp. 243-249.
- [4] Rospita, O. P., Minhas, H., & Shu, C. C. (2023). Assessment of environmental orientations of urban Taiwanese and their relation to climate change mitigation behaviour in central Taiwan. *Climate Services*, 30.
- [5] Mengtian, X., Yuandong, Z., Zhaohua, W., & Bin, Z. (2021). Behavioural Determinants Of An Individual's Intention To Adapt To Climate Change: Both Internal And External Perspectives. *Environmental Impact Assessment Review*, 91.
- [6] Van Valkengoed, A., & Steg, L. (2019). Meta-Analyses Of Factors Motivating Climate Change Adaptation Behaviour. *Nature Climate Change*, 9, pp. 158–163. <https://doi.org/10.1038/s41558-018-0371-y>.
- [7] Janet, K. S., Susan, C., & George, S. H. (2011). Human Behavioral Contributions to Climate Change: Psychological and Contextual Drivers. *American Psychologist*, 66(4), pp. 251–264.
- [8] Robert, G., Christine, K., & Amanda, M. (2011). Behavioral Dimensions Of Climate Change: Drivers, Responses, Barriers, And Interventions. *WIREs Clim Change*, doi: 10.1002/wcc.143.
- [9] Anneleen, K., & Erik, M. (2012). Beyond individual behaviour change: The role of power, knowledge and strategy in tackling climate change. *Environmental Education Research*. 18. 45-65. <https://doi.org/10.1080/13504622.2011.576315>
- [10] Rachel, A. H., Stuart, C., & Lorraine, W. (2016). Impacts of Adaptation And Responsibility Framings on Attitudes Towards Climate Change Mitigation. *Climate Change*, DOI <https://doi.org/10.1007/s10584-016-1627-z>
- [11] Tripathi, A., & Mishra, A. (2017). Knowledge And Passive Adaptation To Climate Change: An Example From Indian Farmers. *Clim. Risk Manag*, 16, pp. 195–207.
- [12] E. Keith, S., & Adam, M. (2018). A Social Trap For The Climate? Collective Action, Trust and Climate Change Risk Perception in 35 Countries. *Global Environmental Change*, 49, pp.140-153, ISSN 0959-3780, <https://doi.org/10.1016/j.gloenvcha>.
- [13] Rapholo, M., & Makia, L. (2020). Are Smallholder Farmers' Perceptions Of Climate Variability Supported By Climatological Evidence? Case Study Of A Semi-Arid Region In South Africa. *International Journal Climate Change Strategy Management*, <https://doi.org/10.1108/IJCCSM-01-202>.
- [14] Krettenauer, T., Wang, W., Jia, F., & Yin, Y. (2020). Connectedness With Nature And The Decline of Pro-Environmental Behavior in Adolescence: A Comparison of Canada and China. *J. Environ. Psychol.*, 71, <https://doi.org/10.1016/j.jenvp.2019.101348>
- [15] Newell, P., Twena, M., & Daley, F. (2021). Scaling Behaviour Change For A 1.5-Degree World: Challenges And Opportunities. *Global Sustainability*, 4(22), doi: <https://doi.org/10.1017/sus.2021.23>
- [16] Chang, M.-Y., Kuo, H.-Y., & Chen, H.-S. (2022). Perception of Climate Change and Pro-Environmental Behavioral Intentions of Forest Recreation Area Users a Case of Taiwan. *Forests*, 13(1476), pp. 1-17. <https://doi.org/10.3390/f13091476>
- [17] Agne, S., Ricardas, K., & Genovaite, L. (2022). The differences of climate change perception, responsibility and climate-friendly behavior among generations and the main determinants of youth's climate-friendly actions in the EU. *J Environ Manage*. 2022 Dec 1;323:116277. <https://doi.org/10.1016/j.jenvman.2022.116277>. PMID: 36137455.
- [18] John, W. S. (2009). *Educational Psychology*. University of Texas at Dallas: McGraw Hill.
- [19] Rachel, D., Rona, C., Zoe, H., Lorna, H., & Susan, M. (2015). Theories Of Behaviour And Behaviour Change Across The Social And Behavioural Sciences: A Scoping Review. *Health Psychology Review*, 9(3), pp. 323-344, DOI: <https://doi.org/10.1080/17437199.2014.941722>
- [20] Rogers, R. (1975). A Protection Motivation Theory of Fear Appeals And Attitude Change. *Journal Psychology*, 91, pp. 93–114.
- [21] Rogers, R. (1983). Cognitive And Psychological Processes In Fear Appeals And Attitude Change: A Revised Theory Of Protection Motivation.

Newyork: Guilford.

- [22] Villamor, G., Wakelin, S., Dunningham, A., & Peter, W. C. (2023). Climate Change Adaptation Behaviour of Forest Growers in New Zealand: An Application of Protection Motivation Theory. *Climatic Change*, 176 (3), <https://doi.org/10.1007/s10584-022-03469-x>
- [23] Ajzen, I., & Fishbein, M. (1985). Understanding attitudes and predicting social behaviour. Englewood Cliffs, NJ: Prentice-Hall.
- [24] Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and Synthesis of Research on Responsible Environmental Behavior: A Meta-Analysis". *The Journal of Environmental Education*, 18 (2), pp. 1-8.
- [25] Bennet, D. B. (1974). Evaluating Environmental Education Programs. *Environmental Education*. New York: John Wiley & Sons.
- [26] Gazalba, S. (1992). Sistematika Filasafat. Jakarta: Bulan Bintang.
- [27] Bagus, L. (1996). Kamus filsafat. Jakarta: Gramedia.
- [28] Notoatmodjo, S. (2003). Health Education and Behavior. Jakarta: PT. Rineka Cipta.
- [29] Suriasumantri, J. S. (2007). Filsafat ilmu. Jakarta: Pustaka Sinar Harapan.
- [30] Mubarak, I. (2011). Wahit. Health Promotion for Midwifery. Jakarta: PT. Salemba Medika.
- [31] Mukhtar, Ali H., & Sofwan. (2016). Work ethos and effectiveness of management transformative leadership boarding school in the Jambi Province. *International Journal of Applied Business and Economic Research*.
- [32] Suwanti, I., & Aprilin, H. (2017). Correlation Study of Patient's Families about Hepatitis Transmission with Hand Washing Behavior. *Jurnal Keperawatan*, 10(2), p. 13.
- [33] Desfiandi, A., Fionita, I., Ali, H. (2017). Implementation of the information systems and the creative economy for the competitive advantages on tourism in the province of Lampung. *International Journal of Economic Research*.
- [34] Toto Handiman, U., & Ali, H. (2019). The Influence of Brand Knowledge and Brand Relationship On Purchase Decision Through Brand Attachment. *International Journal of Business Marketing and Management (IJBMM)*.
- [35] Prayetno, S., & Ali, H. (2020). Entrepreneurial supply chain management competence: Predictors of work motivation advocate. *International Journal of Supply Chain Management*.
- [36] Ryckman, R.M. (2004). Theories of personality, 8th edn. Belmont, CA: Thomson/ Wadsworth.
- [37] Lawrence, A., Pervin & John P. Oliver. (1997). Personality Theory and Research. USA: John Willey and Sons, Inc.
- [38] Allport, G. W. (1961). Pattern and growth in personality.
- [39] Allport, G.W. (1954). Hand Book of Social Psychology. Cambridge: Addison Wesley Publishing Company. Inc.
- [40] Endler, N. S., & Magnusson, D. (1976). Toward an interactional psychology of personality. *Psychological bulletin*, 83(5), 956.
- [41] Goldberg, L. R. (1993). The Structure of Phenotypic Personality Traits. *American Psychologist*. 48: pp.26–34
- [42] Durupinar, F., Pelechano, N., Allbeck, J., Gdkbay, U., & Badler, N. I. (2009). How the Ocean Personality Model Affects the Perception of Crowds. *IEEE Computer Graphics and Applications*. 31(3). pp. 22-31. <https://doi.org/10.1109/MCG.2009.105>
- [43] Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behaviour. Englewood Cliffs, NJ: Prentice-Hall.
- [44] Krueger, N. (1993). The Impact of Prior Entrepreneurial Exposure on Perceptions of New Venture Feasibility and Desirability. *Entrepreneurial Theory Practice*, 18(1), pp. 5-21.
- [45] Eagly, A. H., & Chaiken, S. (1993). The psychology of attitudes. Fort Worth, TX: Harcourt Brace Jovanovich.
- [46] Zeffane, R. (1994). Understanding employee turnover: The need for a contingency approach. *International Journal of Manpower*. 15. p.22-37.
- [47] Simamora, Bilson. (2003). Winning the Market with Effective & Profitable Marketing. Jakarta : Gramedia Pustaka Utama.
- [48] Setyawan, Anton, A., & Ihwan, S. (2004). Effect of Service Quality Perception on Purchase Intentions: an Empirical Study on Supermarket Consumers. *Usahawan*, 7, pp.29-37.
- [49] Namkung, Y., & Jang, S. (2007). Does food quality really matter in restaurant?: its impact on customer satisfaction and behavioral intentions. *Journal of Hospitality and Tourism Research*, 31(3), pp. 387-410.
- [50] Margaretha, A. (2008, September). Customer Satisfaction Effects on Brand Preference and Repurchase Intention of Private Brands. *Jurnal Riset Ekonomi dan Bisnis*, 8(2), p. 58-69.
- [51] Dharmesta, B. S., & Irawan. (2008). Manajemen Pemasaran Modern. Yogyakarta.: Liberty.
- [52] Peter, J. P., & Olson, J. C. (2008). Consumer behavior and marketing strategy (8th ed.). Singapore: McGraw-Hill.
- [53] Astachariya, P. (2009). Individual Determinants on Responsible Environmental Behavior. *ABAC Journal*, 29(2).
- [54] Saha, G., & Theingi, H. (2009). Service quality, satisfaction, and behavioral intentions: a study of low-cost airline carriers in Thailand. *Management Services Quality*, pp. 350-372.
- [55] Neila, R. (2011). Development Instrument Measurement base on Theory of Planned Behavior. *BULETIN PSIKOLOGI*, 19(2), pp. 55-69.
- [56] Kotler, P. (2014). Manajemen Pemasaran. Edisi 13. Jilid 1. Jakarta: Prenhalindo.
- [57] Wang, P. L., & Q Qi, Y. (2014). Factors influencing sustainable consumption behaviors: A survey of the rural residents in China. *Journal Cleaner Production*, 62, p.152–165.
- [58] Fatria, Putrawan, I., & Artanti. (2019). Environment and Commitment, Locus of Control and Intention to Act. *Indian Journal of Public Health Research & Development*, 10(9), p.1781-1785.
- [59] Tjiptono, F. (2011). Service Management Creating Excellent Service. Jogjakarta: Andi.
- [60] Japarianto, E. (2006, April). Budaya dan Behavior Intention Mahasiswa Dalam Menilai Service Quality Universitas Kristen Petra. *Jurnal Manajemen Pemasaran*, 1(1), pp. 44-52.
- [61] Indriyani, L., & Margunani, M. (2019). The Influence of Personality, Entrepreneurship Education, and Family Environment on Interest in Entrepreneurship. *Economic Education Analysis Journal*, 7(3), pp. 848-862. <https://doi.org/10.15294/eeaj.v7i3.28315>
- [62] Yulvitriyani, B. S. (2018). The Influence of Entrepreneurship Knowledge, Self-Efficacy and Family Environment on Student Entrepreneurial Interest in Business and Management Groups (Survey of Class XII Students at State Vocational Schools in Bandung City). *Jurnal Manajemen Tool*. 10 (2).
- [63] Mahyarni, M., & Astuti, M. (2017). The Influence of Personality, Environment and Demographics on Behavioral Desires to Become Entrepreneurs Among College Students. *Journal of Management and Business Review*, 14(7), DOI: <https://doi.org/10.34149/jmbr.v14i1.34>

- [64] Ahmed, T., Klobas, J. E., & Ramayah, T. (2019). Personality Traits, Demographic Factors And Entrepreneurial Intentions: Improved Understanding From A Moderated Mediation Study. *Entrepreneurship Research Journal*, 11(4). <https://doi.org/10.1515/eri-2017-0062>.20170062.
- [65] Ardi, M. (2015). The Behavior of Moorland Farmers In Improving Environmental Quality In Soppeng Regency. *Indonesian Journal of Fundamental Sciences*, 1(1).
- [66] Septian, Y. (2016). Pro Environmental Behavior of High School Students in Bandung City Junior High School Students at Schools with an Environmental Insight Curriculum. *SOSIO DIDAKTIKA: Social Science Education Journal*, 3(2), pp.193-201. doi: <https://doi.org/10.15408/sd.v3i2.4386>.
- [67] M. Simanjuntak, P. (2017). Environmentally Responsible Behavior of Students (Relationship Between Knowledge of Climate Change and Self-Efficacy with Environmentally Responsible Behavior of Students). *IJEEM - Indonesian Journal of Environmental Education and Management*, 1(2), pp.59 - 65.
- [68] Mulyadi, M. (2017). The Influence of Environmental Knowledge, Local Wisdom, Locus of Control, And Farming Motivation Toward Responsible Environmental Behavior of Farmers in Soppeng District. *Jurnal Ilmiah Pendidikan Lingkungan Dan Pembangunan*, 16(2). pp. 72 - 84. <https://doi.org/10.21009/PLPB.162.01>.
- [69] As'ari, R. (2018). Community Knowledge And Attitude in Conserving The Environment With The Behavior Of Conserving The Sustainability of The Seputen Thousand Hill Area in The City Of Tasikmalaya. *GeoEco*, 4(1). <https://doi.org/10.20961/ge.v4i1.19166>
- [70] Rahmadiani, R., Utaya, S., & Bachri, S. (2019). Ecological Literacy Siswa SMA Adiwiyata dan Non Adiwiyata. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan*, 4(4), pp. 499 - 503.
- [71] Fibula, P., Putrawan, I. M., & Diana, V. S. (2020). Influence of Knowledge About Environmental Issues and Intention to Act Toward Student Responsible Environmental Behaviour. *IJEEM - Indonesian Journal of Environmental Education and Management*, 5(1), pp. 20-33. <https://doi.org/10.21009/IJEEM.051.02>
- [72] Rokhmah, Z., & Fauziah, A. (2021). Environmental Literacy Analysis of Junior High School Students in Schools with Environmental Insights Curriculum. *PENSA: E-JURNAL PENDIDIKAN SAINS*, 9(2), pp. 176-181.
- [73] Andi, T. H. (2021). Influence of Environmental Knowledge and Environmental Attitude Toward Pro-Environmental Purchasing Behaviour (Sase Study about Gen Z Consumer Behavior). *AKSES: Jurnal Ekonomi dan Bisnis*, 16(2), <http://dx.doi.org/10.31942/akses.v16i2.5552>
- [74] Rakotoarisoa Maminirina, F., Gancar, C. P., Rakotoarisoa Maminina, H. S., Ansar, A., & Nisful, L. (2022). Environmentally responsible behavior and Knowledge-Belief-Norm in the tourism context: The moderating role of types of destination. *International Journal of Geoheritage and Parks*, 10(2), Pp. 273-288. <https://doi.org/10.1016/j.ijgeop.2022.05.001>
- [75] Ipiasari, I., Diana, V. S., & Ratna, K. (2020). The Effect of Knowledge of Ecological Concepts And Intention to Act Toward Responsible Environmental Behavior of Senior High School Students. *International Journal for Educational and Vocational Studies (IJEVS)*, 2(7).

DOI: <https://doi.org/10.15379/ijmst.v10i2.1496>

This is an open access article licensed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>), which permits unrestricted, non-commercial use, distribution and reproduction in any medium, provided the work is properly cited.